

Bidder Name: _____
Address: _____
Telephone #: _____
Facsimile: _____

**Supply and installation of playground equipment
Victoria Park**

BID DATE: February 23, 2016

BID TIME: 10am CST

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

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February 2, 2016

Dear Bidder:

The bid materials for **Supply and installation of playground equipment at Victoria Park** includes: Invitation to bid, Specification Package, CAD file. Because this project involves replacement of existing decks and component play pieces, the equipment supplied must be compatible with the existing Miracle post system. The existing posts will be repainted as part of this bid via an electrostatic paint process. The Miracle Playground equipment can be purchased from the local representative "Team Reil Inc. 888-438-7345".

Prior to submitting, please copy your proposal and retain one copy for your records.

I look forward to reviewing your bid proposal and working together with you on these projects. Should you have any questions or comments please contact me at (847) 561-2172.

Sincerely,

Gary T. Buczkowski
Division Director of Planning & Development

INVITATION TO BID

Sealed bids for **Supply and installation of playground equipment at Victoria Park** will be received by the Hoffman Estates Park District at our office; 1685 West Higgins Road, Hoffman Estates, Illinois 60169 until **exactly 10:00 A.M. February 23, 2016**, and then publicly opened and read. Bids submitted after the closing time will be returned unopened.

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

Proposals shall be submitted on the attached Quotation Form and returned in sealed envelope. 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 thirty (30) calendar days.

The Hoffman Estates Park District requires all bidders to comply with all provisions of the Park District Prevailing Wage Ordinance **O-15-06**. 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 an 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 under General Information/Bid Information.

Sincerely,

Gary T. Buczkowski
Division Director of Planning & 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:

Supply and installation of playground equipment at Victoria Park

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 23, 2016**

Committee Approval: **March 1, 2016**

Board Approval: **March 29, 2016**

Contract Awarded: **March 30, 2016**

Commencement of Work: Commencement of paperwork shall begin immediately upon notification of award. The bidder understands that all equipment purchased under this bid shall be delivered to the park districts yard no later than six weeks after issuance of the Purchase Order.

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. Preparation and Submission of Bids

Before submitting proposal, each bidder shall carefully examine all documents pertaining to the Work and visit the sites 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, allowance, fees, 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. Obtain all permits and arrange for all inspections. Pay all fees and costs incurred.

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. In order to insure consideration, the Proposal should be enclosed in an envelope marked "Bid Proposal for Hoffman Estates Park District – **Supply and installation of playground equipment at Victoria Park** to be received until **10:00 A.M., February 23, 2016** showing the return address of the sender and addressed to: Hoffman Estates Park District, 1685 W. Higgins Road, Hoffman Estates, Illinois 60195. Bids must 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 revised bid. Unless called for, alternate bids will not be considered.

5. 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.

6. 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.

7. Time Schedule

The timely execution of any project is extremely important. As this work's timeliness will have a direct effect with other trade components and ultimately on the project's completion. An important factor in evaluating the bids and awarding the contract is this work's timeliness which will have a direct effect on subsequent trade or Contracts and the ultimate completion of the Project. The successful bidder will have to acknowledge that his price and proposed work will be completed according to the proposed schedule provided as part of this bid process.

8. 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.

9. 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 **Supply and installation of playground equipment at Victoria Park**" to be received until **10:00 A.M., February 23, 2016** 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.

10. 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.

11. Withdrawal of Bids

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

12. 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.

13. 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.

14. Authorization to Proceed

The accepted bidder shall be issued a Purchase Order from the Owner as authorization to proceed.

15. 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.

SPECIFICATIONS

SUPPLEMENTARY CONDITIONS

SECTION I – GENERAL

1. Application

The General Conditions and Supplementary General 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.

Engineer: The authorized Representative of the Owner.

Landscape Architect Gary Buczkowski an employee of the Hoffman Estates Park District.

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 Invitation and Instructions to Bidders; the proposal, the Owner's Purchase Order, the Drawings, the Supplementary Conditions and the Specifications.

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. Payment

Final Payment will be made only after the delivery and acceptance of the equipment in conformance with the plans and specification and upon proper invoicing along with all waivers, sworn statements, guarantee statements, and other documents set forth in the Contract Documents. Final payment will be made approximately thirty (30) days after invoicing.

