
Project Manual

Deerpath Park Dragon Play Area



Issued for Bid
August 29, 2017

Bids are due on
September 13, 2017
at 10:00 A.M.

Bids will be opened and read aloud at 10:00 A.M. at the
Vernon Hills Park District
635 North Aspen Drive, Vernon Hills, IL 60061

GreenbergFarrow

21 S. Evergreen Suite 200, Arlington Heights, IL 60005

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DEERPATH PARK – DRAGON PLAY AREA, VERNON HILLS PARK DISTRICT
20170773.0

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SECTION A – INVITATION FOR BID

ADVERTISEMENT FOR BID

Project Name: Deerpath Park – Dragon Play Area Improvements

Notice is hereby given to potential Bidders that the Vernon Hills Park District (the “District,” “Park District” or “Owner”) will receive sealed bids for the above referenced Project until **10:00 am on September 13, 2017**, at the Vernon Hills Park District Administrative Offices, 635 North Aspen Drive, Vernon Hills, Illinois 60061-2999, at which time the bid proposals will be publicly opened and read aloud.

Each bid must be placed in a sealed opaque envelope and shall be clearly marked "**Sealed Bid – Deerpath Park - Dragon Play Area Improvements**" and addressed and delivered to the Vernon Hills Park District, Attention: Jeff Fougousse, 635 North Aspen Drive, Vernon Hills, Illinois 60061.

The work consists of demolition/removals, site grading/excavation, storm drainage, concrete curbs, poured-in-place surfacing, playground installation and landscaping.

Bid Documents may be obtained from the Vernon Hills Park District website: **www.vhparkdistrict.org**. For more information, contact Lori Vierow, GreenbergFarrow, 847-788-0913, lvierow@greenbergfarrow.com.

A **mandatory** pre-bid meeting will be held at **Deerpath Park – Kids Castle Area , Vernon Hills, Illinois on August 31st at 1:00PM**. This meeting will be used to review the Specifications and give any Bidders the opportunity to discuss any concerns with the Owner.

The District reserves the right to waive all technicalities, to accept or reject any or all bids, to accept only portions of a bid and reject the remainder without disclosure for any reason. Failure to make such a disclosure will not result in accrual of any right, claim or cause of action by any Bidder against the District. Owner will award the Contract to the lowest most responsible and responsive Bidder, as determined by Owner. In considering the Bidder’s responsibility, the Owner may evaluate, among other factors, the ability of the Bidder to provide experienced labor sufficient in numbers to timely and properly complete the Work, the financial capability of the Bidder, and the performance of the Bidder on other projects.

Bids shall not include federal excise tax or state sales tax for materials to be incorporated in, or totally consumed in the prosecution of the Work. A tax exemption certificate will be furnished by the Park District at the request of the Bidder. The Park District’s tax exemption number shall only be used by the successful Bidder for the Work of this Project only. After the bid opening, no bid may be withdrawn or canceled for a period of (60) calendar days.

The Work of this Project is subject to the Illinois *Prevailing Wage Act*, 820 ILCS 130/0.01 *et seq.* A prevailing wage determination has been made by the Park District, which is the same as that determined by the Illinois Department of Labor for public works projects in Lake County. The Contract entered into for the Work will be drawn in compliance with said law and proposals should be prepared accordingly and provide for payment of all laborers, workmen, and mechanics needed to perform the Work at no less than the prevailing rate of wages (including the prevailing rate for legal holiday and overtime work as applicable) for each craft, type of worker, or mechanic.

All bids must be accompanied by cashier’s check or bid bond payable to the order of the Vernon Hills Park District for ten percent (10%) of the amount of the bid as provided in the Instructions to Bidders. No proposals or bids will be considered unless accompanied by such bond or check.

The Contractor(s) selected will also be required to comply with all applicable federal, state and local laws, rules, regulations and executive orders, including but not limited to those pertaining to equal employment opportunity.

Dated at the Vernon Hills Park District, Vernon Hills,
Illinois, 7/25, 2017

by 
Jeff Fougrouse, Executive Director

SECTION B – INSTRUCTIONS TO BIDDERS

INSTRUCTIONS TO BIDDERS

DATE: August 29, 2017

BID REQUEST: Deerpath Park – Dragon Play Area Improvements (the “Project”).

Sealed bids will be accepted until **September 13, 2017 at 10:00am** and immediately thereafter publicly opened and read aloud at the Vernon Hills Park District Administrative Offices, 635 North Aspen Drive, Vernon Hills, IL 60061-29999. Bids arriving after this time will be rejected and will be returned unopened, including mailed bids regardless of when post marked. All Bidders are welcome to attend the bid opening. After bid opening, bids will be submitted for approval to the Vernon Hills Park District Board of Park Commissioners at a regularly scheduled meeting.

A **mandatory** pre-bid meeting will be held at **Deerpath Park, Kids Castle Area , Vernon Hills, Illinois on August 31 at 1:00 PM.** This meeting will be used to review the Specifications and give any Bidders the opportunity to discuss any concerns with the Owner.

1. Preparation and Submission of Bid Proposal

It is the sole responsibility of the Bidder to see that his bid is received in proper time. **No faxed or e-mail bid or modification of a bid will be considered.** The Park District is not responsible for the premature opening of bids not marked as required. Any bid opened prematurely due to the failure of the Bidder to mark the envelope in accordance with these Bid Documents will be considered non-responsive. Bidders' prices are to include the delivery of all materials; including; equipment, supplies, tools, scaffolding, transportation, insurances, bonds, warranties, and all other items and 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. Bids shall not include federal excise tax or state sales tax for materials to be incorporated in, or totally consumed in the prosecution of, the Work. An exemption certificate will be furnished by the Park District upon request of the Bidder.

Bidder must acknowledge all Addenda received in the spaces provided on the Contractor Bid Form. By submitting a bid, Bidder indicates that all considerations issued by Addendum are incorporated in the bid.

Bidders shall return all Bid Documents, including Drawings and Specifications with the bid, and **no sheets shall be detached from any part of the Bid Documents.**

Attached to the Bid Form will be one or more certifications regarding the Bidder's compliance with applicable laws. **Failure of a Bidder to complete/submit a required certification shall be the basis for immediate rejection of that Bidder's bid.** The certification of the successful Bidder shall become a part of the Contract with the Park District.

The Bidder shall submit its prices on the attached Bid Proposal Form. The Bid Proposal Form shall be executed properly and all writing, including all signatures, shall be with black

ink. Failure to use the Bid Proposal Form provided could result in rejection of the bid. Do not detach any portion of this document; invalidation of the bid could result.

The Bidder shall specify in figures, in the places provided, a price for each of the separate items called for in the Bid Form.

2. Requirement of Bidders

Bidders must be able to demonstrate that they: 1) have experience in performing and have successfully performed and are still actively engaged in performing work similar in kind and scope to the Work of the Project; and 2) are able to show that they have adequate laborers and materials to successfully complete the Work as indicated in the Bid Documents and within the time required by the Bid Documents. The Contractor shall not have been debarred or determined ineligible for public contracts by any governmental agency.

The following information must be attached to the bid proposal. Failure to do so may result in disqualification of the Bidder.

On a separate sheet, list all construction projects your organization has in progress, giving the name of the project, project description, project address, owner and telephone number, architect and telephone number, contract amount, percent complete, and scheduled completion date.

On the Project References form provided herein, list at least five (5) construction projects your organization has completed in the past two (2) years, which are comparable in scope, giving the name of the project and brief project description, owner and telephone number, project cost and date of completion.

On a separate sheet, list all administrative proceedings and litigation filed by or against Bidder in the past five (5) years, including the name and case number, name/jurisdiction of the court or administrative agency, and a summary of each claim/case, including current status and if no longer pending, the disposition. The foregoing includes but is not limited to information regarding any proceedings and actions taken by any governmental agency to debar or disqualify the Bidder from bidding on public contracts, including the name of the agency initiating the proceeding/action, the nature of the proceeding/action, the claimed basis for the proceeding/action and the current status or disposition of the proceeding/action.

On a separate sheet, indicate all instances in which Bidder has been rejected for not being a responsible bidder, giving the name of the project, project description, project address, owner and telephone number, architect and telephone number, contract amount, and an explanation of the circumstances surrounding the rejection.

On a separate sheet, provide a list of all contracts to which you were a party and with respect to which you were declared to be in breach of one or more provisions, giving a the type of contract, the project location where applicable, the names and addresses of the parties to the contract, the name of the party declaring the breach, the nature of the claimed breach and current status or resolution of the claim. If a construction contract, also provide the name, address and telephone number of the architect and, if applicable also the construction manager or owner's representative.

Other required submittals include: Bid Proposal; Contractor's Compliance and Certification Attachment/ Substance Abuse Prevention Program Certification. **Failure of a Bidder to complete/submit these documents shall be the basis for immediate rejection of that Bidder's bid.**

3. Examination of Site, Drawings, Specifications

Each Bidder shall visit the site(s) of the proposed Work and fully acquaint himself with conditions, as they exist, and shall undertake such additional inquiry and investigation as he shall deem necessary so that he may fully understand the requirements, facilities, possible difficulties and restrictions attending the execution of the Work under the Contract. Bidder shall thoroughly examine and be familiar with all of the Bid Documents including but not limited to the Drawings and the written Specifications. Any conflicts or discrepancies found between or among Bid Documents, including but not limited to the Drawings and written Specifications, and the site conditions, or any errors, omissions or ambiguities in the Drawings or written Specifications shall be immediately reported to the Park District and written clarification requested prior to submission of a bid.

The failure or omission of any Bidder to obtain, receive or examine any form, instrument, or information or to visit the Project site(s), and become knowledgeable with respect to conditions there existing, or to seek needed clarification shall in no way relieve any Bidder from any obligations with respect to his/her bid. By submitting a bid, the Bidder agrees, represents and warrants that he has undertaken such investigation as he deemed necessary, has examined the site(s) and the Bid Documents, has obtained all needed clarifications and where the Bid Documents indicate in any part of the Work, that a given result be produced, that the Bid Documents are adequate and the required result can be produced as indicated in the Specifications and Drawing(s). Once the award has been made, failure to have undertaken and completed the foregoing tasks shall not be cause to alter the original Contract or to request additional compensation.

4. Acceptance or Rejection of Bids

The Park District may accept the bid of, and award the Contract for the Work to, the lowest responsive and responsible Bidder as determined by and in the sole discretion of the Park District.

The Owner reserves the right to (1) reject all bids; (2) reject only certain bids which are non-conforming or non-responsive to the bid requirements; (3) accept only a portion, part or specific items of Work of all and reject others, as the Owner shall in its sole discretion determine to be in its best interest; and/or (4) award the Contract to the responsible Bidder submitting the lowest bid responsive to the bidding requirements. No bid will be accepted from or Contract awarded to any person, firm or corporation that is in arrears or is in default to the Park District upon any debt or contract, or that is a defaulter, as surety or otherwise, upon any obligation to said Park District or that has failed to perform faithfully any previous contract with the Park District.

In the event of a rejection of a portion, part, or certain items of Work of all bids, the bid of each Bidder shall automatically be deemed reduced by the amount of such rejected part or item at the unit price or other cost designated therefore by that Bidder on its submitted Contractor Bid Proposal Form. The successful Bidder so selected may not refuse to enter into a Contract with the Owner on the basis that the Owner awarded a Contract for less

than all portions or items of the Work specified in the Bid Documents. The Vernon Hills Park District Board of Park Commissioners reserves the right to waive any technicalities or irregularities, and to disregard any informality on the bids and bidding, when in its opinion the best interest of the Park District will be served by such actions and in accordance with applicable law.

5. Surety

All bids must be accompanied by a bid bond or bank cashier's check payable to the Vernon Hills Park District for ten percent (10 %) of the amount of the bid and drawn on a responsive and responsible bank doing business in the United States. All bids not accompanied by a bid security, when required, will be rejected.

The bid security of all except the three (3) lowest responsive and responsible Bidders will be returned after the decision to accept or reject bids by the Vernon Hills Park District Board of Park Commissioners. The bid security of the successful Bidder will be returned after acceptance by the Park District of an acceptable Performance Bond, Labor and Materials/Payment Bond and a certificate of insurance naming the Vernon Hills Park District as the certificate holder and as additional insured, and the successful Bidder has executed and returned to the Park District the Contract for the Work presented by the Park District.

Prior to beginning Work, the successful Bidder shall furnish a Performance Bond, and Labor and Materials/Payment Bond in the amount of 110% of the Contract Sum, using a form similar to the AIA-A312-2010 form, or its current equivalent, or one acceptable to Owner, cosigned by a surety company licensed to conduct business in the State of Illinois and with at least an "A" rating and a financial rating of at least "X" in the latest edition of the Best Insurance Guide. Said bond shall guarantee the faithful performance of the Work in accordance with the Contract, the payment of all indebtedness incurred for labor and materials, and guarantee correction of Work. The cost of each bond shall be included in the Contract Sum. The Bidder and all Subcontractors shall name the Park District as an obligee on all bonds. Said bonds shall meet the requirements of the Illinois Public Construction Bond Act, 30 ILCS 550/0.01 *et seq.* and any further amendments thereto. Bidder shall include in its Performance Bond and Labor and Material Payment Bond such language as shall guarantee the faithful performance of the Prevailing Wage Act as required in these Bid Documents.

The Performance Bond and Labor and Material Payment Bond will become a part of the Contract. The failure of the successful Bidder to enter into the Contract and supply the required bonds and evidence of insurance within ten (10) days after the Contract is presented for signature, or within such extended period as the Park District may grant, shall constitute a default, and the Park District may either award the Contract to the next responsible Bidder, or re-advertise for bids. In the event of a default, the Owner need not return the defaulting Bidder's bid surety and may charge against the defaulting Bidder for the full difference between the amount for 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 defaulting Bidder's bid surety.

6. Withdrawal of Bid

Bidders may withdraw or cancel their bids at any time prior to the advertised bid opening time by signing and submitting a request for said withdrawal. After the bid opening time, no bid shall be withdrawn or canceled for a period of sixty (60) calendar days.

7. Award, Acceptance and Contract

Owner will award the Contract to the lowest most responsible and responsive Bidder, as determined by Owner. In considering the Bidder's responsibility, the Owner may evaluate, among other factors, the ability of the Bidder to provide experienced labor sufficient in numbers to timely and properly complete the services, conformity with the Specifications, serviceability, quality, and the financial capability of the Bidder, and the performance of the Bidder on other projects.

The Owner shall have the right to accept Alternates in any order or combination, unless otherwise specifically provided in the Bid Documents, and to determine the low Bidder on the basis of the sum of the Base Bid and Alternates accepted.

Bids will be awarded to one Bidder for the entire Project or to any series of Bidders for an appropriate proportion of the Project. If specified in the Bid Form, awards will be based upon the submitted unit prices.

The acceptance of a bid will be by a Notice of Award, signed by a duly authorized representative of the Park District; no other act by the Park District shall constitute the acceptance of a bid. The acceptance of a bid by the Park District shall bind the successful Bidder to execute and perform the Work of the Contract. The successful Bidder to whom the Contract is awarded by the Park District shall sign and deliver to the Park District for execution by the Park District all required copies of the Contract, along with all required insurance and surety documents within ten (10) days after presentation to him of the Contract for signature. In case the Bidder shall fail or neglect to do so, he will be considered as having abandoned the Contract, and as being in default to the Owner. The Owner may thereupon re-advertise or otherwise award said Contract and forfeits the Bid Security.

The Invitation to Bid, Instructions to Bidders, General Conditions, Supplementary and/or Special Conditions, if any, Drawings, Specifications, Contractor Bid Proposal Form, Addenda, if any, Contractors Compliance and Certifications Attachment, and Substance Abuse Certification and the Prevailing Wage Determination and Supersedes Notice comprise the Bid Documents. The Bid Documents, together with the Standard /Form of Agreement between Owner and Contractor AIA Document A101-2007, as modified by the Park District and included in these Bid Documents, and the Performance Bond and Labor Material Payment Bond and proof of insurance comprise the Contract Documents.

8. Interpretation of the Contract Documents

The Park District shall in all cases determine the amount or quantity of the several kinds of Work which are to be paid for under this Contract, and shall decide all questions which may arise relative to the execution of the Contract on the part of the Contractor, and all estimates and decisions shall be final and conclusive. The Park District shall have the right to make alterations in the lines, grades, plans, forms, or dimensions of the Work

herein contemplated either before or after the commencement of the Work. If such alterations diminish the quantity of the Work to be done, they shall not constitute a claim for damage or for anticipated profits on the work dispensed with, or if they increase the amount of Work, such increase shall be paid according to the quantity actually done and at the price or prices stipulated for such Work in the Contract. The Park District reserves the right to approve, an equal to or superior to product or equipment required under the Specifications, or to reject as not being and equal to or superior to the product or equipment required under the Specifications. If the Bidder is in doubt as to the interpretation of any part of the Bid Documents, or finds errors, discrepancies or omissions from any part of the Contract Documents, he must submit a written request for interpretation thereof not later than three (3) days prior to opening of bids to the Park District. Address all communications to Lori Vierow at GreenbergFarrow via email at **lvierow@greenbergfarrow.com**. If an error or omission is discovered in the Bid Documents after the bid opening, the Park District reserves the right: i) to determine whether to require the submission of new bids; or ii) if the error or omission is of such a nature that it was reasonably discoverable upon a careful review of the Bid Documents, to award the Contract to the lowest responsive and responsible Bidder as determined by the Park District and to require that Contractor to perform the Work in accordance with an issued correction by the Park District and/or Architect and for the amount bid by the Contractor. Such decisions are final and not subject to recourse. Errors and omissions made by the Bidder cannot be corrected after the bid opening.

9. Addenda

Any interpretation, correction to, or addition to the Bid Documents will be made by written Addendum and will be delivered by mail or fax to each prime Bidder of record. The written Addenda constitute the only interpretations of the Bid Documents; the Park District accepts no responsibility for any other claimed interpretations or communications.

It is the responsibility of each Bidder to verify that he has received all Addenda prior to submitting a bid. It is also the responsibility of each Bidder to verify that all subcontractors and material suppliers whose prices are incorporated in the Bidder's bid are familiar with the Bid Documents in their entirety, including all Addenda issued up to the time of bid opening.

In the event a conflict or omission is discovered in the Bid Documents after the issuing of the last Addendum such that an interpretation cannot be issued by the Park District prior to bidding, the Bidder is directed to estimate on and provide the quantity and quality of material and labor consistent with the overall represented and indicated Work so as to provide all materials, equipment, labor, and services necessary for the completion of the Work in accordance with the Bid Documents.

10. Substitutions during Bidding

Unless otherwise indicated, the use of brand names in the Specifications is used for the purpose of establishing a grade or quality. Bidders proposing to use an alternate that is equal to or superior to in every respect to that required by the Specifications must request approval in writing to the Park District or Landscape Architect at least seven (7) business days prior to the bid opening and mark the item as 'or approved equal'.

Additionally, Bidders requesting approval for use of an alternate must provide certification by the manufacturer that the substitute proposed is equal to or superior in every respect to that required by the Contract Documents, and that its in-place performance will be equal to or superior to the product or equipment specified in the application indicated. The Bidder, in submitting the request for substitution, waives the right to additional payment or an extension of Contract Time because of the failure of the substitute to perform as represented in the request for substitution.

The Park District may request additional information or documentation necessary for evaluation of the request for substitution. The Park District will notify all Bidders of acceptance of the proposed substitute by means of an Addendum to the Bid Documents. Park District's approval of a substitute during bidding does not relieve the Contractor of the responsibility to submit required shop drawings and to comply with all other requirements of the Contract Documents, including but not limited to proper performance of all components of the Work and suitability for the uses specified.

Bids proposing alternates not previously approved by the Park District will be considered non-responsive and rejected. The Park District reserves the right to determine whether a substituted selection, in its judgment, is equal to or better quality and therefore an acceptable alternate. Such decisions are final and not subject to recourse.

INSTRUCTIONS TO BIDDERS – ADDITIONAL INFORMATION
DEERPATH PARK – DRAGON PLAY AREA, VERNON HILLS PARK DISTRICT
20170773.0

PART 1 GENERAL

1.1 ADDENDA

Written Addenda, if issued, will be mailed to prospective bidders (at the respective addresses provided for such purpose) not later than three (3) days prior to the date fixed for opening of Proposals. Failure of a bidder to receive such Addenda shall not relieve the bidder from any obligation under his Proposal as submitted. All Addenda so issued shall be submitted with the Proposal and shall become part of the Contract Documents.

1.2 OWNER MAY OMIT WORK

The Owner reserves the right to omit certain items in their entirety and other items in part as set forth in the bid.

1.3 REDUCTION IN SCOPE OF WORK

The Owner reserves the right to decrease the scope of the work to be done under this contract and to omit any work in order to bring the cost within available funds. To this end, the Owner reserves the right to reduce the quantity of any items or omit all of any items as set forth in the bid, either prior to executing the contract or at any time during the progress of the work. The Owner further reserves the right, at any time during the progress of the work to restore all or part of any items previously omitted or reduced. Exercise by the Owner of the above rights shall not constitute any ground or basis of claim for damages or for anticipated profits on the work omitted.

GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

The American Institute of Architects "AIA Document A201-2007 General Conditions of the Contract for Construction," 2007 Edition, as modified by Owner, and included in this Project Manual are the General Conditions.

SUPPLEMENTAL CONDITIONS

The "General Conditions of the Contract, AIA Document A201, 2007 Edition" (the "General Conditions"), as modified by Owner, are hereby amended to include the following:

I. Insurance and Indemnity Requirements

Contractor shall procure and maintain for the duration of the contract, insurance against claims for death, injuries to persons, or damages to property which may arise from or in connection with the performance of work hereunder by the Contractor, his agents, representatives, employees or subcontractors of the types and in the amounts listed below.

- A. Commercial General and Umbrella Liability Insurance.** Contractor shall maintain commercial general liability (CGL) and, if necessary, commercial umbrella insurance with a limit of not less than \$1,000,000 each occurrence. If such CGL insurance contains a general aggregate limit, it shall apply separately to this project/location. CGL insurance shall be written on Insurance Services Office (ISO) occurrence form CG 00 01, or a substitute form providing equivalent coverage, and shall cover liability arising from premises, operations, independent contractors, products-completed operations, personal injury and advertising injury, and liability assumed under an insured contract (including the tort liability of another assumed in a business contract). Owner, its elected and appointed officials, officers, employees and agents shall be included as an insured under the CGL, using ISO additional insured endorsement CG 20 10 or a substitute providing equivalent coverage, and under the commercial umbrella, if any. This insurance shall apply as primary insurance with respect to any other insurance or self-insurance afforded to Owner. There shall be no endorsement or modification of the CGL limiting the scope of coverage for liability arising from pollution, explosion, collapse, or underground property damage.
- B. Continuing Completed Operations Liability Insurance.** Contractor shall maintain commercial general liability (CGL) and, if necessary, commercial umbrella liability insurance with a limit of not less than \$1,000,000 each occurrence for at least three years following substantial completion of the work. Continuing CGL insurance shall be written on ISO occurrence form CG 00 01, or substitute form providing equivalent coverage, and shall, at minimum, cover liability arising from products-completed operations and liability assumed under an insured contract. Continuing CGL insurance shall have a products-completed operations aggregate of at least two times its each occurrence limit. Continuing commercial umbrella coverage, if any, shall include liability coverage for damage to the insured's completed work equivalent to that provided under ISO form CG 00 01.
- C. Business Auto and Umbrella Liability Insurance.** Contractor shall maintain business auto liability and, if necessary, commercial umbrella liability insurance with a limit of not less than \$1,000,000 each accident. Such insurance shall cover liability arising out of any auto including owned, hired and non-owned autos. Business auto insurance shall be written on Insurance Services Office (ISO) form CA 00 01, CA 00 05, CA 00 12, or a

substitute form providing equivalent liability coverage equivalent to that provided in the 1990 and later editions of CA 00 01.

D. Workers Compensation Insurance. Contractor shall maintain workers compensation as required by statute and employers liability insurance. The commercial umbrella and/or employers liability limits shall not be less than \$1,000,000 each accident for bodily injury by accident or \$1,000,000 each employee for bodily injury by disease. If Owner has not been included as an insured under the CGL using ISO additional insured endorsement CG 20 10 under the Commercial General and Umbrella Liability Insurance required in this Contract, the Contractor waives all rights against Owner and its officers, officials, employees, volunteers and agents for recovery of damages arising out of or incident to the Contractors work.

E. General Insurance Provisions.

1. Evidence of Insurance. Prior to beginning Work, Contractor shall furnish Owner with a certificate of insurance and applicable policy endorsements, executed by a duly authorized representative of each insurer, showing compliance with the insurance requirements set forth above. All certificates shall provide for 30 days written notice to Owner prior to the cancellation or material change of insurance referred to therein. Written notice to Owner shall be by certified mail, return receipt requested. Failure of Owner to demand such 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. Owner shall have the right, but not the obligation, of prohibiting Contractor or any subcontractor from entering the Project site until such certificates or other evidence that insurance has been placed in complete compliance with these requirements is received and approved by Owner. Failure to maintain the required insurance may result in termination of this Contract at Owner's option. With respect to insurance maintained after final payment in compliance with a requirement above, an additional certificate shall provide certified copies all insurance policies required above within 10 days of Owner's written request for said copies.

2. Acceptability of Insurers. For insurance companies which obtain a rating from A.M. Best, that rating should be no less than A VII using the most recent edition of the A.M. Bests Key Rating Guide. If the Bests rating is less than A VII or a Best's rating is not obtained, tile Owner has the right to reject insurance written by an insurer it deems unacceptable.

3. Cross-Liability Coverage. If Contractor's liability policies do not contain the standard ISO separation of insureds provision, or a substantially similar clause, they shall be endorsed to provide cross-liability coverage.

4. Deductibles and Self-Insured Retentions. Any deductibles or self-insured retentions must be declared to the Owner. At the option of the Owner, the Contractor may be asked to eliminate such deductibles or self-insured retentions as respects the Owner, its officers, officials, employees, volunteers and agents or required to procure a bond guaranteeing

payment of losses and other related costs including but not limited to investigations, claim administration and defense expenses.

5. Subcontractors. Contractor shall cause each subcontractor employed by Contractor to purchase and maintain insurance of the type specified above. When requested by the Owner, Contractor shall furnish copies of certificates of insurance evidencing coverage for each subcontractor.

F. Indemnification

To the fullest extent permitted by law, the Contractor shall waive all right of contribution and shall indemnify and hold harmless the Owner and its 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 paralegals 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 (i) is attributable to bodily injury, sickness, disease or death, or injury to or destruction of tangible property, other than the work itself, including the loss of use resulting therefrom and (ii) 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, regardless of whether or not it is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity which would otherwise exist as to any party or person described in this Paragraph. Contractor shall similarly protect, indemnify and hold and save harmless the Owner, its officers, officials, employees, 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 provision of the Contract.

BID PROPOSAL

Bidder is:

An Individual:

By: _____ (SEAL)

(Individual's Name)

Doing business as _____

Business Address: _____

Phone Number: _____

A Partnership:

By: _____ (SEAL)

(Firm Name)

(General Partner)

Business Address: _____

Phone Number: _____

A Corporation:

By: _____ (SEAL)

(Corporation Name)

(State of Incorporation)

By:

(Name of Person Authorized to Sign)

Title: _____

Attest _____

(Secretary)

(CORPORATE SEAL)

Business Address: _____

Phone Number: _____

By submission of its bid, the Bidder acknowledges, agrees, represents, declares and warrants:

1. That it has visited and examined the site, and is fully familiar with and has satisfied itself as to the site and the local and other conditions under which the Work is to be performed, including without limitation, (i) surface conditions of the site and subsurface conditions readily observable or ascertainable upon the exercise of reasonable diligence and all structures and obstructions thereon and thereunder, both natural and manmade; (ii) the nature, location, and character of the general area in which the Project is located, including without limitation, its climatic conditions, available labor supply and labor costs, and available equipment supply and equipment costs; and (iii) the quality and quantity of all materials, supplies, tools, equipment, labor, and professional services necessary to complete the Work in the manner and within the cost and time frame indicated by the Contract Documents; and has correlated the Bidder's personal observations with the requirements of and matters indicated in or by the proposed Contract Documents;
2. To hold the bid open for sixty (60) days subsequent to the date of the bid opening;
3. To enter into and execute a Contract with the Owner within ten (10) days after the date of the Notice of Award, if awarded on the basis of this bid, and in connection therewith to:
 - (a) Furnish all bonds and insurance required by the Contract Documents;
 - (b) Accomplish the Work in accordance with the Contract Documents; and
 - (c) Complete the Work within the time requirements as set forth in the Contract Documents;
4. That the Bidder has carefully examined the Instructions to Bidders, the Drawings and Specifications, and the Project Manual in its entirety, in order to determine how these affect the bid proposal, the forms of the Contract, the required Contract bonds, and duration thereof, and that the Bidder has inspected in detail the site of the proposed Work, and been familiarized with all of the requirements of construction, and of the governing municipalities under whose jurisdiction the Project falls (its codes, ordinances and construction requirements therein), and understands that in making this proposal, the Bidder waives all rights to plead any misunderstanding regarding the same;
5. That if this proposal is accepted, the Bidder is to provide all of the necessary equipment, tools, apparatus, labor, and other means of construction, and to do all of the Work and to furnish all of the materials specified in the Contract Documents in the manner and at the time therein prescribed, and in accordance with the requirements set forth;
6. To furnish a Bid Bond in accordance with the Instructions to Bidders;
7. To furnish Performance/Labor and Material Payment Bond in accordance with the Instructions to Bidders;
8. To commence Work as specified in the Instructions to Bidders, and to prosecute the Work in such a manner, and with sufficient materials, equipment and labor as will ensure its completion within reasonable time, it being understood and agreed that the completion within such reasonable time is an essential part of this Contract;

CONTRACTOR COMPLIANCE AND CERTIFICATIONS ATTACHMENT

Note: The following certifications form an integral part of the Agreement between the Owner and Contractor. Breach by Contractor of any of the certifications may result in immediate termination of the Contractor's services by Owner.

THE UNDERSIGNED CONTRACTOR HEREBY ACKNOWLEDGES, CERTIFIES, AFFIRMS AND AGREES AS FOLLOWS:

- A. Contractor has carefully read and understands the contents, purpose and legal effect of this document as stated above and hereafter in this document. The certifications contained herein are true, complete and correct in all respects.
- B. Contractor shall abide by and comply with, and in contracts which it has with all persons providing any of the services or Work on this Project on its behalf shall require compliance with, all applicable Federal, State and local laws and rules and regulations including without limitation those relating to 1) fair employment practices, affirmative action and prohibiting discrimination in employment; 2) workers' compensation; 3) workplace safety; 4) wages and claims of laborers, mechanics and other workers, agents, or servants in any manner employed in connection with contracts involving public funds or the development or construction of public works, buildings or facilities; and 5) steel products procurement.
- C. All contracts for this Project are subject to the provisions of the Illinois Prevailing Wage Act (820 ILCS 130/0.01 *et seq.*), providing for the payment of the prevailing rate of wage to all laborers, workmen and mechanics engaged in the Work. Contractor shall pay prevailing rates of wages in accordance with the wage determination included with the Contract Documents and any subsequent determinations issued by the Illinois Department of Labor which shall supersede the determination included in the Contract Documents, all in accordance with applicable law. Contractor is responsible for determining the applicable prevailing wage rates at the time of bid submission and at the time of performance of the Work. Failure of Contractor to make such determination shall not relieve it of its obligations in accordance with the Contract Documents. Contractor shall also comply with all other requirements of the Act including without limitation those pertaining to inclusion of required language in subcontracts, job site posting, maintenance and submission of certified payroll records and inspection of records. Contractor is not barred from entering into public contracts under Section 11a of the Illinois Prevailing Wage Act due to its having been found to have disregarded its obligations under the Act.
- D. To the best of Contractor's knowledge, no officer or employee of Contractor has been convicted of bribery or attempting to bribe an officer or employee of the State of Illinois, or any unit of local government, nor has any officer or employee made an admission of guilt of such conduct which is a matter of record.
- E. Contractor is not barred from bidding on or entering into public contracts due to having been convicted of bid-rigging or bid rotating under paragraphs 33E-3 or 33E-4 of the Illinois Criminal Code. Contractor also certifies that no officers or employees of the Contractor have been so convicted and that Contractor is not the successor company or a new company created by the officers or owners of one so convicted. Contractor further certifies that any such conviction occurring after the date of this certification will be reported to the Owner, immediately in writing, if it occurs during the bidding process, or otherwise prior to entering into the Contract therewith.

- F. Pursuant to the Illinois Human Rights Act (775 ILCS 5/2-105), Contractor has a written sexual harassment policy that includes, at a minimum, the following information: (i) a statement on the illegality of sexual harassment; (ii) the definition of sexual harassment under State law; (iii) a description of sexual harassment utilizing examples; (iv) the Contractor's internal complaint process including penalties; (v) the legal recourse, investigative and complaint process available through the Illinois Department of Human Rights and the Human Rights Commission and directions on how to contact both; and (vi) protection against retaliation as provided by Section 6-101 of the Illinois Human Rights Act. Contractor further certifies that such policy shall remain in full force and effect. A copy of the policy shall be provided to the Illinois Department of Human Rights upon request.
- G. Contractor shall abide by the "Employment of Illinois Workers on Public Works Act" (30 ILCS 570/0.01 *et seq.*) which stipulates that whenever there is a period of excessive unemployment in Illinois, defined as any month immediately following two (2) consecutive calendar months during which the level of unemployment in Illinois exceeds five percent (5%) as measured by the U.S. Bureau of Labor Statistics in its monthly publication of employment and unemployment figures, the Contractor shall employ only Illinois laborers unless otherwise exempted as so stated in the Act. ("Illinois laborer" means any person who has resided in Illinois for at least 30 days and intends to become or remain an Illinois resident). Other laborers may be used if Illinois laborers are not available or are incapable of performing the particular type of work involved if so certified by the Contractor and approved by the Owner.
- H. (i) Contractor's bid proposal was made without any connection or common interest in the profits anticipated to be derived from the Contract by Contractor with any other persons submitting any bid or proposal for the Contract; (ii) the Contract terms are in all respects fair and the Contract will be entered into by Contractor without collusion or fraud; (iii) no official, officer or employee of the Owner has any direct or indirect financial interest in Contractor's bid proposal or in Contractor, (iv) the Contractor has not directly or indirectly provided, and shall not directly or indirectly provide, funds or other consideration to any person or entity (including, but not limited to, the Owner and the Owner's employees and agents), to procure improperly special or unusual treatment with respect to this Agreement or for the purpose of otherwise improperly influencing the relationship between the Owner and the Contractor. Additionally, the Contractor shall cause all of its officers, directors, employees, (as the case may be) to comply with the restrictions contained in the preceding sentence.
- I. Contractor knows and understands the Equal Employment Opportunity Clause administrated by the Illinois Department of Human Rights, which is incorporated herein by this reference, and agrees to comply with the provisions thereof. Contractor further certifies that Contractor is an "equal opportunity employer" as defined by Section 2000 (e) of Chapter 21, Title 42 of the United States Code Annotated and Executive Orders #11246 and #11375 as amended, which are incorporated herein by this reference.
- J. Neither Contractor nor any substantially owned affiliated company is participating or shall participate in an international boycott in violation of the provisions of the U.S. Export Administration Act of 1979 or the regulations of the U.S. Department of Commerce promulgated under that Act.

- K. Contractor is not barred from contracting with the Owner because of any delinquency in the payment of any tax administrated by the Illinois Department of Revenue, unless it is being contested. Contractor further certifies that it understands that making a false statement regarding delinquency in taxes is a Class A misdemeanor and, in addition, voids the Contract and allows the Owner, a municipal entity, to recover in a civil action all amounts paid to the Contractor.
- L. If Contractor has 25 or more employees at the time of letting of the Contract, Contractor knows, understands and acknowledges its obligations under the Illinois Drug Free Workplace Act (30 ILCS 580/1 *et seq.*) and certifies that it will provide a drug-free workplace by taking the actions required under, and otherwise implementing on a continuing basis, Section 3 of the Drug Free Workplace Act. Contractor further certifies that it has not been debarred and is not ineligible for award of this Contract as the result of a violation of the Illinois Drug Free Workplace Act.
- M. Contractor knows, understands and acknowledges its obligations under the Substance Abuse Prevention on Public Works Act, 820 ILCS 265/1 *et seq.* A true and complete copy of Contractor's Substance Abuse Prevention Program Certification is attached to and made a part of this Contractor Compliance and Certification Attachment.
- N. The Contractor shall comply with the requirements and provisions of the Freedom of Information Act (5 ILCS 140/1 *et. seq.*) and, upon request of the Vernon Hills Park District's designated Freedom of Information Act Officer (FOIA Officer), Contractor shall within two (2) business days of said request, turn over to the FOIA Officer any record in the possession of the Contractor that is deemed a public record under FOIA.

 CONTRACTOR

By: _____
 Its: _____

STATE OF _____)
)SS
 COUNTY OF _____)

I, the undersigned, a notary public in and for the State and County, aforesaid, hereby certify that _____ appeared before me this day and, being first duly sworn on oath, acknowledged that he executed the foregoing instrument as his/her free act and deed and as the act and deed of the Contractor.

Dated: _____

(Notary Public)
 (SEAL)

SUBSTANCE ABUSE PREVENTION PROGRAM CERTIFICATION

The Substance Abuse Prevention on Public Works Projects Act, 820 ILCS 265/1 et seq., (“Act”) prohibits any employee of the Contractor or any Subcontractor on a public works project to use, possess or be under the influence of a drug or alcohol, as those terms are defined in the Act, while performing work on the project. The Contractor/Subcontractor **[circle one]**, by its undersigned representative, hereby certifies and represents to the Vernon Hills Park District that **[Contractor/Subcontractor must complete either Part A or Part B below]:**

A. The Contractor/Subcontractor **[circle one]** has in place for all of its employees not covered by a collective bargaining agreement that deals with the subject of the Act a written substance abuse prevention program, a true and correct copy of which is attached to this certification, which meets or exceeds the requirements of the Substance Abuse Prevention on Public Works Act, 820 ILCS 265/1 et seq. **[Contractor/Subcontractor must attach a copy of its substance abuse prevention program to this Certification.]**

Name of Contractor/Subcontractor (print or type)

Name and Title of Authorized Representative (print or type)

Signature of Authorized Representative

Dated: _____

B. The Contractor/Subcontractor **[circle one]** has one or more collective bargaining agreements in effect for all of its employees that deal with the subject matter of the Substance Abuse Prevention on Public Works Projects Act, 820 ILCS 265/1 et seq.

Name of Contractor/Subcontractor (print or type)

Name and Title of Authorized Representative (print or type)

Signature of Authorized Representative

Dated: _____

IMPORTANT NOTICE OF RESPONSIBILITY FOR PERIODIC REVISIONS TO PREVAILING WAGE RATES

Revisions of the following Prevailing Wage Rates are made periodically by the Illinois Department of Labor. These may be accessed by computer at <https://www.illinois.gov/idol/LawsRules/CONMED/Rates/2015/july/COUNTY.HTM>. As required by the Prevailing Wage Act, any and all such revisions supersede the Park District's June determination. Bidders and Contractors performing work on this Project are responsible for determining the applicable prevailing wage rates at the time of bid submission and performance of the Work. Failure of a Bidder/Contractor to make such determination shall not relieve it of its obligations in accordance with the Contract Documents. In consideration for the award to it of the Contract for this Project, the Contractor agrees that the foregoing notice satisfies any obligation of the public body in charge of this Project to notify the Contractor of periodic changes in the prevailing wage rates and the Contractor agrees to assume and be solely responsible for, as a material obligation of the Contractor under the Contract, the obligation to determine periodic revisions of the prevailing wage rates, to notify its subcontractors of such revisions, to post such revisions as required for the posting of wage rates under the Act, and to pay and require its subcontractors to pay wages in accordance with such revised rates.

SECTION C - SPECIAL CONDITIONS/SPECIAL PROVISIONS

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SPECIAL CONDITIONS
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20170773.0

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SPECIAL CONDITIONS

DEERPATH PARK – DRAGON PLAY AREA, VERNON HILLS PARK DISTRICT 20170773.0

These Special Conditions are intended to add to and in certain respects modify the “General Conditions of the Contract for Construction,” which are attached hereto and specifically made a part of the Contract Documents provided; however, in the event of any conflict between these Special Conditions and said General Conditions, these Special Conditions shall control.

1. GENERAL

The term “Work” shall mean and comprise the completed installation of site features required by the Contract Documents and shall include all labor, supervision, and services necessary to meet satisfactory performance and all materials and equipment incorporated or to be incorporated in the installation.

Anything mentioned in the governing specifications and not shown on the plans, or shown on the plans and not mentioned in the governing specifications, shall be of like effect as if shown on or mentioned in both. In case of any discrepancy in the plans or governing specifications, the matter shall be immediately submitted to Owner/Landscape Architect, without whose decision said discrepancy shall not be adjusted by Contractor, save only at his own risk and expense. Figured dimensions shall govern over scaled dimensions. Where "as shown," "as indicated," "as detailed," or words of similar import are used, it shall be understood that reference to the drawings is made unless stated otherwise.

The term Landscape Architect refers to the Owner’s designated representative. The Owner refers to the Vernon Hills Park District.

2. THE CONTRACT DOCUMENTS

The AGREEMENT, the INFORMATION FOR BIDDERS, the Contractor’s BID as accepted by the Owner, the SPECIFICATIONS, the Drawings, and all Addenda and amendments to any of the foregoing collectively constitute the Contract Documents, and are sometimes herein referred to as the “Contract”.

The contract Documents are complementary, and what is called for by any one shall be as binding as if called for by all. In the event of any conflict or inconsistency between the provisions of the AGREEMENT and the provisions of any of the other Contract Documents, the provisions of the AGREEMENT shall prevail.