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.

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 prior to bid. 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 agree to a 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. Assignment

The Contractor or any Subcontractor shall not assign the Contract or any monies due to become due to him hereunder, to any Person, Firm, or Corporation without previous written consent of the Owner.

29. Extras

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

30. 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.

31. 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.

32. 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.

33. 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.

34. Illinois Prevailing Wage Provision

The Contractor and /or supplier doing work on the project and **on the owner's premises** shall comply with the Illinois Prevailing Wage Ordinance adopted by the Hoffman Estates Park District. The provision states that all labor required to complete the project will be paid at no less than the prevailing rate determined by the Illinois Department of Labor.

The Contractor and each subcontractor is required to provide at the time of pay request or at least once monthly, a copy of a certified payroll of labor used in conjunction with the project(s). The certification shall include each worker's name, address, telephone number (when available), Social Security Number, classification(s), and the occupation of all laborers, workers and mechanics employed by the Contractor and each subcontractor in conjunction with the project(s). The records shall also show the actual hourly wages paid in each pay period to each employee and the number of hours worked each day and in each workweek by each employee. While participating on a park project, each contractor's payroll records shall include the starting and ending times of work each day for each employee.

Should there be no request for payment presented to Hoffman Estates Park District; the Contractor shall submit the certified payroll records monthly either by mail or electronically to the Hoffman Estates Park District.

The certified payroll shall be accompanied by a statement by the Contractor or subcontractors which avers: such records are true and accurate; the hours by rate paid to each worker is not less than the general prevailing wages as required by the Prevailing Wage Act; and the Contractor or subcontractor is aware that the filing of a certified payroll that he/she knows to be false is a Class B misdemeanor. The Hoffman Estates Park District shall accept any reasonable submission by the Contractor that meets the requirement of the Prevailing Wage Act.

35. 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.

36. 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

37. 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 .

38. 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.**

39. 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.

40. 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.

41. 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.

42. 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.

SPECIFICATIONS

Playgrounds

This project involves the removal and replacement of all decks, ramps, roofs and play components on the existing Victoria 2-5 & 5-12 playgrounds. Upon completion of the repair and electrostatic painting of all posts the contractor will install new decks, ramps, roofs and play components. Because the new equipment must be attached to the existing post system it is most likely that the new equipment must be manufactured by the same company who originally manufactured the post system. That company was Miracle Recreation Company. Their local representative is Team Reil Inc. 888-438-7345.

However if a contractor wishes to utilize equipment other than Miracle, that equipment must meet or exceed the following minimum specifications.

PART 1 GENERAL PLAYGROUND SPECIFICATIONS:

1.01 Safety Standards & Guidelines. All public playground equipment supplied shall meet all applicable provisions of the current "Handbook for Public Playground Safety" published by the Consumer Product Safety Commission (CPSC), and of ASTM F1487-11 "Standard Consumer Safety Performance Specification for Playground Equipment for Public Use", published by the American Society for Testing and Materials (ASTM). Products bearing the certification seal of the International Play Equipment Manufacturers Association (IPEMA) have received written validation of compliance with ASTM F1487-11.

Quality System Certification. The manufacturer's quality system is certified to ISO 9001, ISO 14001 and OHSAS 1800.

1.02 WARRANTY

All warranties shall be full replacement of product including all shipping costs to Hoffman Estates, Illinois. Replacement items shall carry the same warranty as the original part being replaced. At no time shall a prorated formula be used to determine replacement value.

1. FIFTEEN (15) YEAR ONE HUNDRED (100) YEAR WARRANTY on aluminum deck posts, steel deck posts, the fastening system, and associated fastening hardware against structural failure due to weather corrosion or defects in materials or workmanship.
2. WARRANTY on steel support legs and plastic components against structural failure due to weather corrosion or defects in materials or workmanship.
3. FIFTEEN (15) YEAR WARRANTY on play system steel components including railings, rungs, and rigid climbers against structural failure due to defects in materials or workmanship.
4. FIFTEEN (15) YEAR WARRANTY on plastic components against structural failure due to defects in materials or workmanship.

5. FIFTEEN (15) YEAR WARRANTY on all steel coated decks against failure due to weather corrosion or defects in materials or workmanship.
6. THREE (3) YEAR WARRANTY on Slash proof Seats and 360 degree Buck Tot Seats for Swings against structural failure due to defects in materials or workmanship.
7. ONE (1) YEAR WARRANTY against structural failure due to defects in materials or workmanship on the following products and components: main support materials and decks; all pool slide support structures, stairways, landings, and railings, bleachers; and all products and components not specifically listed above, including, without limitation, all moving parts and flexible climbers.
8. WARRANTY shall begin with the acceptance of the completed, installed playground and upon certification of adherence to specifications by manufacturer's representative. By the owner upon certification of playground by the manufacturer's designated representative.
9. LIFETIME WARRANTY on positive bolt-through fastening systems.

1.03 MANUFACTURING GREEN INITIATIVES

Each bidder shall acknowledge that the manufacture he represents and for which this bid is comprised has obtained ISO 9001 and ISO 14001 certified. Other environmental initiatives can be listed by the bidder on the bid form. Such items may be used to determine the final low qualified bidder in cases where the lowest two bids received are \$500 dollars or less in difference in bid amount. Such determination shall be made by staff prior to presentation to the reviewing body and be publicly noted as part of the bid tabulation.

All posts used on the deck structure and associated equipment shall be no less than 5" OD x11GA galvanized steel tubing.

One single occupant bucket type spinner shall be included in the design and provided in the bid price

PART 2 TECHNICAL DATA & SPECIFICATIONS PLAYGROUND EQUIPMENT

The owner understands that most play equipment design is proprietary and or unique to each manufacture and for this reason the owner will entertain other designs so long as the scope and design intent is met along with the minimum manufacturing specifications. Such designs shall be reviewed by the owner prior to the acceptance of bids. All alternate approvals of design shall be made in writing by the owner.

2.01 General Product Material Specifications Playground Equipment

A. Direct Bolt Clamps

Shall be cast aluminum heat-treated alloy A356-T6 with a tensile strength of at least 34,000 psi, yield strength of at least 24,000 psi, shear of 20,700 psi, and elongation of 3.50% minimum. Each casting shall clamp to the post with two connection bolts. Clamp casting shall encapsulate the component attached to support surge loads, preventing surge loads being supported by only the hardware. Clamp shall be finished with a baked on powder coating.

If compression clamps are used they shall have 3 attachment points plus 2 hammer drive pins and shall be Die Formed 12 gauge steel with welded 11 gauge attachment bracket.

B. Platforms

1. Platforms shall be one piece all welded construction consisting of 12 GA HRPO steel shell and gussets, PVC coated after fabrication. Punched holes shall not pass a 3/8" dowel on horizontal surfaces. Gussets and or angles shall be welded and positioned so that no point on the deck surface is greater than 8" from the support. Platforms shall connect to posts with self-leveling fastening system, with two attachment points per corner, one of those being an open ended slot for easy assembly. Platform fasteners shall attach to threaded inserts which are CNC precision factory installed into the posts.
2. Recycled Platforms shall be one piece all welded construction consisting of 12 GA HRPO steel shell and gussets, PVC coated after fabrication. Platforms shall connect to posts with self-leveling fastening system, with two attachment points per corner, one of those being an open ended slot for easy assembly. Platform fasteners shall attach to threaded inserts which are CNC precision factory installed into the posts. Boards are a one piece solid, non-hollow foamed recycled HDPE (ReHDPE).
3. 90 Degree Platform shall be one piece all welded construction consisting of 12 GA HRPO steel shell and gussets, PVC coated after fabrication. Platforms shall connect to posts with self-leveling fastening system, with two attachment points per corner, one of those being an open ended slot for easy assembly. Platform fasteners shall attach to threaded inserts which are CNC precision factory installed into the posts. Barriers shall be one piece all welded construction consisting of 1.315" OD x 12 GA & 1.029:OD x 14 GA galvanized steel tubing, and 10 GA galvanized steel plate. Finished with a bake on powder coating.