3. OBLIGATIONS AND LIABILITY OF THE CONTRACTOR

The Contractor shall do all the work and perform and furnish all the labor, services, materials, equipment, plant, machinery, apparatus, appliances, tools, supplies and all other things (except as otherwise expressly provided herein) necessary and as herein specified for the proper performance and completion of the Work in the manner and within the time hereinafter

specified, in strict accordance with the Drawings, Specifications and other Contract Documents. (the "Work"). All parts of the Work and all fixtures, equipment, apparatus and other items indicated on the Drawings and not mentioned in the Specifications, or vice versa, and all work and material usual and necessary to make the Work complete in all its parts, including all incidental work necessary to make it complete and satisfactory and ready for use and operation, whether or not they are indicated on the Drawings or mentioned in the Specifications, shall be furnished and executed the same as if they were called for both by the Drawings and the Specifications.

4. AUTHORITY OF THE LANDSCAPE ARCHITECT

The Landscape Architect shall be the sole judge of the intent and meaning of the Drawings and Specifications and his decisions thereon and interpretation thereof shall be final, conclusive and binding on all parties.

5. SUB-CONTRACTING LIMITATIONS

The **Prime Contractor** of record shall perform, on site, with their own staff, Work equivalent to at least thirty-five percent (35%) of the total amount of this Contract Work at the site. Only pay items of the construction Contract will be used in computing the total amount of the **Prime Contractor's** Work. "Pay Items" shall exclude all general conditions, including but not limited to, insurance and bonding expenses, and **non-construction** overhead expenses.

6. COMPLIANCE WITH LAWS

It will be the responsibility of the Contractor to become aware of and at all times observe and comply with all laws, rules, regulations and orders of any governmental authority having jurisdiction over the Agreement or the Work. Where the specifications contained herein are in conflict with those of the governing agency, the most stringent will apply. When requested, the Contractor shall furnish evidence satisfactory to Owner of such compliance. The Contractor warrants that all articles furnished were and shall be produced in compliance with the Fair Labor Standards Act of 1938, as amended and that **all he/she (the Contractor) and his/her subcontractors must be licensed and bonded with the Vernon Hills Park District prior to start of construction.**

7. QUALIFICATIONS OF WORKMAN

Contractor shall maintain at the Work site, at all times during the progress of the Work, a competent superintendent who shall be thoroughly familiar with the type of materials being installed and the best methods for their installation, and who shall direct all work performed under this section.

The superintendent will be the representative of Contractor at the site and shall have authority to act on behalf of Contractor in all matters pertaining to the Work. Notices and other communications given to the superintendent shall be as binding as if given to Contractor.

8. WORKMANSHIP

High quality workmanship and craftsmanship will be expected for all phases of this Contract Work. All elements of completed Work found unacceptable or not meeting these standards will be removed and replaced by the Contractor at the sole cost and expense of the Contractor until satisfactory results are obtained.

9. WORK DESCRIPTION

The Work shall consist of furnishing, transporting and installing all equipment, apparatus, fixtures and other materials required for 1) Demolition/Removal, 2) Site Grading, 3) Excavation, 4) Storm Drainage, 5) Concrete Curbing, 6) Poured-in-Place Surfacing, 7) Play Equipment installation and 8) Landscape Plantings

10. CHANGES IN WORK/SUBSTITUTIONS

Contractor shall make no changes in the Work and shall receive no compensation for changes except those authorized by written Change Orders. The Contractor will be allowed 15% maximum overhead and profit for approved changes.

If the specified work item or species cannot be secured, Contractor shall submit alternate for Owner/Landscape Architect. Substitutions will not be permitted without written request from the Contractor for approval by the Owner/Landscape Architect. Contractor should be aware that more than one vendor might be required to obtain all plant materials. The desire to use a single plant vendor is not sufficient reason to request a substitution.

11. WOODCHIP PLAY SURFACE AND OTHER MATERIALS

Woodchip play surface material must meet ASTM F2075 specifications. Contractor shall submit sample for review and approval by Owner and Landscape Architect prior to purchasing material. Also, all other materials, not specifically described but required for a complete and proper installation shall be as selected by the Contractor subject to the approval of the Owner/Landscape Architect.

12. ADDITIONAL WORK

The Contractor, as requested, shall perform extra Work as directed by the Owner. A written "Work Addition Order" shall be submitted to and accepted by the Owner before any extra Work is begun

13. PRICING DISCREPANCIES

Discrepancies and/or errors in the multiplication or units of Work and unit prices will be resolved in favor of the unit prices. Errors between the

indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

14. EXISTING TREE PRESERVATION AND JOB CONDITIONS

In order to preserve the existing character of the site, it is the essence of this contract to preserve and protect all existing mature trees and vegetation unless designated for removal. Any inappropriate work means, method or procedure that compromises the integrity of an existing tree will be responsible for its replacement at a value deemed appropriate by the Owner and Landscape Architect.

Likewise, prior to installation, Contractor shall examine and evaluate grades, soils, and water levels, observe the conditions under which the Work is to be performed, and provide written notification to the Owner/Landscape Architect of unsatisfactory conditions. Such notification shall indicate the location(s) of conditions detrimental to the proper and timely completion of the Work. Contractor shall not proceed with the Work until unsatisfactory conditions have been corrected in an acceptable manner.

If obstructions below ground, soil profile and content or poor drainage affect the contract operation during the course of the Work, proposed adjustments to site amenities, furnishings, plant location, type of plant and planting method or drainage correction shall be submitted to and approved by the Landscape Architect prior to implementation.

15. SITE TOPSOIL

Prior to the stripping of topsoil, all areas within the grading limits containing existing debris shall be cleaned sufficiently to permit easy use of the topsoil free of unmanageable debris. All topsoil should be stockpiled prior to grading operations or properly managed during the grading operations to provide an ample supply for re-spreading over all landscape areas. (See plan and bid proposal form.) All topsoil to be furnished by the Contractor must be approved by the Owner/Landscape Architect. (Submit samples.)

16. EXCESS EXCAVATED MATERIAL AND DEBRIS

All excess excavated material and debris generated from this Work shall be hauled from the site at the Contractor's expense. Whenever possible, excess suitable soils generated from the grading requirements will be used on site. However, this cannot be an implied guarantee.

17. INTENT OF GRADING – CUT AND FILL

The intent of the **Grading and Excavation** is to achieve a balance between **cut** and **fill**. Excess soils must be used on site in berms at the direction of the Landscape Architect.

18. TRADE NAMES AND MATERIALS

Where materials or equipment are specified by a trade or brand name, it is not the intention to discriminate against an equal product of another manufacturer, but rather to set a definite standard of quality or performance. Where the words "equivalent," "proper," or "equal to" are used, they shall be understood to mean that the product referred to shall be proper, the equivalent of, or equal to some other product, in the opinion or judgment of Owner/Landscape Architect. Unless otherwise specified, all materials shall be the best of their respective kinds and shall be in all cases fully equal to approved samples. Notwithstanding that the words "or equal to" or other such expressions may be used in the specifications in connection with a material, manufactured article, or process, the materials, article, or process specifically designated shall be used, unless a substitute shall be approved in writing by the Landscape Architect, and the Owner/Landscape Architect shall have the right to require the use of such specifically designated materials, article, or process.

19. PROSECUTION AND PROGRESS OF WORK

Time and Order of Completion

- A. In performance of the Work, the Contractor shall diligently prosecute the Work to the end that it will be completed by the time provided in the Contract Documents. Contractor shall prosecute the Work at such times and order of precedence as will be most conducive to economy of installation.
- B. Contractor shall supervise and direct the Work competently and diligently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in a good and workmanlike manner, to the end that the completed Work shall comply strictly with the contract Documents. Contractor is and shall remain an independent Contractor and shall be solely responsible for the means, methods, techniques, sequences and procedures of landscape installation, the Owner and Landscape Architect being interested only in the results to be obtained and conformity of the completed Work to the Contract Documents.
- C. Contractor shall initiate and maintain, at all times during the progress of the Work, necessary precautions and procedures for the safety of, and shall provide protection necessary to prevent damage, injury or loss to, personnel employed on the Work and other persons and organizations who may be affected thereby and adjacent or adjoining property which may be affected by the Work.
- D. Contractor shall comply with all laws, rules, regulations and orders of any governmental authority having jurisdiction over the Work for the safety of persons (including, but not limited to, those which apply to employees) or property or to protect them from damage,

injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection.

20. LIMIT OF CONSTRUCTION AND CONSTRUCTION TRAFFIC

Construction traffic and staging shall be permitted only within the construction limits or construction fence limits as indicated on the plan. The Contractor shall be responsible for repair of any areas disturbed outside of this area, including grading, sodding, pavements, access roads, streets, and walks, at no additional expense to the Owner.

21. OWNER'S ACCESS

The Owner's representative shall at all times have access to the Work area. The Contractor shall keep the Owner advised of the progress of the project and shall provide opportunity for the Owner or his representative to inspect each phase of the project. The Contractor shall provide proper and safe facilities for such access and for inspection.

22. CONSTRUCTION ACCESS

Construction access shall be permitted only through the access points shown on the plan. No other access will be permitted. The Contractor shall be responsible for protection of existing curbs and pavements and for replacement of curbs and pavements should any damage occur.

23. ON-SITE MATERIAL STORAGE

For the performance of the Contract, the Contractor will be permitted to occupy such portions of the site as shown on the plans, or as permitted by the Owner and the Landscape Architect. A reasonable amount of tools, materials, or equipment for construction purposes may be stored in such places, but not more than is necessary to avoid delays in construction. Excavated and waste materials shall be removed from the site immediately as it is generated to avoid access problems for other trades and Contractors.

24. CONCRETE WORK

High quality workmanship and craftsmanship will be expected for all concrete work specified within the contract work. All concrete work found unacceptable or not meeting these standards will be removed and replaced by the Contractor at the sole cost and expense of the Contractor until satisfactory results are obtained.

All EXPOSED CONCRETE SURFACES shall be medium broom finished by a method approved by the Owner/Landscape Architect. Broom at right angles to slab/walk length. Ramp texture must conform to ADA standards.

All score joints (dummy joints) shall be located where shown on the plans or in 5' intervals for all flatwork. All score joints (dummy joints) in 6" x 18" curbs, thickened curb edges, or poured in place walls shall be located in 30'

intervals. All joints must be perpendicular (right angles) to the edge and straight. Corners (curb) are highly stressed areas and starting points for cracks. The Contractor shall provide a score joint located 6" from ONE corner end-perpendicular to ONE EDGE. ABSOLUTELY NO SAWCUT JOINTS WILL BE PERMITTED!

Expansion joints shall be constructed at right angles to the pavement edge with spacings not to exceed 33 feet. Expansion joints shall also be placed at interface with straight walks and short radius curved sections and interface of new walk with old walk. Expansion joints shall also be constructed as indicated or necessary to prevent shrinkage from cracking concrete. The Contractor shall bring the expansion joint to within ½" of top surface and fill the remainder of joint material with standard sealing compound.

All concrete footings to be inspected prior to pouring concrete. 24-hour notification to be given.

25. CONCRETE TESTING

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

26. GUARANTEE OF CONCRETE WORK

As an additional guarantee beyond the implied one (1) year guarantee of the Performance Bond, the Contractor will be required to extend that guarantee to a total of two (2) years after the installation. This guarantee will be for structural failures, as well as surface erosion due to spalling caused by frost popping soft aggregates (chert) within the concrete and surface erosion due to faulty workmanship. A high quality of workmanship will be demanded of the concrete Work. All Work not meeting high industry standards will be removed and replaced immediately at the Contractor's sole cost and expense. No graffiti or defacing of concrete will be accepted. Any concrete containing graffiti will be removed and replaced by the Contractor at no additional cost to the Owner.

27. GUARANTEE

The Contractor shall guarantee all materials and workmanship for a period of not less than one (1) year from the date of final acceptance by the Owner.

28. EMPLOYEE PARKING

It will be the responsibility of the Contractor to control employee parking limited to those areas designated by the Owner/Landscape Architect. Vehicles will not be permitted within the Work zone unless they are engaged

in the Work process directly. Employee parking is prohibited on any portion of adjacent streets, roads, or private ways without obtaining permits therefore from the proper authorities.

29. INTOXICATION LIQUORS

The Contractor shall not sell and shall neither permit nor suffer the introduction or use of intoxication liquors upon or about the Work.

30. UNIT PRICES

The Contractor will be responsible for notifying the Landscape Architect and Owner of any discrepancies or additions to Work items completed on a unit price basis. This notification must take place prior to the execution of the Work. The purpose of this requirement is to make the Owner aware of the extra items affecting the cost of the original Contract amount.

31. LAYOUT OF WORK

It shall be the responsibility of the Contractor to verify all existing conditions and dimensions shown on the plan. Woody plants shall not be staked in the field by the Owner/Landscape Architect. The Contractor shall capture the general intent of the design plan. Strict adherence to the design plan will be enforced.

32. PROTECTION OF PERSONS AND PROPERTY

It is the responsibility of the Contractor to adequately keep the work areas "buttoned up" and completely closed off from the public *daily at the end of each work day, including weekends*. The Contractor must also protect his Work from accidental damage. The responsibility for furnishing, installing, and maintaining temporary construction (security) fencing in conformance with the construction documents will be the responsibility of the Contractor. Failure to maintain this fencing will result in the correction of the problem by the Owner at a cost of \$100 per man-hour, back-charged to the Contract. The Contractor is also responsible for erecting signs, and other barriers necessary to protect the public welfare, as well as his employees. (See Barricades). The Contractor shall also bear the cost of repairing or replacing damaged Work or equipment. The Contractor shall confine his equipment, the storage of materials, and the equipment and the operation of all personnel to limits indicated by the Owner/Landscape Architect.

33. PROTECTION OF INSTALLED WORK

Protect installed work from damage by construction operations. Prohibit traffic from landscape areas.

34. OCCUPYING PRIVATE LAND

The Contractor shall not (except after written consent from the proper parties) enter or occupy with men, tools, materials, or equipment, any land outside the

right-of-way or property of the Owner. A copy of the written consent shall be given to the Owner/Landscape Architect.

35. BARRICADES

The Contractor must place solid physical barricades around all holes or trenches which must remain open overnight. Construction fence, A-frame blinkers, etc., may be used. Any unsafe areas discovered by the Owner to have been left by the Contractor without appropriate barricades may be corrected by the Owner at a cost of \$100 per man hour, back-charged to the Contractor. This right of the Owner shall not create any obligation by, or liability of the Owner to discover and correct such deficiencies, it being understood that the obligation to provide appropriate barricades shall remain at all times the sole obligation of the Contractor.

36. CONSTRUCTION DEBRIS

At the end of each working day, all construction debris generated shall be consolidated within a fenced area or an area on site specifically designated as a dump area and fenced.

37. UNDERGROUND UTILITIES

The locations of public or private utilities shown on the plans are approximate and are not guaranteed to be inclusive. This information represents only the opinion of the Engineer and the Landscape Architect as to the location and elevation of these utilities and is only included for the convenience of the bidders. THE LANDSCAPE ARCHITECT AND THE OWNER ASSUME NO RESPONSIBILITY WHATEVER IN RESPECT TO THE SUFFICIENCY OR ACCURACY OF THE INFORMATION SHOWN ON THE PLANS RELATIVE TO THE LOCATION AND ELEVATION OF UTILITY FACILITIES. The Contractor will be required to ascertain the exact horizontal and vertical locations of such utilities and exercise care during operations so as not to damage them. Each Contractor and subcontractor shall obtain from respective utility companies detailed information relative to the location and elevation of their facilities and the working schedules of the utility companies for removing or adjusting them. Prior to excavating, call Joint Utilities Location Information for Excavators (J.U.L.I.E.) at 1-800-892-0123. The Contractor must exercise extreme caution while working around existing utilities. Where underground utilities exist, field adjustments must be approved by the Owner/Landscape Architect prior to installation.

38. SANITARY REGULATIONS

The Contractor shall provide adequate sanitary facilities for the use of those employed on the Work. Such facilities shall be made available when the first employees arrive on the site of the Work, shall be properly secluded from public observation, and shall be constructed and maintained during the progress of the Work in suitable numbers and at such points and in such manner as may be required.

39. WATER

The Contractor will be responsible for supplying all hoses, connectors and miscellaneous appurtenances necessary to water seed/sod areas or landscape plantings. The Contractor must make arrangements with the Owner for water usage.

40. PROVISIONS FOR CONTRACT COMPLIANCE

Where provisions of the Special Conditions are in conflict with the General Conditions and/or the Specifications, the provisions of the Special and Supplementary Conditions will apply.

41. TIME OF COMPLETION

The date of substantial completion of Work is the date certified by the Owner/Landscape Architect when the construction is a minimum complete, in accordance with the plans and details so the Owner can occupy the project, or a designated portion thereof for the use for which it is intended. Final completion for this project refers to all scheduled work, punch list, and close out items being 100% complete.

Punch list: On the date of substantial completion, a list of items to be completed or corrected shall be prepared by the Contractor and verified or amended by the Owner/Landscape Architect. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the plans. The date of commencement of warranties for items on the punch list will be the date of final payment unless otherwise agreed to in writing.

42. FINAL CHECKING OF CONTRACTOR GRADING

The Contractor will notify the Owner/Landscape Architect when he has completed his grading requirements. The Owner/Landscape Architect will make arrangements to have these completed grades checked for accuracy. The Contractor will be responsible for maintaining the grading plan grid for this checking to follow. The proper interpretation of grade breaks or changes between grid points will be the responsibility of the Contractor to provide during the grading. These same grid points and breaks will be checked for their accuracy. Only after the grading has been checked and approved can seeding/ sodding take place. Again, efficiency of the grading for this project will be paramount to ensure that the seeding requirements are completed as early as possible.

43. EXISTING LINES

The Contractor will be responsible for the location and protection of all existing electrical utility lines on the project site. Should any electrical line be damaged, the Contractor must immediately notify the Landscape Architect and the Owner, and make repairs accordingly. The Contractor must use Scotch-Cast waterproof splice kit as manufactured by 3M to make all splices.

The Contractor must notify the Owner immediately after repairs have been made, prior to backfilling so that repairs can be inspected and approved.

44. LANDSCAPE MULCH QUANTITY

Where planting beds meet turf areas, the Contractor should provide a cultivated edge. For all landscape planting beds shown, install mulch at 3" thick. **Quantity specified in Bid Form includes only the mulch quantity required for planting beds.** For trees planted in turf areas, the Contractor shall provide a 6' diameter mulch ring at 3" thick with cultivated edge. **This shall be considered incidental to tree plantings.**

45. EXISTING DRAINAGE STRUCTURES AND LINKS

The Contractor is responsible for locating all existing drainage structures and lines prior to making connections to them, and to determine if they are functioning. Any drainage lines intercepted during site excavation shall be repaired or abandoned as determined by the Owner/Landscape Architect.

46. CLEAN-UP

Contractor shall confine the storage of materials and equipment and the operations of workers to the work site areas identified in the Contract Documents, rights-of-way, or easements that may be obtained by Contractor. Contractor shall not unreasonably encumber the Work site with equipment or other materials.

Contractor shall repair or replace all lawn, fences, concrete walls, concrete curbs, gravel and asphalt driveways, signs, culverts, and all other miscellaneous improvements, at no additional expense to Owner, damaged by Contractor due to his operations on the project, to a condition equal to or better than their condition before the Work was completed.

During the progress of the Work, Contractor shall keep the Work site free from accumulations of rubbish and debris and shall keep pavements clean and work areas and adjoining areas in an orderly condition. Debris shall be removed daily from the project site. Upon completion of the Work, Contractor shall remove all rubbish and debris as well as all equipment and machinery of Contractor and its sub-contractors. Local regulations regarding hauling and disposal shall apply.

Upon completion of the Work and before acceptance and final payment will be made, Contractor shall clean and remove from the site of the work surplus and discarded materials, temporary structures, and debris of every kind. The Contractor shall restore or replace, when and as directed, any public or private property damaged by his work, equipment, or employees, to a condition at least equal to that existing immediately prior to the beginning of operations.

47. PREVAILING WAGE GUIDELINES AND CERTIFIED PAYROLL REPORTING

Prevailing Rate of Wages: All contracts for work herein are subject to the provisions of Chapter 48, Section 39S-1 through Section 39S-12, of the Illinois Revised Statutes providing for the payment of prevailing rate of wages to all laborers, Workmen, and mechanics engaged on work provided for by this contract, which such provisions shall be applicable to all subcontractors and material men as well as the general Contractor. The Owner may at any time inquire of the Contractor as to rates of wages being paid employees of the Contractor, and any subcontractor or material men, whereupon such information shall be promptly provided to the Owner. The Contractor shall agree to indemnify the Owner for any and all violations of the prevailing wage laws and any rules and regulations now and hereafter issued pursuant to said laws.

Certified Payroll Report: The Contractor is required to submit a weekly certified payroll report beginning with the first week of commencement on the project and for every week afterward until the work is completed. The Contractor shall number each payroll report beginning with the #1 and clearly mark the last payroll for the project "Final". The Contractor may use the Payroll Form WH-347 form or other type of payroll computerized formats as long as it contains all of the information that is required on the WH-347. Each payroll report must be signed and contain language certifying that the information is true and correct.

48. POSTING BONDS AND INSURANCE

The Contractor shall be required to post all necessary bonds and required certificates of insurance for work on or adjacent to any State or County highway or for work within their respective rights-of-way. The cost of the specified insurance and bond shall be borne by the Contractor and considered incidental to the contract and no separate payment will be made.

49. HOURS OF WORK

Normal hours of operation are 7:00 a.m. to 7:00 p.m., Monday through Friday, 8 a.m. to 7 p.m. on weekends.

Work will not be permitted before or after these normal hours of work, nor on public holidays unless the Contractor has given the Owner/Landscape Architect at least 48 hours notice of each day such work is intended. Approval must be obtained from the Owner/Landscape Architect prior to such work proceeding.

50. NOISE CONTROL

The Contractor shall take all practical precautions to minimize noise so as to not impact the neighboring residences. As a general rule, noisy activity required along the south and east property lines shall be carried out between 9:00 a.m. and 5:00 p.m. weekdays.

51. EXTENSION OF TIME

Should Contractor be delayed in the completion of the Work by the wrongful act or neglect of Owner or Landscape Architect, or by other work performed on the Work site, or by changes ordered in the Work, or by strikes, lockouts, fire, or unusual delay by common carriers, or by other unavoidable causes beyond Contractor's control, except financial, then the time for performance shall be extended sufficiently to compensate for the delay, provided Contractor gives Owner/Landscape Architect prompt notice of the delay, with reasonable full particulars concerning the cause.

52. CUSTODY OF DRAWING AND SPECIFICATION

The Drawings and Specifications shall remain the sole property of the Landscape Architect. The copyright of all documents shall vest in the Landscape Architect and the Drawings and Specifications may not be reproduced in part or in whole, without written authority of the Landscape Architect.

53. BIDDING/CONSTRUCTION DOCUMENTS & WRITTEN SPECIFICATIONS

The Landscape Architect and consultants do not warrant or guarantee the accuracy and completeness of the work product therein beyond a reasonable diligence. If any mistakes, omissions, or discrepancies are found to exist with the work product, the Landscape Architect shall be promptly notified so that they may have the opportunity to take any steps necessary to resolve the issue. Failure to promptly notify the Landscape Architect and the Owner of such conditions shall absolve them from any responsibility for the consequences of such failure. Actions taken without the knowledge and consent of the Landscape Architect and the Owner, or in contradiction to the Landscape Architects work product or recommendations, shall become the responsibility not of the Owner and the Landscape Architect but for the parties responsible for the taking of such action.

54. METHOD OF PAYMENT

Separate payment shall be made for only those items listed on the Proposal Form. All items necessary for construction and not so listed shall be considered as incidental items.

SECTION D – PROJECT REFERENCES SUB-CONTRACTOR/SUPPLIER LIST

SUB-CONTRACTOR AND SUPPLIER LIST
 DEERPATH PARK – DRAGON PLAY AREA, VERNON HILLS PARK DISTRICT
 20170773.0

1.1 SUB-CONTRACTOR AND SUPPLIER LIST

- A. Failure to complete this form may result in the rejection of this bid.
- B. The sub-contractors and suppliers listed below will be involved in this contract work in the assignments listed. We understand that any deviation from this list must be requested in writing one (1) week prior to the start of the work that is involved.
- C. Legal name, current telephone number and current address of sub-contractor must be included.

Sub-Contractors (current phone # with Area Code)	Work Assignment

Suppliers	Material

Signature: _____

Title: _____

Company Name: _____

Date: _____

PROJECT REFERENCES

DEERPATH PARK – DRAGON PLAY AREA, VERNON HILLS PARK DISTRICT
20170773.0

1.1 PROJECT REFERENCES

- A. Failure to complete will result in rejection of bid.
- B. Please submit at least five (5) references for similar projects worked on within the past two (2) years.
- C. List current telephone number and address of contact person in box under CLIENT.

CLIENT & PHONE NUMBER	CONTACT PERSON	COST RANGE	DATE COMPLETED
Area Code Number			

Signature: _____
Title: _____
Company Name: _____
Date: _____

SECTION E – BID PROPOSAL

The quantities shown in the Unit Price Schedule are estimated and provisional, and are given for the bidder's convenience as well as provide a common basis for bidding. The bidder is responsible for verifying all estimated quantities in the Bid Form and/or perform his or her own quantity take off of work items. Quantities should be computed net from the drawings and no allowance should be made for bulking, shrinkage, or waste. Quantities should be rounded up or down where appropriate and spurious accuracy should be avoided.

Item / Description	Approx. Quantity	Unit	Unit Price	Subtotal
A. SITE PREPARATION/DEMOLITION:				
1. Furnish, install, and maintain temporary 6' link construction fencing to secure fence during construction. Portions of existing site fence to be used as construction fencing, see Existing Conditions and Demolition Plan.	122	linear feet	_____	_____
2. Furnish and install erosion control fencing as shown on plan on the critical sides of the site.	175	linear feet	_____	_____
3. Furnish and install tree protection fencing as shown.	66	linear feet	_____	_____
4. Furnish and install inlet sediment control device. See SESC plan.	X	lump sum	_____	_____
5. Remove existing fence panels including footings and deliver fence panels to the Owner.	X	lump sum	_____	_____
SUBTOTAL				

B. SITE GRADING AND EXCAVATION:

- 1. Strip and stockpile all topsoil encountered during grading operations.
- 2. Perform all grading and excavation to obtain subgrades for pavement and other grading requirements as shown or noted on Plan and in accordance with the specifications.

For completing items 1-2	X	lump sum	_____	_____
SUBTOTAL				

Item / Description	Approx. Quantity	Unit	Unit Price	Subtotal
--------------------	------------------	------	------------	----------

C. CONCRETE :

1. 6" x 12" concrete band	147	linear feet	_____	_____
---------------------------	-----	-------------	-------	-------

SUBTOTAL

D. PLAYGROUND SURFACING

1. Poured-in-Place Synthetic Rubber Surfacing: Cast-in-Place Synthetic Rubber Surfacing: Furnish and install 1/2" minimum thickness of EPDM surfacing material ("Evertop") as supplied by Surface America or approved equal over 4" concrete mud slab. Use aliphatic urethane binder (non-yellowing) with colors as recommended by the manufacturer. See detail for construction requirements, colors and areas.

1,300	square feet	_____	_____
-------	-------------	-------	-------

SUBTOTAL

E. CREATIVE PLAY AREA

Apparatus: Install all play apparatus as shown and noted on plan and in play apparatus schedule.

1. Install Dragon Head manufactured by Landscape Structures and furnished by Owner.

1	each	_____	_____
---	------	-------	-------

Item / Description	Approx. Quantity	Unit	Unit Price	Subtotal
2. Install Crawl Tunnel manufactured by Landscape Structures and furnished by owner.	1	each	_____	_____
3. Install complimentary Age Appropriate signage manufactured by Landscape Structures.	1	each	_____	_____
SUBTOTAL				

F. LAWN RESTORATION:

1. Fine grade and seed areas using Sunny Turf mix as manufactured by Clesen ProTurf Solutions or approved equal. Install per recommended seeding rates including erosion control blanket.	3,600	square feet	_____	_____
SUBTOTAL				

G. SITE LANDSCAPE PLANTINGS:

Furnish and install the following plant material as shown and noted on the plan.

Deciduous Shrubs

Itea virginica 'Sprich'/Little Henry Virginia Sweetspire	6	#05/5 gallon	_____	_____
--	---	--------------	-------	-------

Item / Description	Approx. Quantity	Unit	Unit Price	Subtotal
Perennials/Ornamental Grass				
Ruellia humilis/Wild Petunia	25	#01/1 gallon	_____	_____
Zizia aurea/Golden Alexanders	25	#01/1 gallon	_____	_____
Supply and install shredded hardwood mulch at 3" deep within all planting beds.	1	cubic yard	_____	_____
SUBTOTAL				
TOTAL FOR SITE IMPROVEMENTS				

BID RECAP
DEERPATH PARK – DRAGON PLAY AREA, VERNON HILLS PARK DISTRICT

BASE BID TOTAL COST

EXECUTION

Signed this _____ day of _____, 2017

Firm Name: _____

Address: _____

Telephone: _____ Fax: _____

Bidders Signature: _____

Title: _____

Corporate Seal:

ACKNOWLEDGEMENT OF ADDENDA
DEERPATH PARK – DRAGON PLAY AREA, VERNON HILLS PARK DISTRICT
20170773.0

1.1 Each bidder for this project shall be responsible for acknowledging all addenda that have been received during the bidding period. In appropriate places, please sign for each addendum received.

ADDENDUM #1 _____
Signature Title

ADDENDUM #2 _____
Signature Title

ADDENDUM #3 _____
Signature Title

ADDENDUM #4 _____
Signature Title

ADDENDUM #5 _____
Signature Title

ADDENDUM #6 _____
Signature Title

ADDENDUM #7 _____
Signature Title

ADDENDUM #8 _____
Signature Title

ADDENDUM #9 _____
Signature Title

ADDENDUM #10 _____
Signature Title

ADDENDUM #11 _____
Signature Title

ADDENDUM #12 _____
Signature Title

AMERICANS WITH DISABILITIES ACT

DEERPATH PARK – DRAGON PLAY AREA, VERNON HILLS PARK DISTRICT
20170773.0

- A. The Americans with Disabilities Act (42 U.S.C. 12101 et seq.) and the regulations thereunder (28 CFR 35.130) ADA prohibits discrimination against persons with disabilities by the State, whether directly or through contractual arrangements, in the provision of any aid, benefit or service. As a condition of receiving this contract, the undersigned vendor certifies that services, programs and activities provided under this contract are and will continue to be in compliance with the ADA.

- B. By submitting a bid under these Instructions to Bidders, the bidder acknowledges and warrants that the work shall be designed in full compliance with the Americans with Disabilities Act (42 U.S.C. 12101 et seq.) and with applicable regulations and accessibility guidelines thereunder, and with the Environmental Barriers Act (IL Rev Stat Ch 111 1/2, par. 3711 et seq.) and its regulations in the Illinois Accessibility Code (71 IL Admin. Code S400.110 et seq.).

- C. That all products, services, and programs conform to, and be delivered in a manner consistent with the American Disabilities Act. As a condition of receiving this contract, the undersigned vendor certifies that services, programs and activities provided under this contract are and will continue to be in compliance with the ADA. Further, the undersigned agrees to indemnify the Owner against any claims and the costs of legal defense resulting from the vendor's failure to be in compliance with the ADA.

Signature: _____

Title: _____

Company Name: _____

Date: _____

CONTRACTOR'S HOLD HARMLESS AGREEMENT
DEERPATH PARK – DRAGON PLAY AREA, VERNON HILLS PARK DISTRICT
20170773.0

- A. The Contractor agrees to indemnify and hold harmless The Owner, The Vernon Hills Park District, 635 North Aspen Drive, Vernon Hills, IL 60061, its Trustees, Officers, Officials and Employees from any and all losses, claims, actions, costs, expenses, judgments, subrogations or other damages resulting from injury to any person (including injury resulting in death) or damage (including loss or destruction) to property of whatsoever nature or any person arising out of or incident to the performance of Work by the Contractor (including but not limited to its employees, agents, subcontractors and others designated by the Contractor to perform Work or services in, about or attendant to, the Work and services under the terms of this Contract) for the project listed above.

- B. The Contractor shall not be held responsible for any losses, expenses, claims, subrogations, actions, costs, judgments or other damages, directly, solely and proximately caused by the negligence of the Owner.

Signature: _____

Title: _____

Company Name: _____

Date: _____

SECTION F – GENERAL CONDITIONS

AIA[®] Document A201[™] – 2007

General Conditions of the Contract for Construction

for the following PROJECT:
(Name and location or address)

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

THE OWNER:
(Name, legal status and address)

THE ARCHITECT:
(Name, legal status and address)

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 BASIC DEFINITIONS

§ 1.1.1 THE CONTRACT DOCUMENTS

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding requirements.

§ 1.1.2 THE CONTRACT

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

§ 1.1.3 THE WORK

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 THE PROJECT

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by separate contractors.

§ 1.1.5 THE DRAWINGS

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules and diagrams.

§ 1.1.6 THE SPECIFICATIONS

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 INSTRUMENTS OF SERVICE

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 INITIAL DECISION MAKER

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2 and certify termination of the Agreement under Section 14.2.2.

§ 1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.3 CAPITALIZATION

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 INTERPRETATION

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and will retain all common law, statutory and other reserved rights, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce the Instruments of Service provided to them solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers may not use the Instruments of Service on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect's consultants.

§ 1.6 TRANSMISSION OF DATA IN DIGITAL FORM

If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they shall endeavor to establish necessary protocols governing such transmissions, unless otherwise already provided in the Agreement or the Contract Documents.

ARTICLE 2 OWNER

§ 2.1 GENERAL

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

§ 2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

§ 2.2.1 Prior to commencement of the Work, the Contractor may request in writing that the Owner provide reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. Thereafter, the Contractor may only request such evidence if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) a change in the Work materially changes the Contract Sum; or (3) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due. The Owner shall furnish such evidence as a condition precedent to commencement or continuation of the Work or the portion of the Work affected by a material change. After the Owner furnishes the evidence, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.2 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.2.3 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.2.4 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.2.5 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 2.3 OWNER'S RIGHT TO STOP THE WORK

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect or failure. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

ARTICLE 3 CONTRACTOR

§ 3.1 GENERAL

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.2.3, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall make Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner and Architect and shall not proceed with that portion of the Work without further written instructions from the Architect. If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Owner shall be solely responsible for any loss or damage arising solely from those Owner-required means, methods, techniques, sequences or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 LABOR AND MATERIALS

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work authorized by the Architect in accordance with Sections 3.12.8 or 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.5 WARRANTY

The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.6 TAXES

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 PERMITS, FEES, NOTICES AND COMPLIANCE WITH LAWS

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 CONCEALED OR UNKNOWN CONDITIONS

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 21 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor in writing, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may proceed as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 ALLOWANCES

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct,

but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- .3 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 SUPERINTENDENT

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the name and qualifications of a proposed superintendent. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to the proposed superintendent or (2) that the Architect requires additional time to review. Failure of the Architect to reply within the 14 day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

§ 3.10.2 The Contractor shall prepare a submittal schedule, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, and shall submit the schedule(s) for the Architect's approval. The Architect's approval shall not unreasonably be delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.11 DOCUMENTS AND SAMPLES AT THE SITE

The Contractor shall maintain at the site for the Owner one copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and one copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Architect and shall be delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents. Their purpose is to demonstrate the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve and submit to the Architect Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Architect in writing of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such written notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. The Contractor shall not be required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled

to rely upon the adequacy, accuracy and completeness of the services, certifications and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review, approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.

§ 3.13 USE OF SITE

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.14 CUTTING AND PATCHING

§ 3.14.1 The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting and patching shall be restored to the condition existing prior to the cutting, fitting and patching, unless otherwise required by the Contract Documents:

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or separate contractors by cutting, patching or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the Owner or a separate contractor except with written consent of the Owner and of such separate contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a separate contractor the Contractor's consent to cutting or otherwise altering the Work.

§ 3.15 CLEANING UP

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 ACCESS TO WORK

The Contractor shall provide the Owner and Architect access to the Work in preparation and progress wherever located.

§ 3.17 ROYALTIES, PATENTS AND COPYRIGHTS

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for such defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner or Architect. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Architect.

§ 3.16 INDEMNIFICATION

§ 3.18.1 To the fullest extent permitted by law the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce

other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

ARTICLE 4 ARCHITECT

§ 4.1 GENERAL

§ 4.1.1 The Owner shall retain an architect lawfully licensed to practice architecture or an entity lawfully practicing architecture in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 4.1.2 Duties, responsibilities and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified or extended without written consent of the Owner, Contractor and Architect. Consent shall not be unreasonably withheld.

§ 4.1.3 If the employment of the Architect is terminated, the Owner shall employ a successor architect as to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 4.2 ADMINISTRATION OF THE CONTRACT

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Section 3.3.1.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and report to the Owner (1) known deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION

Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Architect about matters arising out of or relating to the Contract. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the

Work in accordance with Sections 13.5.2 and 13.5.3, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5 and 3.12. The Architect's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Architect, of any construction means, methods, techniques, sequences or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may authorize minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more project representatives to assist in carrying out the Architect's responsibilities at the site. The duties, responsibilities and limitations of authority of such project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 DEFINITIONS

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate contractor or subcontractors of a separate contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

§ 5.2.1 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to any such proposed person or entity or (2) that the Architect requires additional time for review. Failure of the Owner or Architect to reply within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person or entity previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.3 SUBCONTRACTUAL RELATIONS

By appropriate agreement, written where legally required for validity, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor in writing; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon such assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

§ 6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Article 15.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each separate contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to the construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, separate contractors and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces, the Owner shall be deemed to be subject to the same obligations and to have the same rights that apply to the Contractor under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6 and Articles 10, 11 and 12.

§ 6.2 MUTUAL RESPONSIBILITY

§ 6.2.1 The Contractor shall afford the Owner and separate contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Architect apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that the Owner's or separate contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a separate contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a separate contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or separate contractors as provided in Section 10.2.5.

§ 6.2.5 The Owner and each separate contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 OWNER'S RIGHT TO CLEAN UP

If a dispute arises among the Contractor, separate contractors and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 GENERAL

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor and Architect; a Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor; an order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the Work.

§ 7.2 CHANGE ORDERS

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor and Architect stating their agreement upon all of the following:

- .1 The change in the Work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.

§ 7.3 CONSTRUCTION CHANGE DIRECTIVES

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.7.

§ 7.3.4 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 7.3.5 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.6 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.7 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the method and the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.7 shall be limited to the following:

- .1 Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;
- .2 Costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work; and
- .5 Additional costs of supervision and field office personnel directly attributable to the change.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 MINOR CHANGES IN THE WORK

The Architect has authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes will be effected by written order signed by the Architect and shall be binding on the Owner and Contractor.

ARTICLE 8 TIME

§ 8.1 DEFINITIONS

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 PROGRESS AND COMPLETION

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be

furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 DELAYS AND EXTENSIONS OF TIME

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner; or by changes ordered in the Work; or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control; or by delay authorized by the Owner pending mediation and arbitration; or by other causes that the Architect determines may justify delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 CONTRACT SUM

The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.2 SCHEDULE OF VALUES

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit to the Architect, before the first Application for Payment, a schedule of values allocating the entire Contract Sum to the various portions of the Work and prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 9.3 APPLICATIONS FOR PAYMENT

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. Such application shall be notarized, if required, and supported by such data substantiating the Contractor's right to payment as the Owner or Architect may require, such as copies of requisitions from Subcontractors and material suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or material supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage and transportation to the site for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the

Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.

§ 9.4 CERTIFICATES FOR PAYMENT

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect determines is properly due, or notify the Contractor and Owner in writing of the Architect's reasons for withholding certification in whole or in part as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data comprising the Application for Payment, that, to the best of the Architect's knowledge, information and belief, the Work has progressed to the point indicated and that the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Architect. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed construction means, methods, techniques, sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment, or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 DECISIONS TO WITHHOLD CERTIFICATION

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a separate contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;
- or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.3 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or material or equipment suppliers to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Architect will reflect such payment on the next Certificate for Payment.

§ 9.6 PROGRESS PAYMENTS

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor no later than seven days after receipt of payment from the Owner the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and material and equipment suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay or to see to the payment of money to a Subcontractor, except as may otherwise be required by law.

§ 9.6.5 Contractor payments to material and equipment suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors and suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, shall create any fiduciary liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.7 FAILURE OF PAYMENT

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' written notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shut-down, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 SUBSTANTIAL COMPLETION

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage applying to such Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.9 PARTIAL OCCUPANCY OR USE

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer as required under Section 11.3.1.5 and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 FINAL COMPLETION AND FINAL PAYMENT

§ 9.10.1 Upon receipt of the Contractor's written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection and, when the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment and (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- .1 liens, Claims, security interests or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents; or
- .3 terms of special warranties required by the Contract Documents.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 SAFETY PRECAUTIONS AND PROGRAMS

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 SAFETY OF PERSONS AND PROPERTY

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or Sub-subcontractors; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

§ 10.2.3 The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3, except damage or loss attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 INJURY OR DAMAGE TO PERSON OR PROPERTY

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 HAZARDOUS MATERIALS

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Owner and Architect in writing.

§ 10.3.2 Upon receipt of the Contractor's written notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of such material or substance or who are to perform the task of removal or safe containment of such material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shut-down, delay and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall indemnify the Owner for the cost and expense the Owner incurs (1) for remediation of a material or substance the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall indemnify the Contractor for all cost and expense thereby incurred.

§ 10.4 EMERGENCIES

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 CONTRACTOR'S LIABILITY INSURANCE

§ 11.1.1 The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

- .1 Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed;
- .2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
- .3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
- .4 Claims for damages insured by usual personal injury liability coverage;
- .5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
- .6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;
- .7 Claims for bodily injury or property damage arising out of completed operations; and
- .8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

§ 11.1.2 The insurance required by Section 11.1.1 shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment, and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.