C. Fasteners

1. Button head cap screws and socket head cap screws shall be 302HQ corrosion resistant, passivated, stainless steel, tamper resistant, and pre-treated with a locking/sealing adhesive.
2. Other stainless steel hardware shall be 302HQ corrosion resistant stainless steel.
3. Non stainless steel hardware shall be zinc plated grade 5 steel.
4. Threaded Post Nut Inserts shall be a corrosion resistant threaded insert crimped into post. Inserts shall be precision CNC located and factory installed for all attachment points.

- D. Rotationally Molded Plastic Parts shall be manufactured from color compounded, linear, low-density polyethylene with an average of .250" wall thickness and textured non-sliding surfaces. Plastic parts shall be UV stabilized to UV-12 minimum and shall have

a density of 0.935 per ASTM D-1505. Plastic parts shall have a tensile strength at yield no less than 2500 psi with flexural modulus of 87,200 psi. Rotationally Molded parts shall comply with ASTM-D-790 (Flex Modulus), ASTM –D-638 (Tensile Strength), ASTM –D-648 (Heat Deflection Temperature), ARM-STD (Low Temperature Impact) and rated UL 94.

- E. HDPE plastic panel parts shall be precision cut from a single solid sheet of either .50” or .75” thick UV-stabilized extruded high-density polyethylene with colors molded in, with a durable matte finish. The material will have a density of 59.6 lbs./cu.ft. and a tensile strength of 4000 psi. All edges shall be rounded or chamfered for safe play.
- F. Posts, steel shall be cold-formed steel tubing with a yield test of at least 50,000 psi and a tensile strength of at least 55,000 psi. Tube members shall comply with ASTM A-135 and ASTM A-500 Grade A and shall be tested according to ASTM E-8.
 - 1. Tubing Exteriors shall be triple coated for maximum exterior protection: galvanized, then coated with a chromate conversion coating and finished with a baked-on powder-coat.
 - 2. Tubing interiors shall be coated with a corrosion resistant zinc-rich coating.
 - 3. Tubing and cap finished with a baked on powder coating.
 - 4. Standard posts shall be an assembly consisting of the galvanized steel tubing with a cast aluminum cap factory installed in the post with 1/8” x 15/32” stainless steel pinned aluminum drive rivets.

2.02 Descriptions of Coatings

- A. PVC Coating (Poly-Vinyl Chloride): Prior to coating, each part shall be chemically washed submerged in a heat-activated primer and dried. After drying, each part shall be pre-heated to a temperature no less than 350 degrees F and immersed in liquid PVC. Play/usage surfaces shall have coating thickness of .085-.150 in. Park and site surfaces (i.e. benches, picnic tables) shall have coating thickness of .050-.080 in. PVC shall comply with California Assembly Bill #1108 by having a concentration that does not exceed 0.1% of the following phthalates; DINP, DIDP, DnOP, DEHP, or BBP. This formulation is also free of heavy metals such as Lead and Cadmium. The PVC shall have:
 - 1. Tensile strength of no less than 1830 psi per ASTM 412.
 - 2. Elongation of no less than 350% per ASTM 412.
 - 3. Tear strength of no less than 250 lb./in. per ASTM 624.
 - 4. Hardness of 75+/- 3 (Durometer, Shore A) per ASTM 2240.
 - 5. UV stabilizer shall be added to PVC to withstand one year in QUV panel tester without any significant color drift.
 - 6. Burn Rate will meet or exceed Federal Safety Standard MVSS 302. This is the same as UL 94 HB rating.

- B. Standard/Super Durable Powder Coating: Prior to powder coating, all parts shall be cleaned, and pretreated with a non-phosphate and non-chromic process. A polyester/TGIC powder coating with superior color-, gloss-, and UV-stabilizing qualities shall be 2.0 mils minimum and shall be cured in an oven at temperatures no less than 356 degrees F and no more than 392 degrees F. The powder-coat shall have the following properties:
1. Adhesion: No less than 5B [the edges of the cuts are completely smooth; none of the squares of the lattice is detached.] (cross hatch/tape adhesion test per ASTM D3359 Method B).
 2. Hardness: No less than 2H (pencil hardness test per ASTM B3363).
 3. Resistance to Impact: Cracking at the perimeter of the concave area, but no cracking pick off from 80 in/lb. director or reverse impact (ASTM D2794).
 4. Resistance to Bending: No visible cracking (1/8" bending test per ASTM 522).
 5. Resistance to Salt Spray: No more than 1/32" undercutting and no blistering in 500 hours (salt spray test per ASTM B117).
 6. Resistance to Humidity: No more than 1/32" undercutting and no blistering in 500 hours (humidity test per ASTM D2247).
 7. Degree of Gloss: No less than 80% reflected (specular gloss test at 60 degree per ASTM D523).