§ 11.1.3 Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies required by this Section 11.1 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such coverage until the expiration of the time required by Section 11.1.2. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness.

§ 11.1.4 The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner, the Architect and the Architect's consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.

§ 11.2 OWNER'S LIABILITY INSURANCE

The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.

§ 11.3 PROPERTY INSURANCE

§ 11.3.1 Unless otherwise provided, the Owner shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder's

risk "all-risk" or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract Modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.3 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project.

§ 11.3.1.1 Property insurance shall be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's and Contractor's services and expenses required as a result of such insured loss.

§ 11.3.1.2 If the Owner does not intend to purchase such property insurance required by the Contract and with all of the coverages in the amount described above, the Owner shall so inform the Contractor in writing prior to commencement of the Work. The Contractor may then effect insurance that will protect the interests of the Contractor, Subcontractors and Sub-subcontractors in the Work, and by appropriate Change Order the cost thereof shall be charged to the Owner. If the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain insurance as described above, without so notifying the Contractor in writing, then the Owner shall bear all reasonable costs properly attributable thereto.

§ 11.3.1.3 If the property insurance requires deductibles, the Owner shall pay costs not covered because of such deductibles.

§ 11.3.1.4 This property insurance shall cover portions of the Work stored off the site, and also portions of the Work in transit.

§ 11.3.1.5 Partial occupancy or use in accordance with Section 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.

§ 11.3.2 BOILER AND MACHINERY INSURANCE

The Owner shall purchase and maintain boiler and machinery insurance required by the Contract Documents or by law, which shall specifically cover such insured objects during installation and until final acceptance by the Owner; this insurance shall include interests of the Owner, Contractor, Subcontractors and Sub-subcontractors in the Work, and the Owner and Contractor shall be named insureds.

§ 11.3.3 LOSS OF USE INSURANCE

The Owner, at the Owner's option, may purchase and maintain such insurance as will insure the Owner against loss of use of the Owner's property due to fire or other hazards, however caused. The Owner waives all rights of action against the Contractor for loss of use of the Owner's property, including consequential losses due to fire or other hazards however caused.

§ 11.3.4 If the Contractor requests in writing that insurance for risks other than those described herein or other special causes of loss be included in the property insurance policy, the Owner shall, if possible, include such insurance, and the cost thereof shall be charged to the Contractor by appropriate Change Order.

§ 11.3.5 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, the Owner shall waive all rights in accordance with the terms of Section 11.3.7 for damages caused by fire or other causes of loss covered by this separate property insurance. All separate policies shall provide this waiver of subrogation by endorsement or otherwise.

§ 11.3.6 Before an exposure to loss may occur, the Owner shall file with the Contractor a copy of each policy that includes insurance coverages required by this Section 11.3. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project. Each policy shall contain a provision that the policy will not be canceled or allowed to expire, and that its limits will not be reduced, until at least 30 days' prior written notice has been given to the Contractor.

§ 11.3.7 WAIVERS OF SUBROGATION

The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents and employees, each of the other, and (2) the Architect, Architect's consultants, separate contractors described in Article 6, if any, and any of their subcontractors, sub-subcontractors, agents and employees, for damages caused by fire or other causes of loss to the extent covered by property insurance obtained pursuant to this Section 11.3 or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the Owner as fiduciary. The Owner or Contractor, as appropriate, shall require of the Architect, Architect's consultants, separate contractors described in Article 6, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

§ 11.3.8 A loss insured under the Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.3.10. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

§ 11.3.9 If required in writing by a party in interest, the Owner as fiduciary shall, upon occurrence of an insured loss, give bond for proper performance of the Owner's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. The Owner shall deposit in a separate account proceeds so received, which the Owner shall distribute in accordance with such agreement as the parties in interest may reach, or as determined in accordance with the method of binding dispute resolution selected in the Agreement between the Owner and Contractor. If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor after notification of a Change in the Work in accordance with Article 7.

§ 11.3.10 The Owner as fiduciary shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five days after occurrence of loss to the Owner's exercise of this power, if such objection is made, the dispute shall be resolved in the manner selected by the Owner and Contractor as the method of binding dispute resolution in the Agreement. If the Owner and Contractor have selected arbitration as the method of binding dispute resolution, the Owner as fiduciary shall make settlement with insurers or, in the case of a dispute over distribution of insurance proceeds, in accordance with the directions of the arbitrators.

§ 11.4 PERFORMANCE BOND AND PAYMENT BOND

§ 11.4.1 The Owner shall have the right to require the Contractor to furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in bidding requirements or specifically required in the Contract Documents on the date of execution of the Contract.

§ 11.4.2 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 UNCOVERING OF WORK

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, such costs and the cost of correction shall be at the Contractor's expense unless the condition was caused by the Owner or a separate contractor in which event the Owner shall be responsible for payment of such costs.

§ 12.2 CORRECTION OF WORK

§ 12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 AFTER SUBSTANTIAL COMPLETION

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.4.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the Owner or separate contractors caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 ACCEPTANCE OF NONCONFORMING WORK

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 GOVERNING LAW

The Contract shall be governed by the law of the place where the Project is located except that, if the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.2 SUCCESSORS AND ASSIGNS

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to covenants, agreements and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.

§ 13.3 WRITTEN NOTICE

Written notice shall be deemed to have been duly served if delivered in person to the individual, to a member of the firm or entity, or to an officer of the corporation for which it was intended; or if delivered at, or sent by registered or certified mail or by courier service providing proof of delivery to, the last business address known to the party giving notice.

§ 13.4 RIGHTS AND REMEDIES

§ 13.4.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights and remedies otherwise imposed or available by law.

§ 13.4.2 No action or failure to act by the Owner, Architect or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach there under, except as may be specifically agreed in writing.

§ 13.5 TESTS AND INSPECTIONS

§ 13.5.1 Tests, inspections and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of (1) tests, inspections or approvals that do not become requirements until after bids are received or negotiations concluded, and (2) tests, inspections or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating their cost to the Contractor.

§ 13.5.2 If the Architect, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Section 13.5.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.5.3, shall be at the Owner's expense.

§ 13.5.3 If such procedures for testing, inspection or approval under Sections 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure including those of repeated procedures and compensation for the Architect's services and expenses shall be at the Contractor's expense.

§ 13.5.4 Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.5.5 If the Architect is to observe tests, inspections or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.5.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.6 INTEREST

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at such rate as the parties may agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

§ 13.7 TIME LIMITS ON CLAIMS

The Owner and Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in the Agreement within the time period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all claims and causes of action not commenced in accordance with this Section 13.7.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 TERMINATION BY THE CONTRACTOR

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency that requires all Work to be stopped;
- .3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- .4 The Owner has failed to furnish to the Contractor promptly, upon the Contractor's request, reasonable evidence as required by Section 2.2.1.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, repeated suspensions, delays or interruptions of the entire Work by the Owner as described in Section 14.3 constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, including reasonable overhead and profit, costs incurred by reason of such termination, and damages.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing portions of the Work under contract with the Contractor because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' written notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 TERMINATION BY THE OWNER FOR CAUSE

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the above reasons exist, the Owner, upon certification by the Initial Decision Maker that sufficient cause exists to justify such action, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 SUSPENSION BY THE OWNER FOR CONVENIENCE

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay or interruption as described in Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- .1 that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work not executed.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 CLAIMS

§ 15.1.1 DEFINITION

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim.

§ 15.1.2 NOTICE OF CLAIMS

Claims by either the Owner or Contractor must be initiated by written notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker.

Claims by either party must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3 CONTINUING CONTRACT PERFORMANCE

Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents. The Architect will prepare Change Orders and issue Certificates for Payment in accordance with the decisions of the Initial Decision Maker.

§ 15.1.4 CLAIMS FOR ADDITIONAL COST

If the Contractor wishes to make a Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.5 CLAIMS FOR ADDITIONAL TIME

§ 15.1.5.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, written notice as provided herein shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.5.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction.

§ 15.1.6 CLAIMS FOR CONSEQUENTIAL DAMAGES

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses; for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.6 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 INITIAL DECISION

§ 15.2.1 Claims, excluding those arising under Sections 10.3, 10.4, 11.3.9, and 11.3.10, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the Initial Decision Maker with no decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of such request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of an initial decision, demand in writing that the other party file for mediation within 60 days of the initial decision. If such a demand is made and the party receiving the demand fails to file for mediation within the time required, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 MEDIATION

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.6 shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.4 ARBITRATION

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

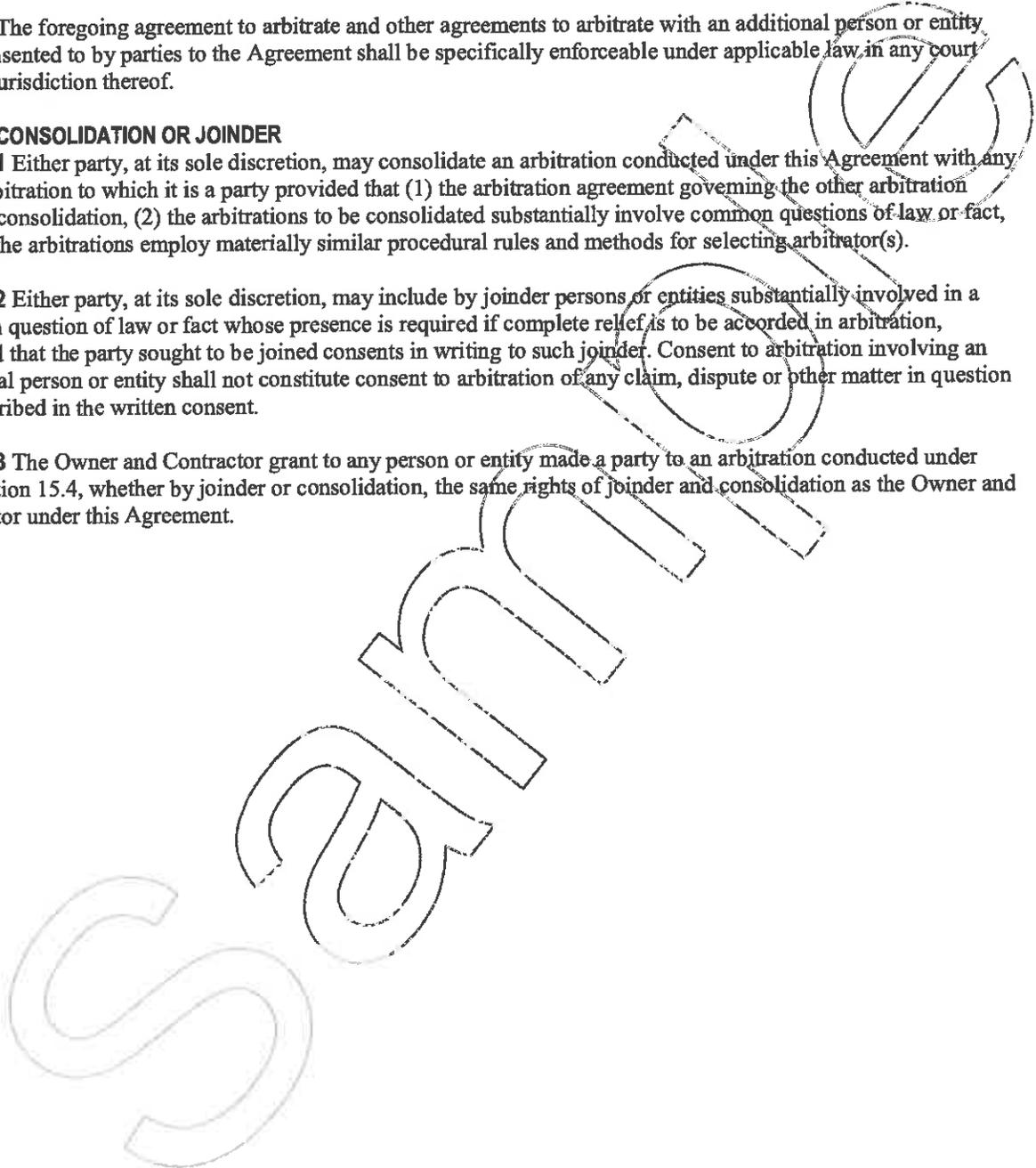
§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

§ 15.4.4 CONSOLIDATION OR JOINDER

§ 15.4.4.1 Either party, at its sole discretion, may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Either party, at its sole discretion, may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as the Owner and Contractor under this Agreement.



SECTION G – TECHNICAL SPECIFICATIONS

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Contract description.
2. Contractor's use of site.
3. Work sequence and coordination.
4. Contractor's responsibility.
5. Owner occupancy.
6. Limits of construction and construction traffic
7. Storm water structures and lines.
8. Construction vehicle parking.
9. Underground utilities.
10. Workmanship.
11. Permits.
12. Specification conventions.

B. Documents affecting work of this section include, but are not limited to, General Conditions, and Sections in Division 1 of these Specifications.

1. Section 01 20 00 - Price and Payment Procedures
2. Section 01 22 00 – Unit Prices
3. Section 01 30 00 - Administrative Requirements
4. Section 01 32 16 - Construction Progress Schedule
5. Section 01 33 00 – Submittal Procedures
6. Section 01 40 00 – Quality Requirements
7. Section 01 50 00 - Temporary Facilities and Controls
8. Section 01 56 39 – Temporary Tree and Plant Protection
9. Section 01 70 00 - Execution and Closeout Requirements

1.02 CONTRACT DESCRIPTION

A. Work of the Project includes construction of:

1. Excavation/Demolition

2. Site Grading/Compensatory Storage
 3. Poured-in-Place Surfacing
 4. Poured-in-Place Dragon with Fiberglass Head & Crawl Tunnel
 5. Concrete Curb/Band
 6. Landscape Restoration
- B. Perform Work of Contract under fixed cost lump sum Contract with Owner according to Conditions of Contract.

1.03 CONTRACTOR'S USE OF SITE

- A. Limit use of Site to allow:
1. Owner occupancy.
- B. Construction Operations: Limited to areas indicated on Drawings.
1. Noisy and Disruptive Operations (such as Use of Jack Hammers and Other Noisy Equipment): Not allowed in close proximity to existing building during regular hours of operation. Coordinate and schedule such operations with Owner to minimize disruptions.
- C. Time Restrictions for Performing any Work:
1. Weekdays 7:00 AM to 7:00PM.
 2. Weekends 8:00 AM to 5:00 PM.
- D. Utility Outages and Shutdown:
1. Coordinate and schedule electrical and other utility outages with Owner.
 2. Outages: Allowed only at previously agreed upon times. In general, schedule outages at times when facility is not being used.
 3. At least one week before scheduled outage, submit Outage Request Plan to Landscape Architect itemizing the dates, times, and duration of each requested outage.
- E. Coordination with Landscape Architect
1. Coordinate use of premises under direction of the Owner's representative.
- F. Assume full responsibility for the protection and safekeeping of materials and equipment under this Contract, stored on the site.
- G. Move any stored equipment or materials under Contractor's control, which interfere with operations of the Owner or separate contractor.
- H. Obtain and pay for the use of additional storage or work areas needed for operations.

1.04 WORK SEQUENCE AND COORDINATION

- A. Coordinate the construction operations included in various Sections of these Specifications to assure efficient and orderly installation of each part of the Work. Coordinate construction operations included under different Contracts.

1.05 CONTRACTORS RESPONSIBILITY

- A. Contractor shall provide layout of site development and establish and guarantee all main lines, levels, etc. to be called for on the drawings.
- B. Contractor shall be responsible for the lines, level, etc. of all his or her subcontractors

1.06 OWNER OCCUPANCY

- A. Owner will occupy Site during entire period of construction for conduct of normal operations.
- B. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.
- C. Schedule the Work to accommodate Owner occupancy.
- D. Contractor shall, at all times, conduct all their operations as to ensure the least inconvenience to the general public.

1.07 LIMITS OF CONSTRUCTION AND CONSTRUCTION TRAFFIC

- A. Construction traffic and staging shall be permitted only within the construction limits or construction fence limits as indicated on the plan. The Contractor shall be responsible for repair of any areas disturbed outside this area.

1.08 STORM WATER STRUCTURES AND LINES

- A. The Contractor is responsible for locating all existing storm water structures and lines prior to making connections to them, and to determine if they are functioning properly. All storm water lines intercepted during site excavations shall be repaired or abandoned as determined by the Owner's representative.

1.09 CONSTRUCTION VEHICLE PARKING

- A. It will be the responsibility of the Contractor to control construction vehicle parking. Vehicles will not be permitted within the work zone unless they are engaged directly in the work in progress.

1.10 UNDERGROUND UTILITIES

- A. The Contractor is responsible for locating and identifying all existing underground utilities prior to beginning any excavation of trenching. Contact J.U.L.I.E. prior to commencing work.

1.11 WORKMANSHIP

- A. High quality, first class workmanship, will be expected for all phases of this Contract. Any element of completed work found unacceptable or not meeting standards will be

removed and replaced with acceptable workmanship by the Contractor at the sole cost and expense of the Contractor.

1.12 PERMITS

- A. Furnish all necessary permits for construction of Work including the following:
1. Building permit.
 2. NPDES permit.

1.13 SPECIFICATION CONVENTIONS

- A. These Specifications are written in imperative mood and streamlined form. This imperative language is directed to Contractor unless specifically noted otherwise. The words "shall be" are included by inference where a colon (:) is used within sentences or phrases.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION - Not Used

END OF SECTION

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Schedule of Values.
- B. Application for Payment.
- C. Change procedures.
- D. Documentation of changes in contract sum and contract time.
- E. Procedures for preparation and submittal of application for final payment.

1.02 SCHEDULE OF VALUES

- A. Submit printed schedule on AIA G703 - Continuation Sheet for G702.
- B. Submit Schedule of Values in duplicate within 15 days after date of Owner-Contractor Agreement.
- C. Format: Use Table of Contents of this Project Manual. Identify each line item with number and title of major Specification Section.
- D. For each major line item list sub-values of major products or operations under the item.
- E. Revise schedule to list approved Change Orders with each Application for Payment.
- F. Upon request of the Landscape Architect, support the values with data which will substantiate their correctness.
 - 1. The Schedule of Values, unless objected to by the Landscape Architect, shall be used only as the basis for the Contractor's Applications for Payment.
- G. Form and Content of Schedule of Values:
 - 1. Type schedule on 8-1/2" x 11" white paper; Contractor's standard forms and automated printout will be considered for acceptance by Landscape Architect upon Contractor's request. Identify schedule with:
 - a. Title of Project and location
 - b. Landscape Architect and Project number
 - c. Name and Address of Contractor
 - d. Contract designation
 - e. Date of submission
 - 2. Schedule shall list the installed value of the component parts of the Work in sufficient detail to serve as a basis for computing values for progress payments during construction.
 - 3. For the various portions of the Work:

- a. Each item shall include a directly proportional amount of the Contractor's overhead and profit.
 - b. For items on which progress payments will be requested for stored materials not paid for, breakdown the value into:
 - 1) The cost of the materials, delivered and unloaded, with taxes paid.
 - 2) The total installed value
4. The sum of all values listed in the schedule shall equal the total contract sum.

1.03 APPLICATION FOR PAYMENT

- A. Submit three copies of each Application for Payment on AIA G702 - Application and Certificate for Payment and AIA G703 - Continuation Sheet for G702. with all copies containing original signatures and notarization as required. The forms included at the end of this section must be used for pay requests. (See Samples)
- B. The Item and Description columns in the AIA G703 form must be filled out to follow the Contract bid sheets which may be abbreviated (use as many as required). A computer generated form may be substituted for the AIA forms.
- C. Sworn Statement for Contractor and Subcontractor to Owner, #589 or 3619, by the F.R. Walker Company. The Sworn Statement must be submitted with each request showing all sub-contractors with amounts being requested for each. This will be the basis for waivers to be submitted during each subsequent pay request.
- D. Content and Format: Use Schedule of Values for listing items in Application for Payment.
- E. Submit information in typewritten form
- F. Execute certification by signature of authorized officer.
- G. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed and for stored products.
- H. List each authorized Change Order as a separate line item, listing Change Order number and dollar amount as for an original item of work.
- I. Submit three copies of each application for payment.
- J. Include three copies of the following with the application:
 1. Partial release of liens from all Subcontractors and vendors from previous payout.
 2. Partial release of lien from General Contractor for current pay request.
 3. Contractor's Sworn Statement for the Contract Price.
 4. Certified Payroll.
- K. When Landscape Architect requires substantiating information, submit data justifying dollar amounts in question. Provide one copy of data with cover letter for each copy of submittal. Show application number and date, and line item by number and description.
- L. Submit updated construction schedule with each Application for Payment.

- M. Payment Period: monthly.
- N. Submit submittals with transmittal letter as specified in Section 01 33 00 - Submittal Procedures.
 - 1. Construction Progress Schedule, revised and current as specified in Section 01 33 00 - Submittal Procedures.

1.04 CHANGE PROCEDURES

- A. Submittals: Submit name of individual who is authorized to receive change documents and is responsible for informing others in Contractor's employ or Subcontractors of changes to the Work.
- B. Landscape Architect will advise of minor changes in the Work not involving adjustment to Contract Sum/Price or Contract Time by issuing supplemental instructions.
- C. Landscape Architect may issue Proposal Request including a detailed description of proposed change with supplementary or revised Drawings and Specifications, a change in Contract Time for executing the change and with the period of time during which the requested price will be considered valid. Contractor will prepare and submit estimate within 7 days.
- D. Contractor may propose changes by submitting a request for change to Landscape Architect, describing proposed change and its full effect on the Work. Include a statement describing reason for the change and the effect on Contract Sum/Price and Contract Time with full documentation.
- E. Change Order Forms: AIA G701 - Change Order.
- F. Execution of Change Orders: Landscape Architect will issue Change Orders for signatures of parties as provided in Conditions of the Contract.
- G. Correlation of Contractor Submittals:
 - 1. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as separate line item and adjust Contract Sum/Price.
 - 2. Promptly revise Progress Schedules to reflect change in Contract Time, revise subschedules to adjust times for other items of Work affected by the change, and resubmit.
 - 3. Promptly enter changes in Record Documents.

1.05 APPLICATION FOR FINAL PAYMENT

- A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted contract sum, previous payments, and sum remaining due.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION - Not Used

END OF SECTION

Application and Certificate for Payment

TO OWNER: Owner's Name Owner's Address Owner's city, state and ZIP code	PROJECT: Project Name Project location or address VIA ARCHITECT:	APPLICATION NO: Applic. # PERIOD TO: CONTRACT FOR: CONTRACT DATE: PROJECT NOS: / /	Distribution to: OWNER <input type="checkbox"/> ARCHITECT <input type="checkbox"/> CONTRACTOR <input type="checkbox"/> FIELD <input type="checkbox"/> OTHER <input type="checkbox"/>
FROM CONTRACTOR: Contractor's Name Contractor's Address Contractor's city, state and ZIP			

CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment, as shown below, in connection with the Contract. AIA Document G703™, Continuation Sheet, is attached.

1. ORIGINAL CONTRACT SUM \$ _____
2. NET CHANGE BY CHANGE ORDERS \$ _____
3. CONTRACT SUM TO DATE (Line 1 ± 2) \$ _____
4. TOTAL COMPLETED & STORED TO DATE (Column G on G703) \$ _____
5. RETAINAGE:
 - a. _____ % of Completed Work
(Columns D + E on G703) \$ _____
 - b. _____ % of Stored Material
(Column F on G703) \$ _____

Total Retainage (Lines 5a + 5b, or Total in Column I of G703)..... \$ _____
6. TOTAL EARNED LESS RETAINAGE \$ _____
(Line 4 minus Line 5 Total)
7. LESS PREVIOUS CERTIFICATES FOR PAYMENT \$ _____
(Line 6 from prior Certificate)
8. CURRENT PAYMENT DUE \$
9. BALANCE TO FINISH, INCLUDING RETAINAGE
(Line 3 minus Line 6) \$ _____

CHANGE ORDER SUMMARY	ADDITIONS	DEDUCTIONS
Total changes approved in previous months by Owner	\$	\$
Total approved this month	\$	\$
TOTAL	\$	\$
NET CHANGES by Change Order	\$	

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR:

By: _____ Date: _____

State of: _____

County of: _____

Subscribed and sworn to before
me this _____ day of _____

Notary Public:

My commission expires: _____

ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising this application, the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contract or is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED \$ _____

(Attach explanation if amount certified differs from the amount applied. Initial all figures on this Application and on the Continuation Sheet that are changed to conform with the amount certified.)

ARCHITECT:

By: _____ Date: _____

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.

CONTINUATION SHEET

AIA Document G702, APPLICATION AND CERTIFICATE FOR PAYMENT, containing Contractor's signed Certification is attached.
 In tabulations below, amounts are stated to the nearest dollar.
 Use Column I on Contracts where variable retainage for line items may apply.

APPLICATION NUMBER:
 APPLICATION DATE:
 PERIOD TO:
 ARCHITECT'S PROJECT NO:

A ITEM NO.	B DESCRIPTION OF WORK	C SCHEDULED VALUE	D WORK COMPLETED		F MATERIALS PRESENTLY STORED (NOT IN D OR E)	G		H BALANCE TO FINISH (C - G)	I RETAINAGE
			FROM PREVIOUS APPLICATION (D + E)	THIS PERIOD		TOTAL COMPLETED AND STORED TO DATE (D + E + F)	% (G + C)		

SAMPLE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for unit prices.
- B. Related Sections include the following:
 - 1. Division 1 Section "Contract Modification Procedures" for procedures for submitting and handling Change Orders.

1.3 DEFINITIONS

- A. Unit price is an amount proposed by bidders, stated on the Bid Form, as a price per unit of measurement for materials or services added to or deducted from the Contract Sum by appropriate modification, if estimated quantities of Work required by the Contract Documents are increased or decreased.

1.4 PROCEDURES

- A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.
- B. Measurement and Payment: Refer to Division 0 and/or individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.
- C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.
- D. List of Unit Prices: A list of unit prices is included in the Bid Proposal Form. Specification Sections should be referenced in preparing unit prices which contain requirements for materials described under each unit price.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 LIST OF UNIT PRICES

A. Unit Price Schedule: See Bid Proposal Form

END OF SECTION 01270

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Preconstruction meeting.
- B. Progress meetings.
- C. Closeout meeting.

1.2 PRECONSTRUCTION MEETING

- A. Architect/Engineer will schedule and preside over meeting after Notice of Award.
- B. Attendance Required: Architect/Engineer, Owner, Resident Project Representative, Contractor and major Subcontractors as directed by the contractor.
- C. Minimum Agenda:
 - 1. Execution of Owner-Contractor Agreement.
 - 2. Submission of executed bonds and insurance certificates.
 - 3. Distribution of Contract Documents.
 - 4. Submission of list of Subcontractors, list of products, schedule of values, and Progress Schedule.
 - 5. Designation of personnel representing parties in Contract, and Architect/Engineer.
 - 6. Communication procedures.
 - 7. Procedures and processing of requests for interpretations, field decisions, field orders, submittals, substitutions, Applications for Payments, proposal request, Change Orders, and Contract closeout procedures.
 - 8. Scheduling.
 - 9. Housekeeping procedures.
 - 10. Security procedures.
- D. Contractor: Record minutes and distribute copies to participants within four days after meeting, with three copies each to Architect/Engineer, Owner, and those affected by decisions made.

1.3 PROGRESS MEETINGS

- A. Schedule Regular Meetings at a time and place to be determined at the Pre-Construction Conference. Special meetings may be held on an as-needed basis.
- B. Attendance Required: Job superintendent, major Subcontractors Contractors and suppliers, and Architect/Engineer, Owner, as appropriate to agenda topics for each meeting.
- C. Location of Meetings: As indicated in notice.

- D. Minimum Agenda:
1. Review minutes of previous meetings.
 2. Review of Work progress.
 3. Field observations, problems, and decisions.
 4. Identification of problems impeding planned progress.
 5. Review of submittal schedule and status of submittals.
 6. Review of off-Site fabrication and delivery schedules.
 7. Corrective measures to regain projected schedules.
 8. Planned progress during succeeding work period.
 9. Coordination of projected progress.
 10. Maintenance of quality and work standards.
 11. Effect of proposed changes on Progress Schedule and coordination.
 12. Other business relating to Work.
- E. Contractor: Record minutes and distribute copies to participants within four days after meeting, with three copies each to Architect/Engineer, Owner, and those affected by decisions made.

1.4 CLOSEOUT MEETING

- A. Schedule Project closeout meeting with sufficient time to prepare for requesting Substantial Completion. Preside over meeting and be responsible for minutes.
- B. Attendance Required: Contractor,, Architect/Engineer, Owner, and others appropriate to agenda.
- C. Notify Architect/Engineer four days in advance of meeting date.
- D. Minimum Agenda:
1. Start-up of facilities and systems.
 2. Operations and maintenance manuals.
 3. Testing, adjusting, and balancing.
 4. System demonstration and observation.
 5. Operation and maintenance instructions for Owner's personnel.
 6. Contractor's inspection of Work.
 7. Contractor's preparation of an initial "punch list."
 8. Procedure to request Architect/Engineer inspection to determine date of Substantial Completion.
 9. Completion time for correcting deficiencies.
 10. Inspections by authorities having jurisdiction.
 11. Certificate of Occupancy and transfer of insurance responsibilities.
 12. Partial release of retainage.
 13. Final cleaning.
 14. Preparation for final inspection.
 15. Closeout Submittals:
 - a. Project record documents.
 - b. Operating and maintenance documents.

- c. Operating and maintenance materials.
 - d. Affidavits.
 - 16. Final Application for Payment.
 - 17. Contractor's demobilization of Site.
 - 18. Maintenance.
- E. Record minutes and distribute copies to participants within four days after meeting, with three copies each to Architect/Engineer, Owner, and those affected by decisions made.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION

END OF SECTION

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Construction Schedule.

1.02 RELATED SECTIONS

- A. General Conditions of the Contract
- B. Supplementary Conditions of the Contract
- C. Special Provisions of the Contract
- D. Owner – Contractor Agreement
- E. Section 01 10 00 - Summary
- F. Section 01 70 00 - Execution and Closeout Requirements

1.03 CONSTRUCTION SCHEDULE

- A. Promptly Within 10 days after date of Owner-Contractor Agreement, submit proposed preliminary estimated construction progress schedule including sub-schedules of related activities essential to progress of the Work.
- B. If preliminary schedule requires revision after review, submit revised schedule within 10 days
- C. Within 20 days after review of preliminary schedule, submit draft of proposed complete schedule for review.
 - 1. Include written certification that major contractors have reviewed and accepted proposed schedule.
 - 2. Within 10 days after joint review, submit complete schedule.
 - 3. Submit updated schedule with each application for payment.

1.04 QUALITY ASSURANCE

- A. Scheduler: Contractor's personnel or specialist consultant with one year minimum experience in scheduling construction work of a complexity comparable to this project, and having use of computer facilities capable of delivering a detailed graphic printout within 48 hours of request.
- B. Contractor's Administrative Personnel: 2 years minimum experience in using and monitoring schedules on comparable projects.

1.05 BAR CHART SCHEDULES

- A. Format: Bar chart Schedule, to include at least:
- B. Include a separate bar for each major portion of work or operation.

- C. Identify the first work day of each week.
- D. Identification and listing in chronological order of those activities reasonably required to complete the Work, including:
 - 1. Subcontract Work.
 - 2. Major equipment design, fabrication, factory testing, and delivery dates including required lead times.
 - 3. Move-in and other preliminary activities.
 - 4. Equipment and equipment system test and startup activities.
 - 5. Project closeout and cleanup.
 - 6. Work sequences, constraints, and milestones.
 - 7. Diagram Sheet Size:
 - a. Maximum 22 x 17 inches or width required.
 - b. Sheet Size: Multiples of 8-1/2 x 11 inches.
 - 8. Scale and Spacing: To allow for notations and revisions.
- E. Identification of the following:
 - 1. Horizontal time frame by year, month, and week.
 - 2. Duration, early start, and completion for each activity and subactivity.
 - 3. Critical activities and Project float.
 - 4. Subschedules to further define critical portions of Work.
- F. Preliminary Schedule
 - 1. Prepare preliminary schedule in the form of a horizontal bar chart.
- G. Content
 - 1. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.
 - 2. Identify each item by specification section number.
 - 3. Identify work of separate stages and other logically grouped activities.
 - 4. Provide sub-schedules for each stage of work.
 - 5. Provide sub-schedules to define critical portions of the entire schedule.
 - 6. Include conferences and meetings in schedule
 - 7. Show accumulated percentage of completion of each item, and total percentage of work completed, as of the first day of each month.
 - 8. Provide separate schedule of submittal dates for shop drawings, product data, and samples, owner-furnished products. Products identified under allowances, and

dates reviewed submittals will be required from Landscape Architect. Indicate decision dates for selection of finishes.

9. Indicate delivery dates for owner-furnished products.
10. Coordinate content with schedule of values specified in this Section.
11. Provide legend for symbols and abbreviations used.

1.06 REVIEW AND EVALUATION

- A. Participate in joint review and evaluation of schedules with Landscape Architect at each submittal.
- B. Evaluate Project status to determine Work behind schedule and Work ahead of schedule.
- C. After review, revise schedules incorporating results of review, and resubmit within 10 days.

1.07 UPDATING SCHEDULES

- A. Maintain schedules to record actual start and finish dates of completed activities.
- B. Indicate progress of each activity to date of revision, with projected completion date of each activity. Update schedules to depict current status of Work.
- C. Identify activities modified since previous submittal, major changes in Work, and other identifiable changes.
- D. Upon approval of a Change Order, include the change in the next schedule submittal.
- E. Indicate changes required to maintain Date of Substantial Completion.
- F. Submit sorts as required to support recommended changes.
- G. Prepare narrative report to define problem areas, anticipated delays, and impact on schedule. Report corrective action taken or proposed and its effect including effects of changes on schedules of separate Contractors.

1.08 DISTRIBUTION

- A. Following joint review, distribute copies of updated schedules to Contractor's Project site file, to Subcontractors, suppliers, Landscape Architect, Owner, and other concerned parties.
- B. Instruct recipients to promptly report, in writing, problems anticipated by projections shown in schedules.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION - Not Used

END OF SECTION

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Submittal procedures.
- B. Product data.
- C. Use of electronic CAD files of Project Drawings.
- D. Shop Drawings.
- E. Samples.
- F. Design data.
- G. Test reports.
- H. Manufacturer's instructions.
- I. Contractor review.

1.02 SUBMITTAL PROCEDURES

- A. Sequentially number transmittal forms. Mark revised submittals with original number and sequential alphabetic suffix.
- B. Identify: Project, Contractor, Subcontractor and supplier, pertinent Drawing and detail number, and Specification Section number appropriate to submittal.
- C. Apply Contractor's stamp, signed or initialed, certifying that review, approval, verification of products required, field dimensions, adjacent construction Work, and coordination of information is according to requirements of the Work and Contract Documents.
- D. Schedule submittals to expedite Project, and deliver to Landscape Architect at business address. All submittals shall be received by the Landscape Architect within 30 days. Coordinate submission of related items.
- E. For each submittal for review, allow 15 days excluding delivery time to and from Contractor.
- F. Identify variations in Contract Documents and product or system limitations that may be detrimental to successful performance of completed Work.
- G. Allow space on submittals for Contractor and Landscape Architect review stamps.
- H. When revised for resubmission, identify changes made since previous submission.
- I. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report inability to comply with requirements.
- J. Submittals not requested will not be recognized nor processed.

- K. Incomplete Submittals: Landscape Architect will not review. Complete submittals for each item are required. Delays resulting from incomplete submittals are not the responsibility of Landscape Architect.

1.03 PRODUCT DATA

- A. Product Data: Action Submittal: Submit to Landscape Architect for review for assessing conformance with information given and design concept expressed in Contract Documents.
- B. Submit number of copies Contractor requires, plus two copies Landscape Architect will retain.
- C. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- D. Indicate product utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- E. After review, produce copies and distribute according to "Submittal Procedures" Article and for record documents described in Section 01 70 00 - Execution and Closeout Requirements.

1.04 ELECTRONIC CAD FILES OF PROJECT DRAWINGS

- A. Electronic CAD Files of Project Drawings: May only be used to expedite production of Shop Drawings for the Project. Use for other Projects or purposes is not allowed.
- B. Electronic CAD Files of Project Drawings: Distributed only under the following conditions:
 - 1. Use of files is solely at receiver's risk. Landscape Architect does not warrant accuracy of files. Receiving files in electronic form does not relieve receiver of responsibilities for measurements, dimensions, and quantities set forth in Contract Documents. In the event of ambiguity, discrepancy, or conflict between information on electronic media and that in Contract Documents, notify Landscape Architect of discrepancy and use information in hard-copy Drawings and Specifications.
 - 2. CAD files do not necessarily represent the latest Contract Documents, existing conditions, and as-built conditions. Receiver is responsible for determining and complying with these conditions and for incorporating addenda and modifications.
 - 3. User is responsible for removing information not normally provided on Shop Drawings and removing references to Contract Documents. Shop Drawings submitted with information associated with other trades or with references to Contract Documents will not be reviewed and will be immediately returned.
 - 4. Receiver shall not hold Landscape Architect responsible for data or file clean-up required to make files usable, nor for error or malfunction in translation, interpretation, or use of this electronic information.
 - 5. Receiver shall understand that even though Landscape Architect has computer virus scanning software to detect presence of computer viruses, there is no guarantee that computer viruses are not present in files or in electronic media.

6. Receiver shall not hold Landscape Architect responsible for such viruses or their consequences, and shall hold Landscape Architect harmless against costs, losses, or damage caused by presence of computer virus in files or media.

1.05 SHOP DRAWINGS

- A. Shop Drawings: Action Submittal: Submit to Landscape Architect for assessing conformance with information given and design concept expressed in Contract Documents.
- B. Indicate special utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- C. When required by individual Specification Sections, provide Shop Drawings signed and sealed by a professional Engineer responsible for designing components shown on Shop Drawings.
 1. Include signed and sealed calculations to support design.
 2. Submit Shop Drawings and calculations in form suitable for submission to and approval by authorities having jurisdiction.
 3. Make revisions and provide additional information when required by authorities having jurisdiction.
- D. Submit in form of one reproducible transparency and two opaque reproductions.
- E. After review, produce copies and distribute according to "Submittal Procedures" Article and for record documents described in Section 01 70 00 - Execution and Closeout Requirements.

1.06 SAMPLES

- A. Samples: Action Submittal: Submit to Landscape Architect for assessing conformance with information given and design concept expressed in Contract Documents.
- B. Samples for Selection as Specified in Product Sections:
 1. Submit to Landscape Architect for aesthetic, color, and finish selection.
 2. Submit Samples of finishes, textures, and patterns for Landscape Architect selection.
- C. Submit Samples to illustrate functional and aesthetic characteristics of products, with integral parts and attachment devices. Coordinate Sample submittals for interfacing work.
- D. Include identification on each Sample, with full Project information.
- E. Submit number of Samples specified in individual Specification Sections; Landscape Architect will retain one Sample.
- F. Reviewed Samples that may be used in the Work are indicated in individual Specification Sections.

- G. Samples will not be used for testing purposes unless specifically stated in Specification Section.
- H. After review, produce copies and distribute according to "Submittal Procedures" Article and for record documents described in Section 01 70 00 - Execution and Closeout Requirements.

1.07 TEST REPORTS

- A. Informational Submittal: Submit reports for Landscape Architect's knowledge as Contract administrator or for Owner.
- B. Submit test reports for information for assessing conformance with information given and design concept expressed in Contract Documents.

1.08 MANUFACTURER'S INSTRUCTIONS

- A. Informational Submittal: Submit manufacturer's installation instructions for Landscape Architect's knowledge as Contract administrator or for Owner.
- B. Submit printed instructions for delivery, storage, assembly, installation, startup, adjusting, and finishing, to Landscape Architect in quantities specified for Product Data.
- C. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

1.09 CONTRACTOR REVIEW

- A. Review for compliance with Contract Documents and approve submittals before transmitting to Landscape Architect.
- B. Contractor: Responsible for:
 - 1. Determination and verification of materials including manufacturer's catalog numbers.
 - 2. Determination and verification of field measurements and field construction criteria.
 - 3. Checking and coordinating information in submittal with requirements of Work and of Contract Documents.
 - 4. Determination of accuracy and completeness of dimensions and quantities.
 - 5. Confirmation and coordination of dimensions and field conditions at Site.
 - 6. Construction means, techniques, sequences, and procedures.
 - 7. Safety precautions.
 - 8. Coordination and performance of Work of all trades.
- C. Stamp, sign or initial, and date each submittal to certify compliance with requirements of Contract Documents.
- D. Do not fabricate products or begin Work for which submittals are required until approved submittals have been received from Landscape Architect.

PART 2 - EXECUTION - Not Used

END OF SECTION

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Quality control.
- B. References.
- C. Mockup requirements.
- D. Testing and inspection services.

1.2 QUALITY CONTROL

- A. Monitor quality control over suppliers, manufacturers, products, services, Site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with specified standards as the minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- C. Perform Work using persons qualified to produce required and specified quality.
- D. Products, materials, and equipment may be subject to inspection by Architect/Engineer and Owner at place of manufacture or fabrication. Such inspections shall not relieve Contractor of complying with requirements of Contract Documents.
- E. Supervise performance of Work in such manner and by such means to ensure that Work, whether completed or in progress, will not be subjected to harmful, dangerous, damaging, or otherwise deleterious exposure during construction period.

1.3 REFERENCES

- A. For products or workmanship specified by association, trade, or other consensus standards, comply with requirements of standard except when more rigid requirements are specified or are required by applicable codes.
- B. Obtain copies of standards and maintain on Site when required by product Specification Sections.
- C. When requirements of indicated reference standards conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.
- D. Neither contractual relationships, duties, or responsibilities of parties in Contract nor those of Architect/Engineer shall be altered from Contract Documents by mention or inference in reference documents.