2.03 Barriers & Enclosures

- A. Center Mount Enclosure shall be one piece of welded construction consisting of 3 1/2" OD X 11 GA, 1.315" OD X 12 GA galvanized steel tubing and 10 GA galvanized sheet. Finished with a baked on powder coating.
- B. Enclosure on structures for children 2-5 years old shall be 3/4" co-extruded H.D.P.E.
- C. Enclosures and Stanchions shall be one piece all welded construction consisting of 1.315" OD x 14 GA, 1.315" OD x 12 GA, and 1.029" OD x 14 GA galvanized steel tubing, and HDPE threaded inserts. Finished with a baked-on powder coating.
- D. Enclosure, Offset shall be one piece of welded construction consisting of 1.315" OD x 14 GA and 1.029" OD x 14 GA galvanized steel tubing, and HDPE threaded inserts. Finished with a baked-on powder coating.
- E. Internal Barrier shall consist of four separate parts each being all welded construction consisting of 1.660" OD x 12 GA and 1.315" OD x 14 GA galvanized steel tube, and 10 GA galvanized steel plate finished with a baked-on powder coating
- F. Pipe Walls shall be one piece, all welded construction consisting of 1.315" OD x 14 GA and 1.029" OD x 14 GA galvanized steel tubing, and 1 1/2" x 1/2" x 10 GA formed galvanized steel plate. Finished with a baked-on powder coating.

G. Platform-to-Platform Bars shall be 1.315" x 12 GA galvanized steel tubing with a baked on powder coating.

H. Slotted Barriers shall be made of 3/4" co-extruded H.D.P.E.

2.04 Brackets

A. Panel Brackets for accessible reach panels, upper board panels and battlement panels shall be one piece all welded construction consisting of 7 GA stainless steel formed plate and 10 GA galvanized sheet steel finished with a baked on powder coating.

B. Flat Panel Mounting Brackets shall be one piece all welded construction consisting of 8 GA stainless steel formed plate and 3/16" stainless steel plate. Finished with a baked on powder coating.

C. Mounting Brackets shall be one piece all welded construction consisting of 3/16" stainless steel plate and 1.029" OD x 14 GA or 1.315" OD x 12 GA galvanized steel tubing. Finished with a baked on powder coating.

D. Mounting Tubes shall be one piece all welded construction consisting of 1.315" OD x 14 GA galvanized steel tubing and a stainless steel threaded insert. Finished with a baked on powder coating.

E. Panel Mounting Tubes shall be one piece all welded construction consisting of 3/16" stainless steel plates and 1.315" OD x 12 GA galvanized steel tubing. Finished with a baked on powder coating.

F. Slide Entrance Brackets shall be 14 GA galvanized steel plate finished with a baked on powder coating.

G. Steering Wheel Mount Bracket shall be one piece all welded construction consisting of a 3/16" stainless steel plate, 1.315" OD x 14 GA galvanized tubing and a stainless steel threaded insert. Finished with a baked on powder coating.

2.05 24" Transition Stair W/Barriers

A. Casting, Straight Bracket: A356-T6 Aluminum, Heat-Treated. Finished with baked on powder coating.

B. Top Stair Barrier: One piece welded construction consisting of 1.315" OD x 12 GA & 1.029" OD x 12 GA galvanized steel tubing and 10 GA galvanized steel plate. Finished with a baked on powder coating.

- C. 24" Transition Barrier: One piece welded construction consisting of 1.315" OD x 12 GA & 1.029" OD x 12 GA galvanized steel tubing, malleable iron plug and 10 GA galvanized steel plate. Finished with a baked on powder coating.
- D. Bottom Stair Transition B: One piece welded construction consisting of 1.315" OD x 12 GA & 1.029" OD x 12 GA galvanized steel tubing and 10 GA galvanized steel plate. Finished with a baked on powder coating.
- E. 24" Accessible Stairs: One piece welded construction consisting of 12 GA HRPO steel surfaces, sides, and gussets. PVC coated after fabrications.

2.06 40" Transition Stair w/Barriers

- A. Casting, Straight Bracket: A356-T6 Aluminum, Heat-Treated. Finished with baked on powder coating.
- B. Top Stair Barrier: One piece all welded construction consisting of 1.315" OD x 12 GA & 1.029" OD x 12 GA galvanized steel tubing and 10 GA galvanized steel plate. Finished with a baked on powder coating.
- C. 40" Transition Barrier: One piece all welded construction consisting of 1.315" OD x 12 GA & 1.029" OD x 12 GA galvanized steel tubing, malleable iron plug and 10 GA galvanized steel plate. Finished with a baked on powder coating.
- D. Bottom Stair Transition B: One piece all welded construction consisting of 1.315" OD x 12 GA & 1.029" OD x 12 GA galvanized steel tubing and 10 GA galvanized steel plate. Finished with a baked on powder coating.
- E. 40" Accessible Stairs: One piece all welded construction consisting of 12 GA HRPO steel surfaces, sides, and gussets. PVC coated after fabrication.

2.07 Swing Units

- A. Galvanized 4/0 Chain 86 3: 3/8" diameter, 4/0 straight coil chain.
- B. Molded Rubber Seat: Molded rubber, reinforced with a steel insert. Riveted galvanized attachment hardware.
- C. Spacer 1.13 OD x .25: 1/4" Nylatron GS.
- D. Loctite: Thread Locker; CAUTION: May irritate eyes, skin and respiratory system. Contains: polyglycol dimethacrylate, polyglycol oleate propylene glycol, titanium dioxide, and cumene hydroperoxide.
- E. Clevis Shackle W/Bolt: 5/16" Shackle with a 3/8" x 1 1/2" bolt.

2.08 Spring Toys

- A. Spring Casting: Grade 32510, malleable iron. Zinc-Clearchromate plating.
- B. Bottom Plate 9 7/8 SQ: 1/4" HR steel plate finished with a baked on powder coating.
- C. Burke-A-Saurus Panel RH: 1/2" co-extruded H.D.P.E.
- D. Burke-A-Saurus Panel LH: 1/2" co-extruded H.D.P.E.
- E. Seat: 3/4" extruded HDPE
- F. Back: 3/4" extruded HDPE.

- G. Rubber Spring Cover: EPDM Elastomer compound flexible tube.
- H. Coil Spring: One piece all welded construction consisting of 13/16" OD spring steel and 3/4" diameter HR steel round finished with a black baked on powder coating.
- F. Frame: One piece all welded construction consisting of 1.029" OD x 14 GA 1/4" HR steel plate, 3/8" stainless steel T-nuts, 3/8" zinc plated steel flange nuts. Finished with a baked on powder coating.
- G. Tube Assy: One piece all welded construction consisting of 1.029" OD x 14 GA galvanized tubing and 3/8" stainless steel T-nuts. Finished with a baked on powder coating.

2.09 Spinner

- A. Tube, 1.900 x 2 7/16": 1.900" OD x 11 GA galvanized steel tube.
- B. Thrust Bearing 1 9/16 ID: Heavy duty, precision thrust, and sealed ball bearing.
- C. Cover, Spinner: 3/4" extruded HDPE
- D. 1/4" x 45 degree Grease Zerk: Zinc plated steel
- E. Beam, Arched, Spinner: One piece all welded construction consisting of formed 2 3/8" OD x 10 GA & 1.315" OD x 12 GA galvanized steel tubing , and 7 GA stainless steel sheet. Finished with a baked on powder coating.
- F. Spinner, Middle Section: One piece all welded construction consisting of formed 1.660" OD x 12 GA & 1.315" OD x 12 GA galvanized steel tubing, 3 1/2" OD x 3/8" wall DOM steel tubing and 1/4" HR steel plate. Finished with a baked on powder coating.
- G. Bearing, 2 Bolt Flange, N: PBT Thermoplastic housing, zinc coated insert, sealed bearing.
- H. Spinner Anchor AS: Assembly consisting of an anchor weldment, rubber boot, malleable iron universal joint, bearings, stainless steel set screws and CF steel shaft.