1.4 MOCK-UP REQUIREMENTS

- A. Tests will be performed under provisions identified in this Section and identified in individual product Specification Sections.
- B. Assemble and erect specified or indicated items with specified or indicated attachment and anchorage devices, flashings, seals, and finishes.
- C. Accepted mockups shall be comparison standard for remaining Work.
- D. Where mockup has been accepted by Architect/Engineer and is specified in product Specification Sections to be removed, remove mockup and clear area when directed to do so by Architect/Engineer.

1.5 TESTING AND INSPECTION SERVICES

- A. The Contractor shall furnish samples of materials for testing, if requested by the Landscape Architect, at no additional cost. Tests by the Landscape Architect will be made in accordance with commonly recognized standards of national materials testing organizations and any such other special methods as deemed necessary.
- B. Ant and all materials necessary for the construction of any part of the work and associated improvements not specified shall be of the best available quality acceptable to the Landscape Architect.
- C. Employment of testing agency or laboratory shall not relieve Contractor of obligation to perform Work according to requirements of Contract Documents.
- D. Retesting or re-inspection required because of nonconformance with specified or indicated requirements shall be performed by same independent firm on instructions from Architect/Engineer. Payment for retesting or re-inspection will be charged to Contractor.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Temporary Utilities:
 - 1. Temporary electricity.
 - 2. Temporary water service.
 - 3. Temporary sanitary facilities.
- B. Construction Facilities:
 - 1. Vehicular access.
 - 2. Parking.
 - 3. Progress cleaning and waste removal.
 - 4. Project identification.
 - 5. Traffic regulation.
- C. Temporary Controls:
 - 1. Barriers.
 - 2. Enclosures and fencing.
 - 3. Portable Temporary Panels (Chain Link)
 - 4. Security.
 - 5. Water control.
 - 6. Dust control.
 - 7. Erosion and sediment control.
 - 8. Pollution control.
- D. Removal of utilities, facilities, and controls.

1.02 RELATED SECTIONS

- A. Section 01 70 00 - Execution and Closeout Requirements
- B. Section 31 22 13 - Rough Grading
- C. Section 32 93 10 - Tree and Plant Protection

1.03 COMPLIANCE

- A. Comply with OSHA laws, rules, and regulations

1.04 REFERENCES

- A. Illinois Department of Transportation (IDOT) Standard Specifications for Road and Bridge Construction (Standard Specifications)

1.05 TEMPORARY ELECTRICITY – (CONTRACTOR'S OPTION)

A. Provide:

1. Power centers for miscellaneous tools and equipment used in construction work.
 - a. Locate so that power is available at any desired point with no more than 100 foot extension.
 - b. Provide weatherproof distribution box with minimum of four 20-amp, 120-volt grounded outlets.
 - c. Provide circuit protection for each outlet.
 - d. Provide equipment grounding continuity for entire system.
 - e. Provide ground fault protection in accordance with OSHA requirements.
 - f. Users shall provide grounded UL listed extension cords and other accessories from power center(s) to point of operation.
2. Power for construction.
3. Power for temporary lighting.
4. Power for pumping.
5. Power for testing and checking equipment.
6. Power for welding units and for other equipment having special power requirement.
7. Capacity:
 - a. Adequate electrical service for construction use by all trades during construction period.
 - b. Notify power company if unusually heavy loads, such as welding, and other equipment with special power requirements, will be connected.
 - 1) Provide special circuits for heavy load requirements.
 - 2) Do not overload any circuit.

B. Power Source:

1. Supplier: Commonwealth Edison.
2. Provide minimum 110-220 volt, 100 amp., single phase, 60 cycle power service.
3. Contractor may provide temporary generator(s) in lieu of connecting to power company if he determines that the supply will be adequate.

C. Maintain strict supervision of use of temporary services.

1. Enforce conformance with applicable standards.
 2. Enforce safe practices.
 3. Prevent abuse of services.
- D. Cost of installation and operation:
1. Pay all costs of temporary electricity, including costs of installation, maintenance and removal of temporary services.
 2. Pay costs of temporary electrical power used.
 3. Pay costs of power used from permanent wiring until final acceptance of project.
 4. Should Owner occupy part of facility during construction, power costs will be shared proportionately.
 5. Provide meter for temporary electrical power used to maintain Owner's occupancy.
- E. Requirements of Regulatory Agencies:
1. Obtain and pay for permits as required by governing authorities.
 2. Obtain and pay for temporary easements required across property, other than that of Owner.
 3. Comply with applicable codes:
 - a. National Electrical Code. (NASI C1)
 - b. National Electrical Safety Code.
 - c. National Fire Protection Association Pamphlet.
 - d. Federal, State and local codes and utility company regulations.
- F. Use of permanent system:
1. Secure Owner's written permission for connection and use of system, indicating conditions for use.
 2. Modify and extend system as necessary to meet temporary electricity requirements.
- G. Upon completion of work, restore permanent system to specified condition.

1.06 TEMPORARY WATER SERVICE

- A. Drinking water:
1. Provide adequate drinking water in portable containers for all employees.
- B. Dust Control:
1. Supply water required for dust control, irrigation and for other construction needs
 2. Supply all hoses, connectors and miscellaneous appurtenances necessary.
 3. Make arrangements with the local authority for meters, permits, fees.

C. Landscape Plantings:

1. The Contractor will be responsible for supplying all hoses, connectors and miscellaneous appurtenances necessary to water seed/sod areas or landscape plantings. The Contractor must make arrangements with the Owner for water usage.

1.07 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required facilities and enclosures. Existing facility use is not permitted. Provide facilities at time of Project mobilization.
- B. Pay costs of temporary sanitary facilities, including costs of installation, maintenance and removal.
- C. Pay service charges for use of portable units.
- D. Maintain strict supervision of facilities:
 - a. Enforce conformance with applicable codes and standards.
 - b. Maintain, service and clean facilities.
 - c. Enforce proper use of sanitary facilities.
- E. Location shall be approved in advance by Owner.

1.08 VEHICULAR ACCESS

- A. Construct temporary access roads from public thoroughfares to serve construction area, of width and load-bearing capacity to accommodate unimpeded traffic for construction purposes.
- B. Construct temporary bridges and culverts to span low areas and allow unimpeded drainage.
- C. Extend and relocate vehicular access as Work progress requires and provide detours as necessary for unimpeded traffic flow.
- D. Locate as indicated on Drawings.
- E. Provide unimpeded access for emergency vehicles. Maintain 20 foot-wide driveways with turning space between and around combustible materials.
- F. Provide and maintain access to fire hydrants free of obstructions.
- G. Provide means of removing mud from vehicle wheels before entering streets.
- H. Use designated existing on-Site roads for construction traffic.

1.09 PARKING

- A. Arrange for temporary surface parking areas to accommodate construction personnel.
- B. Locate as approved by Owner.
- C. If Site space is not adequate, provide additional off-Site parking.

- D. Use of designated areas of existing on-Site streets and driveways used for construction traffic is permitted. Tracked vehicles are not allowed on paved areas.
- E. Use of designated areas of existing parking facilities used by construction personnel is permitted.
- F. Do not allow heavy vehicles or construction equipment in parking areas.
- G. Do not allow vehicle parking on existing pavement except in designated areas..
- H. Designate one parking space for Landscape Architect.
- I. Permanent Pavements and Parking Facilities:
 - 1. Before Substantial Completion, bases for permanent roads and parking areas may be used for construction traffic.
 - 2. Avoid traffic loading beyond paving design capacity. Tracked vehicles are not allowed.
 - 3. Use of permanent parking structures is not permitted.
- J. Maintenance:
 - 1. Maintain traffic and parking areas in sound condition free of excavated material, construction equipment, products, mud, snow, ice, and the like.
 - 2. Maintain existing and permanent paved areas used for construction; promptly repair breaks, potholes, low areas, standing water, and other deficiencies, to maintain paving and drainage in original condition.
- K. Removal, Repair:
 - 1. Remove temporary materials and construction when permanent paving is usable.
 - 2. Remove underground Work and compacted materials to depth of 2 feet; fill and grade Site as indicated.
 - 3. Repair existing permanent facilities damaged by use, to original condition.
- L. Mud from Site vehicles: Provide means of removing mud from vehicle wheels before entering streets.

1.10 PROGRESS CLEANING AND WASTE REMOVAL

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain Site in clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, before enclosing spaces.
- C. Broom and vacuum clean interior areas before starting surface finishing, and continue cleaning to eliminate dust.
- D. Collect and remove waste materials, debris, and rubbish from Site weekly and dispose of off-Site.

- E. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

1.11 PROJECT IDENTIFICATION

A. Project Identification Sign:

1. One painted sign[s] of construction, design, and content shown on Drawings, location designated.
2. Content:
 - a. Project number, title, logo, and name of Owner.
 - b. Names and titles of authorities.
 - c. Names and titles of Planning Resources Inc. and Consultants.
 - d. Name of General Contractor.
3. Graphic Design, Colors, and Style of Lettering: Designated by Landscape Architect.

B. Design sign and structure to withstand 60-mph wind velocity.

C. Sign Painter: Experienced as professional sign painter for minimum of three years.

D. Finishes, Painting: Adequate to withstand weathering, fading, and chipping for duration of construction.

E. Show content, layout, lettering, color, foundation, structure, sizes, and grades of members.

F. Sign Materials:

1. Structure and Framing: New or Used wood, structurally adequate.
2. Sign Surfaces: Exterior grade plywood with medium-density overlay, minimum of 3/4 inches thick, standard large sizes to minimize joints.
3. Rough Hardware: Galvanized aluminum or brass.
4. Paint and Primers: Exterior quality, one coat; sign background of white color as selected.
5. Lettering: Exterior quality paint, contrasting colors as selected.

G. Installation:

1. Install Project identification sign within 30 days after date established by Notice to Proceed.
2. Erect at designated location.
3. Erect supports and framing on secure foundation, rigidly braced and framed to resist wind loadings.
4. Install sign surface plumb and level, with butt joints. Anchor securely.

5. Paint exposed surfaces of sign, supports, and framing.
- H. Maintenance: Maintain clean signs and supports; repair deterioration and damage.
- I. Removal: Remove signs, framing, supports, and foundations at completion of Project and restore area.

1.12 TRAFFIC REGULATION

A. Signs, Signals, and Devices:

1. Post-Mounted and Wall-Mounted Traffic Control and Informational Signs: As approved by authorities having jurisdiction.
2. Traffic Control Signals: As approved by local jurisdictions.
3. Traffic Cones, Drums, Flares, and Lights: As approved by authorities having jurisdiction.
4. Flag Person Equipment: As required by authorities having jurisdiction.

B. Flag Persons: Provide trained and equipped flag persons to regulate traffic when construction operations or traffic encroach on public traffic lanes.

C. Flares and Lights: Use flares and lights during hours of low visibility to delineate traffic lanes and to guide traffic.

D. Haul Routes:

1. Consult with authorities having jurisdiction and establish public thoroughfares to be used for haul routes and Site access.
2. Confine construction traffic to designated haul routes acceptable to local authorities.
3. Provide traffic control at critical areas of haul routes to regulate traffic and to minimize interference with public traffic.

E. Traffic Signs and Signals:

1. Provide signs at approaches to Site and on Site, at crossroads, detours, parking areas, and elsewhere as needed to direct construction and affected public traffic.
2. Provide, operate, and maintain traffic control signals to direct and maintain orderly flow of traffic in areas under Contractor's control and areas affected by Contractor's operations.
3. Relocate signs and signals as Work progresses, to maintain effective traffic control.

F. Removal:

1. Remove equipment and devices when no longer required.
2. Repair damage caused by installation.
3. Remove post settings to depth of 2 feet.

1.13 BARRIERS

- A. Provide and maintain adequate barriers, fences, or other structures necessary to protect the public from accidental injury resulting from actions of the Contractor or condition of the work site.
- B. Place solid physical barricades around all holes or trenches which remain open overnight.
- C. Any unsafe areas discovered by the Owner to have been left by the Contractor without appropriate barricades may be corrected by the Owner at the cost of \$100 per person hour, back charged to the Contractor.
 - 1. This right of the Owner shall not create any obligation by, or liability of the Owner to discover and correct such deficiencies.
 - 2. It being understood that the obligation to provide appropriate barricades shall remain at all times the sole obligation of the Contractor.
- D. Provide barriers to prevent unauthorized entry to construction areas [, to allow for Owner's use of Site,] and to protect existing facilities and adjacent properties from damage from construction operations [and demolition].
- E. The Contractor shall confine his equipment, the storage of materials, and the equipment and the operation of all personnel to limits indicated by the Landscape Architect.
- F. Tree and Plant Protection: Preserve and protect existing trees and plants designated to remain.
 - 1. Protect areas within drip lines from traffic, parking, storage, dumping, chemically injurious materials and liquids, ponding, and continuous running water.
 - 2. Provide 4-foot-high barriers around drip line, with access for maintenance.
 - 3. Comply with Orange Safety Fence requirements of this Section or per municipality ordinance.
 - 4. Comply with Section 32 93 10 - Tree and Plant Protection
 - 5. Replace trees and plants damaged by construction operations.
- G. Protect non-owned vehicular traffic, stored materials, Site, and structures from damage.

1.14 ENCLOSURES AND FENCING

- A. Construction: Commercial-grade chain-link fence Plastic construction netting or Portable Temporary Panels. See plans
- B. Security fence:
 - 1. Provide and maintain 6-foot-high fence around construction Site as shown on Drawings; equip with vehicular gates with locks.
 - 2. Include all posts, caps, couplings, rails, braces, bottom reinforcing wire, stretcher bars, clips, ties, wire fabric, finish hardware, grounding and necessary accessories.

3. Contractor's option to use acceptable drive anchor posts in lieu of posts with a concrete footings or temporary fence panels.
4. Provide vehicular and pedestrian gates as shown on the Drawings.
5. Remove all security fencing at completion of Work or when directed by Owner.

C. Standards

1. All fencing material shall meet or exceed the requirements of the Chain Link Fence Manufacturer's Institute (CLFMI).

D. Product Handling

1. Do not damage fabric, posts, or rails.

E. Environmental Conditions

1. Concrete footings can be installed only if air temperature is above 40 degrees F.
2. Do not install fencing when site or weather conditions exist, that vehicles, equipment and materials will cause damage to the site or people.

1.15 SECURITY

A. Security Program:

1. Protect Work on existing premises from theft, vandalism, and unauthorized entry.
2. Initiate program in coordination with Owner's existing security system at Project mobilization.
3. Maintain program throughout construction period until Owner occupancy directed by Landscape Architect.

B. Entry Control:

1. Restrict entrance of persons and vehicles to Project Site.
2. Allow entrance only to authorized persons with proper identification.

1.16 WATER CONTROL

A. Grade Site to drain. Maintain excavations free of water. Provide, operate, and maintain necessary pumping equipment.

B. Protect Site from puddles or running water.

1.17 DUST CONTROL

A. Execute Work by methods that minimize raising dust from construction operations.

B. Provide positive means to prevent airborne dust from dispersing into atmosphere.

1.18 EROSION AND SEDIMENT CONTROL

A. Comply with NPDES Permit Requirements.

- B. Comply with sediment and erosion control plan indicated on Drawings (if over one acre in size).
- C. Plan and execute construction by methods to control surface drainage from cuts and fills from borrow and waste disposal areas. Prevent erosion and sedimentation.
- D. Minimize surface area of bare soil exposed at one time.
- E. Provide temporary measures including berms, dikes, drains, and other devices to prevent water flow as necessary or as shown on Drawings.
- F. Construct fill and waste areas by selective placement to avoid erosive surface silts and clays.
- G. Periodically inspect earthwork to detect evidence of erosion and sedimentation. Promptly apply corrective measures.

1.19 POLLUTION CONTROL

- A. Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances and pollutants produced by construction operations.
- B. Comply with pollution and environmental control requirements of authorities having jurisdiction.
- C. Comply with sediment and erosion control plan indicated on Drawings.

1.20 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities, and materials before Substantial Completion inspection.
- B. Remove underground installations to minimum depth of 2 feet. Grade Site as indicated on Drawings.
- C. Clean and repair damage caused by installation or use of temporary Work.
- D. Restore existing and permanent facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

1.21 SUBMITTALS

- A. Comply with Section 01 33 00 – Submittals

1.22 MEASUREMENT AND PAYMENT

- A. Security Fencing:
 - 1. If more or less than the lineal feet indicated in the plans are required for job security as required by the Owner, the agreed UNIT PRICE stated in the Unit Price Schedule will apply.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Chain link Fencing:

1. General

- a. All fencing material shall be new and shall bear a registered "QUALITY SEAL" of the Chain Link Fence Manufacturer's Institute (CLFMI) guaranteeing that the fence meets or exceeds the requirements of the National Standard for Quality chain link fence.
- b. Hot dip galvanize all posts, rails, braces, tension bars and other appurtenances with a minimum zinc coating of 2 ounces per square foot of surface.
- c. Manufacturer's standard items shall be furnished insofar as to the type of fence specified. In general, material shall conform to the applicable requirements of the following standard specifications; and as approved by the chain link fence institute.
- d. All ferrous metals used in the construction of the fence, including the fabric, shall be galvanized.
- e. Fence-Posts, Gates and Accessories - Fed. Spec. RR-F-183
- f. Fencing, Wire and Post, Metal and Gates, Chain-Link Fabric Accessories Fencing, Wire - Fed. Spec. RR-F-00191
- g. Fence Posts and Accessories - Fed. Spec. RR-F-221

2. Security fence:

- a. 6-Foot high or as indicated on the plans
- b. Consist of fabric panels and frame work of standard steel galvanized pipe or H-column posts equal in strength and of standard steel galvanized pipe gate and terminal posts and rails.

3. Posts:

- a. Corner posts and end posts:
 - 1) 2 ½-inch standard steel galvanized pipe
 - 2) 2.875" O.D. @ 5.79 # per foot
 - 3) Length as required
- b. Intermediate posts
 - 1) 2-inch standard steel galvanized pipe
 - 2) 2.375" O.D. @ 3.65 # per foot
 - 3) Length as required.

4. Fabric:

- a. Galvanized chain link type, 2-inch mesh of 9 gauge wire or as indicated on the plans; top and bottom edges of the fabric, shall have knuckle top and bottom; the top edge of fabric shall project above top rail of the fence frame.
 5. Provide post with bracing rails on each side of gate openings, at all corners, angles and changes in direction; space intermediate line posts not more than 10 feet on center.
 6. Top rail:
 - a. Provide continuously between all posts;
 - b. 1 ¼ -inch standard steel galvanized pipe, 1.66" O.D @ 2.27 # per foot.
 7. Bottom:
 - a. Provide reinforcing wire continuously along the bottom of the fence fabric for all fencing.
 8. Gates:
 - a. Swing type, with frame of tubular members with diagonal truss rods and turn buckle.
 - b. Provide complete with heavy duty hinges, and acceptable type locking device adaptable for padlocking and accessible from both sides of the gate
 - c. Provide stops, keepers and all accessories.
 9. Gate posts:
 - a. 2 ½-inch standard steel galvanized pipe, 2.875" O.D. @ 5.79 # per foot set in an 18" diameter x 48" deep concrete footing.
- B. Orange Safety Fence (Snow Fence):
1. General
 - a. All fencing materials shall be new.
 - b. Manufacturer's standard items shall be furnished insofar as to the type of fence specified.
 2. Snow fence, (orange safety fence)
 - a. Resinet SF50 Square Mesh Barrier Heavy Duty Snow Fence or equal as supplied by Discount Fence Supply, Inc. (Telephone # 1.800.878.7829).
 - b. Orange in color, 4'-0" high x 100'-0" long rolls, and meet the following:
 - c. Material:
 - 1) High density polyethylene

- 2) Ultraviolet Resistance: Fully stabilized
 - 3) Temperature Range: - 60 degrees F, to 180 degrees F
 - 4) Tensile Yield: 3200 psi
 - 5) Tensile Strength: 370 lbs. per foot
 - 6) Elongation at Break: 150%
 - 7) Nominal Mesh Opening: 1-1/4" x 1-1/4"
 - 8) Size: 48" x 100'-0"
- d. Posts shall be painted steel T-Posts being a minimum of 72 inches long and having a minimum weight of 7 pounds.
 - e. Snow fence fabric ties shall be plastic zip ties as recommended by the fence manufacturer.