2.10 Plastic Slides

- A. Casting, Straight Bracket: A356-T6 Aluminum, Heat-treated. Finished with baked on powder coating.
- B. Casting, Side Filler, Lon: A56 Aluminum. Finished with baked on powder coating.
- C. Slide Hood, Narrow Slide: 1/4" thick, linear, low density, rotationally molded, UV stabilized polyethylene with double wall construction, molded in 3/8" T-nut inserts and a textured surface.
- D. Entrance Slide Section: 1/4" thick, linear, low density, rotationally molded, UV stabilized polyethylene with double wall construction, molded in 3/8" T-nut inserts and a textured surface.
- E. Exit Slide Section: 1/4" thick, linear, low density, rotationally molded, UV stabilized polyethylene with double wall construction, molded in 3/8" T-nut inserts and a textured surface.

- F. Straight Slide Section: 1/4" thick, linear, low density, rotationally molded, UV stabilized polyethylene with double wall construction, molded in 3/8" T-nut inserts and a textured surface.
- G. 45 Deg Left Slide Section: 1/4" thick, linear, low density, rotationally molded, UV stabilized polyethylene with double wall construction, molded in 3/8" T-nut inserts and a textured surface.
- H. Support, Slide Exit: One piece all welded construction consisting of 2 3/8" OD x 12 GA galvanized steel tubing and 8 GA galvanized sheet steel. Finished with baked on powder coating.
- I. Mount Tube: One piece all welded construction consisting of a 1.315" OD x .083" wall galvanized tube and a 12L14 steel threaded insert. Finished with a baked on powder coat.
- J. Slide Barrier Left: One piece all welded construction consisting of a 1.315" OD x 12 GA galvanized steel tubing, 10 GA galvanized sheet steel, and HDPE threaded inserts. Finished with a baked on powder coat.
- K. Slide Barrier Right: One piece all welded construction consisting of a 1.315" OD x 12 GA galvanized steel tubing, 10 GA galvanized sheet steel, and HDPE threaded inserts. Finished with a baked on powder coat
- L. Slide Support 4J: 8 gage formed plate welded to 1.660" OD tubing. Finished with baked on powder coat.
- M. Slide Support 2J: 8 gage formed plate welded to 1.660" OD tubing. Finished with baked on powder coat.

2.11 Rope Climber

- A. Anchor Tube; 1.315" OD x 12 GA galvanized steel tubing.
- B. Rope Assembly, Wild Web: Rope shall be made of 6 polypropylene cords with each cord containing 8 galvanized steel strands wrapped around 3 polypropylene cords, covered with polypropylene multi-fibers. Aluminum end connectors and ferrules with stainless steel screws.
- C. Bracket, Rope Connection: One piece all welded construction consisting of formed 3/16": stainless steel plate and an 8 GA galvanized steel sheet. Finished with a baked on powder coating.
- D. Arched Beam: One piece all welded construction consisting of formed 2 3/8" OD x 10 GA galvanized steel tubing, 7 GA stainless steel sheet and 8 GA galvanized sheet steel plate. Finished with baked on powder coating.

END OF SECTION

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 manufactures 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 manufacture prior in writing prior to final acceptance. All manufacture 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 manufactures 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

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 on 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 0140

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
Trapezodial 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	
Perforations per foot	77
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

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

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 slopped 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

Work schedule

Victoria Playground Renovation

2016

	March					April				May				June				
	1	2	3	4	5	1	2	3	4	1	2	3	4	1	2	3	4	5
Board award supply and install playground				X														
Board award install fall surface				X														
Construction safety fence										X	X	X	X	X	X	X		
Manufacture play equipment					X	X	X	X	X									
Install playground equipment										X	X	X						
Install Fall surface														X	X	X		