C. Chain Link Portable Temporary Panels

1. Furnish and install 6-foot high x 10-12' wide portable temporary chain link security fence panels with two gates in the construction area.
2. Length and location as shown on Drawings
3. All materials meet or exceed requirements of the Chain Link Fence Manufacturer's Institute (CLFMI).
4. Portable Temporary Panel Fencing Material
 - a. May be previously used material
 - b. Without damage to functional or structural integrity
 - c. Used materials must meet or exceed the requirements of the National Standard for Quality chain link fence.
 - d. Furnish manufacturer's standard items as to type of fence specified.
 - e. Material to conform with Standard Specifications; and as approved by the chain link fence institute.
 - f. All ferrous metals used in the construction of the fence, including the fabric, shall be galvanized.
 - g. Fence-Posts, Gates and Accessories - Fed. Spec. RR-F-183
 - h. Fencing, Wire and Post, Metal and Gates, Chain-Link Fabric Accessories Fencing, Wire - Fed. Spec. RR-F-00191
 - i. Fence Posts and Accessories - Fed. Spec. RR-F-221
5. Portable Chain-Link Fencing Panel:
 - a. Minimum 2-inch 9-gage, galvanized steel, chain-link fabric fencing;

- b. Minimum 6 feet high with galvanized steel pipe posts;
 - c. Minimum 2-3/8-inch- OD line posts and 2-7/8-inch- OD corner and pull posts, with 1-5/8-inch- OD top and bottom rails. Provide galvanized steel bases for supporting posts.
6. Stands shall be hot dipped galvanized steel pipe.
7. Stabilizers
- a. 1 Peg End Stabilizer brackets at the ends of the fence,
 - b. 2 Peg Line Stabilizer brackets to adjoin two temporary fence panels in a continuous line.
8. Gates:
- a. Swing type, with frame of tubular members with diagonal truss rods and turn buckles.
 - b. Provide complete with heavy duty hinges, and acceptable type locking device adaptable for padlocking and accessible from both sides of the gate
 - c. Provide stops, keepers and all accessories.
9. One gate with an overall width of 20'-0" (two leaves) including all posts, couplings, braces, stretcher bars, clips, ties, wire fabric, finish hardware, grounding and all necessary accessories and incidental work.

2.02 MIXES AND PORTIONS

- A. Concrete for gate post installation IDOT Class X 6 bag mix 3500 pounds per square inch.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Prior to start of this work, all lines and grades for fence construction must be acceptable to the Landscape Architect.
- B. Prior to start of this work, flag or field paint the fence location for the approved by the Landscape Architect

3.02 INSTALLATION

- A. General
 - 1. Construct in accordance with all the plans and as specified herein, with new materials.
 - 2. Install plumb, taut, true to line and ground contour, and complete in every detail.
- B. Chain Link Posts

1. Set plumb at not more than 10-foot on center or as shown on the Drawings.
2. Allow concrete to cure minimum 7 days prior to erecting fence fabric.
3. Space not more than 10 feet apart, or as shown on the plans, and set in concrete footings or using approved drive anchors.
4. Concrete footings:
 - a. Bell shaped, 8 inches at the top and 12 inches at the bottom and 36 inches below the ground surface.
5. Gate posts:
 - a. Set in concrete footings 18" in diameter and 48" deep.
 - b. Crown top of the footing to shed water.

C. Chain Link Rails

1. Install as specified herein following standard practices.
2. Run top rail continuously, join with outside sleeve type couplings at least 7 inches long, with expansion couplings at not less than 100 foot intervals.

D. Chain Link Braces

1. Installed at corner and end posts.

E. Chain Link Fabric

1. Tie to the top rail not more than 24-inches on center
2. Tie to line posts not more than 14 inches on center
3. Terminate fabric in same manner as started, using tension bars and bands.

F. Chain Link Gates

1. Install with fittings and hardware as herein specified,
2. Securely fasten and adjust in perfect working order.

G. Chain Link Grounding

1. Ground all fencing at ends or corners.
2. Make connections to the ground to the fence fabric bottom selvage.
3. Ground gates to the gateposts by means of jumpers.
4. Make all connections by means of solderless, non-ferrous connectors.
5. Install top of ground rods at least six inches below finish ground surface and make cable connections at least six inches below top of ground rod.
6. Use No. 8 bare stranded soft drawn cable for all connections between gate, fence, and ground rods.

7. Install ground rods where required
 8. Ground rods to be copper or copper-clad steel, not less than 3/4 inch diameter and length or number of rods shall have a resistance to ground not to exceed 25 ohms.
 9. Install ground rods vertically.
- H. Orange Safety Fence (Snow Fence)
1. General:
 - a. Construct in accordance with all the plans and as specified herein, with new materials. The finished fence shall be plumb, taut, true to line and ground contour, and complete in every detail
 2. Posts Orange Safety Fence:
 - a. Set plumb and spaced not more than 10 feet apart, or as shown on the plans.
 - b. Driven minimum 18-inches below grade with a fence post driver to avoid damage.
 - c. Add additional post at the end of all overlap sections
 - d. Use minimum three fabric ties
 3. Fabric Orange Safety Fence:
 - a. As specified in this Section.
- I. Chain Link Portable Temporary Panels
1. Construct fencing in accordance with all details on the Drawings and as specified herein
 2. Install panels plumb, taut, true to line and ground contour, and complete in every detail.
 3. Rails
 - a. Not required
 4. Stands/Stabilizer Brackets
 5. Shall be installed at the end posts and for adjoining two panels as previously described under Materials - 2.01.
 6. Fabric
 7. Ties on line posts shall be not be more than 12 inches on center. The fabric shall terminate in the same manner as it was started, using tension bars and bands.
 8. Gates
 9. The gates shall be installed with fittings and hardware as herein specified, securely fastened and properly adjusted in perfect working order

J. Removing Security Fence

1. After completion of all construction work and when directed, remove all security fence in such a way that it will not damage the improvements.
2. Demolish and remove from site all concrete footings
3. Dispose of in lawful manner
4. Backfill resulting voids with acceptable fill and compact to match adjacent soil.
5. Top with minimum 6-inches acceptable topsoil and seed as required in Section 32 92 19-Seeding.

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION

This item shall consist of protecting specific, individual, existing trees, shrubs, and plant material not designated for removal which are to remain from construction damage. Such trees, shrubs, and plant materials shall be left in place and protected from damage or injury by the Contractor during construction using full and adequate methods of protection. The trees to remain or individual trees to be protected shall be identified on the drawings or in the field by the Landscape Architect.

1.02 PROCEDURES

A. Individual trees to be protected:

1. These trees shall be identified with surveyor's flagging tape placed around the trunks at eye level.
2. A 4' high snow fence shall be provided, erected and maintained at the drip line of each tree so identified.
3. These protection fences shall be removed after final project acceptance or as required by the Landscape Architect.
4. Water shall not be permitted to pond within the fenced areas at the base of the tree, except as currently occurs.
5. No tree shall be used as an anchorage.

B. Trees to remain:

1. Trees to remain identified either with surveyor's flagging tape or shown in the drawings shall have the following protection procedures apply:
- 2.
3. Work within tree drip lines: where excavating, fill or grading or soil preparation is required within the branch spread (drip line of trees the work shall be performed with care to prevent abrasion or other damage from equipment to tree trunks, limbs, and root systems. Parking or storage of equipment or materials will not be allowed within tree drip lines. Movement of vehicles within tree drip lines shall be limited to that required in the performance of specific work.
- 4.
5. Excavation within tree drip lines: Where excavation is required within tree root zones, the tree roots shall not be severed by the excavation equipment. Rather, the tree roots within a construction area greater than

6. ¼" in diameter shall be cut clean with a pruning clipper, shear or saw. All crushed, torn, frayed or otherwise injured roots shall have these injured portions removed by clean cutting.
7. All digging within the drip line shall be done by hand, except for pavement and curb excavation. For pavement and curb excavation, the Contractor shall dig to within 18" laterally of the desired limit of excavation. The remaining lateral 18" shall be dug by hand.
8. No equipment or vehicles exceeding 1000 lbs. will be allowed within the drip line of any tree for the duration of this contract. Steel planking, or timber planking made of 4" thick material, each plank covering a min. of 8 square feet, shall be used to support backhoe and other equipment stabilizers when set within the drip-line of a tree or sodded planting strip.

1.03 CONSTRUCTION TECHNIQUES

Prior to any site disturbance, it shall be the responsibility of the contractor to install tree protection measures in accordance with plans and specifications prepared by a qualified professional. It is the contractor's responsibility to safeguard the trees designated to be preserved. Throughout planning and construction, the contractor should monitor the effect of the proposed activities on the vegetation to be preserved and maintained.

A. Concerns

The following must not occur within the tree protection areas:

1. Stockpiling of soils
2. Operating or storing construction equipment
3. Regrading causing runoff, flooding, or change of elevation
4. Parking vehicles and storing supplies
5. Spilling of toxic materials
6. Spraying of herbicides in close proximity to protected areas

2.0 REPAIR, REPLACEMENT AND PAYMENT FOR DAMAGE

- A. Trees or other plant material not designated to be removed but that are destroyed or irreparable damaged by Contractor operations as determined by the Landscape Architect, shall be repaired or replaced by the Contractor in accordance with the Landscape Architect's recommendations.
 1. Replacements shall be of the same species and as nearly as possible of the same size as the trees to be replaced.
 2. The Contractor shall allow one (1) Working Day advance notice for inspection of nursery stock replacements by the Landscape Architect.
- B. Payment: In addition to the Contractor's restoration approved by the Landscape Architect, the Contractor will be assessed damages for the difference in the dollar

value of the damaged tree, shrub, or other plant material, and the dollar value of the replacement.

1. The dollar value will be determined by the Landscape Architect from the "Guide for Establishing Values of Trees and Other Plants," prepared by the Council of Tree and Landscape Appraisers, current edition. Damages assessed will be deducted from monies due or that may become due to the Contractor.

- C. Planting of replacement stock shall be done in accordance with the requirements of the Contract Documents during the first fall or spring planting period, whichever comes first.

3.0 TREE PRUNING

Pruning shall conform to ANSI A300, Tree, Shrub and Other Woody Plant Maintenance Standard practices (Pruning). Pruning prescriptions should be developed by a person familiar with tree species for the specific geographic area. Maintenance pruning shall consist of crown cleaning to remove all dead, damaged and weak branches. The removal of selected conflicting branches shall be included. Under no circumstances shall the interior of trees be stripped. Interior branches shall be selectively pruned to reduce conflict or where branches are damaged. Hazard reduction pruning shall consist of the removal of any dead branches and the correction of any other problems related to safety. Items not correctable by pruning shall be brought to the owner's and landscape architect's attention in writing.

END OF SECTION

PART 1 - GENERAL

1.01 RELATED SECTIONS

- A. The Agreement - Time of Final Payment
- B. General Conditions - Completion; Waiver of Claims
- C. Bid Form
- D. 01010 - Summary of Work
- E. Respective Specification Sections - Close-out Submittals Required.

1.02 CLOSEOUT PROCEDURES

- A. Prerequisites to Substantial Completion: Complete following items before requesting Certification of Substantial Completion, either for entire Work or for portions of Work:
 - 1. Submit maintenance manuals, Project record documents, and other similar final record data in compliance with this Section.
 - 2. Complete facility startup, testing, adjusting, balancing of systems and equipment, demonstrations, and instructions to Owner's operating and maintenance personnel as specified in compliance with this Section.
 - 3. Conduct inspection to establish basis for request that Work is substantially complete. Create comprehensive list (initial punch list) indicating items to be completed or corrected, value of incomplete or nonconforming Work, reason for being incomplete, and date of anticipated completion for each item. Include copy of list with request for Certificate of Substantial Completion.
 - 4. Obtain and submit releases enabling Owner's full, unrestricted use of Project and access to services and utilities. Include certificate of occupancy, operating certificates, and similar releases from authorities having jurisdiction and utility companies.
 - 5. Deliver tools, spare parts, extra stocks of material, and similar physical items to Owner.
 - 6. Make final change-over of locks eliminating construction master-key system and transmit keys directly to Owner. Advise Owner's personnel of change-over in security provisions.
 - 7. Discontinue or change over and remove temporary facilities and services from Project Site, along with construction tools, mockups, and similar elements.
 - 8. Perform final cleaning according to this Section.
- B. Prerequisites for Final Completion: Complete following items before requesting final acceptance and final payment.

1. When Contractor considers Work to be complete, submit written certification that:
 - a. Contract Documents have been reviewed.
 - b. Work has been examined for compliance with Contract Documents.
 - c. Work has been completed according to Contract Documents.
 - d. Work is completed and ready for final inspection.
2. Submittals: Submit following:
 - a. Final punch list indicating all items have been completed or corrected.
 - b. Final payment request with final releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
 - c. Specified warranties, workmanship/maintenance bonds, maintenance agreements, and other similar documents.
 - d. Accounting statement for final changes to Contract Sum.
 - e. Contractor's affidavit of payment of debts and claims on AIA G706 - Contractor's Affidavit of Payment of Debts and Claims.
 - f. Contractor affidavit of release of liens on AIA G706A - Contractor's Affidavit of Release of Liens.
 - g. Consent of surety to final payment on AIA G707 - Consent of Surety to Final Payment Form.
 - h. Perform final cleaning for Contractor-soiled areas according to this Section

1.03 SUBSTANTIAL COMPLETION

A. Contractor:

1. Submit written certification to the Landscape Architect that the project, or designated portion of project, is substantially complete.
2. Submit list of major items to be completed or corrected.

B. Landscape Architect will make an inspection within seven days after receipt of certification, together with Owner's Representative.

C. Should Landscape Architect consider that work is substantially complete:

1. Landscape Architect shall prepare a punch list of items to be completed or corrected, as determined by the inspection.
2. Landscape Architect will prepare and issue a Certificate of Substantial Completion, containing:

- a. Date of Substantial Completion.
- b. Punch list of items to be completed or corrected.
- c. The time within which Contractor shall complete or correct work of listed items.
- d. Date and time Owner will assume possession of Work or designated portion thereof.
- e. Responsibilities of Owner and Contractor for:
 - 1) Insurance
 - 2) Utilities
 - 3) Operation of mechanical, electrical and other systems
 - 4) Maintenance and cleaning
 - 5) Security
- f. Signatures of:
 - 1) Landscape Architect
 - 2) Contractor
 - 3) Owner's Representative

D. Final Completion Inspection:

1. Within seven days after receipt of request for final inspection, Landscape Architect will make inspection to determine whether Work or designated portion is complete.
2. Should Landscape Architect consider Work to be incomplete or defective:
 - a. Landscape Architect will promptly notify Contractor in writing, listing incomplete or defective Work.
 - b. Contractor shall remedy stated deficiencies and send second written request to Landscape Architect that Work is complete.
 - c. Landscape Architect will reinspect Work.
 - d. Redo and Inspection of Deficient Work: Repeated until Work passes Landscape Architect's inspection.

1.04 FINAL INSPECTION

A. Contractor shall submit written certification that:

1. Contract documents have been reviewed.
2. Project has been inspected for compliance with Contract.
3. Work has been completed in accord with Contract.
4. Project is completed, ready for final inspection.

- B. Landscape Architect will make final inspection within seven days after receipt of certification.
- C. Should Landscape Architect consider that work is finally complete in accord with Contract Document requirements, he shall request Contractor to make project close-out submittals.
- D. Should Landscape Architect consider that work is not finally complete:
 - 1. He shall notify Contractor, in writing, stating reasons.
 - 2. Contractor shall take immediate steps to remedy the stated deficiencies, and send second written notice to Landscape Architect certifying that work is complete.
 - 3. Landscape Architect will re-inspect work.

1.05 STARTING OF SYSTEMS

- A. Coordinate schedule for startup of various equipment and systems.
- B. Notify Landscape Architect/Owner seven days prior to startup of each item.
- C. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions which may cause damage.
- D. Verify that tests, meter readings, and electrical characteristics agree with those required by equipment or system manufacturer.
- E. Verify that wiring and support components for equipment are complete and tested.
- F. Execute startup under supervision of manufacturer's representative or Contractors' personnel according to manufacturer's instructions.
- G. When specified in individual Specification Sections, require manufacturer to provide authorized representative who will be present at Site to inspect, check, and approve equipment or system installation prior to startup and will supervise placing equipment or system in operation.

1.06 DEMONSTRATION AND INSTRUCTIONS

- A. Demonstrate operation and maintenance of products to Owner's personnel two weeks prior to date of final inspection.
- B. Use operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain all aspects of operation and maintenance.
- C. Demonstrate startup, operation, control, adjustment, troubleshooting, servicing, maintenance, and shutdown of each item of equipment at agreed time, at designated location.
- D. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.
- E. Required instruction time for each item of equipment and system is specified in individual Specification Sections.

1.07 PROJECT RECORD DOCUMENTS

- A. Maintain on Site one set of the following record documents; record actual revisions to the Work:
1. Drawings.
 2. Specifications.
 3. Addenda.
 4. Change Orders and other modifications to the Contract.
 5. Field Test Records
 6. As-built or as changed indications
 7. Reviewed Shop Drawings, product data, and Samples.
 8. Manufacturer's instruction for assembly, installation, and adjusting.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress, not less than weekly.
- E. Specifications: Legibly mark and record, at each product Section, description of actual products installed, including the following:
1. Manufacturer's name and product model and number.
 2. Product substitutions or alternates used.
 3. Changes made by Addenda and modifications.
- F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction as follows:
1. Include Contract modifications such as Addenda, supplementary instructions, change directives, field orders, minor changes in the Work, and change orders.
 2. Include locations of concealed elements of the Work.
 3. Identify depth of buried utility lines and provide dimensions showing distances from permanent facility components that are parallel to utilities.
 4. Dimension ends, corners, and junctions of buried utilities to permanent facility components using triangulation.
 5. Identify and locate existing buried or concealed items encountered during Project.
 6. Measured depths of foundations in relation to finish [first] [main] floor datum.
 7. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 8. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
 9. Field changes of dimension and detail.
 10. Details not on original Drawings.
- G. Store Documents in approved location apart from documents used for construction.
- H. Provide files and racks for document storage.
- I. File documents in accord with project filing format of CSI uniform construction index.

- J. Maintain documents in clean, dry, legible condition.
- K. Do not use record documents for construction purposes.
- L. Make documents available at all times for inspection by Landscape Architect and Owner.
- M. At completion of project, deliver Record Documents to Landscape Architect.
- N. Accompany submittal with transmittal letter, in duplicate, containing:
 - 1. Date
 - 2. Project title and number
 - 3. Contractor's name and address
 - 4. Title and number of each Record Document
 - 5. Certification that each document, as submitted, is complete and accurate
 - 6. Signature of Contractor, or his authorized representative
- O. Submit marked-up paper copy documents to Landscape Architect with claim for final Application for Payment.
- P. Submit PDF electronic files of marked-up documents to Landscape Architect with claim for final Application for Payment.

1.08 EVIDENCE OF PAYMENTS, RELEASE OF LIENS

- A. Contractor's Affidavit of Payment of Debts and Claims
- B. Contractor's Affidavit of Release of Liens:
 - 1. Consent of Surety to Final Payment
 - 2. Contractor's release or waiver of liens
 - 3. Separate releases of waiver of liens for subcontractors, suppliers and others with lien rights against property of Owner together with list of those parties.
- C. Duly execute all submittals before delivery to Landscape Architect.

1.09 FINAL ADJUSTMENT OF ACCOUNTS

- A. Submit final statement of accounting to Landscape Architect.
- B. Statement shall reflect all adjustments:
 - 1. Original Contract sum
 - 2. Additions and deductions resulting from:
 - a. Previous change orders
 - b. Cash allowances
 - c. Unit prices
 - d. Other adjustments
 - e. Deductions for uncorrected work
 - f. Deductions for re-inspection payments
 - 3. Total Contract sum, as adjusted
 - 4. Previous payments
 - 5. Sum remaining due
- C. Landscape Architect will prepare final change order, reflecting approved adjustments to Contract sum not previously made by change orders.

1.10 FINAL APPLICATION FOR PAYMENT

- A. Contractor shall submit final application in accord with requirements of Conditions of Contract.

1.11 FINAL CERTIFICATION FOR PAYMENT

- A. Landscape Architect will issue final certificate in accord with provisions of Conditions of Contract.
- B. Should final completion be materially delayed through no fault of Contractor, Landscape Architect may issue a Semi-Final Certificate of Payment, in accord with provisions of Conditions of Contract.

1.12 OPERATION AND MAINTENANCE DATA

- A. Submit in PDF composite electronic indexed file.
- B. Submit data bound in 8-1/2 x 11-inch text pages, three D side ring binders with durable plastic covers.
- C. Prepare binder cover with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS," title of Project, and subject matter of binder when multiple binders are required.
- D. Internally subdivide binder contents with permanent page dividers, logically organized as described below; with tab titling clearly printed under reinforced laminated plastic tabs.
- E. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
- F. Contents: Prepare table of contents for each volume, with each product or system description identified, typed on white paper, in three parts as follows:
 - 1. Part 1: Directory, listing names, addresses, and telephone numbers of Landscape Architect, Contractor, Subcontractors, and major equipment suppliers.
 - 2. Part 2: Operation and maintenance instructions, arranged by system and subdivided by Specification Section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Include the following:
 - a. Significant design criteria.
 - b. List of equipment.
 - c. Parts list for each component.
 - d. Operating instructions.
 - e. Maintenance instructions for equipment and systems.

- f. Maintenance instructions for finishes, including recommended cleaning methods and materials, and special precautions identifying detrimental agents.
- g. Safety precautions to be taken when operating and maintaining or working near equipment.
- 3. Part 3: Project documents and certificates, including the following:
 - a. Shop Drawings and product data.
 - b. Air and water balance reports.
 - c. Certificates.
 - d. Originals of warranties and bonds.

1.13 MANUAL FOR EQUIPMENT AND SYSTEMS

- A. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Landscape Architect will review draft and return one copy with comments.
- B. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit documents within ten days after acceptance.
- C. Submit one copy of completed volumes 15 days prior to final inspection. Draft copy will be reviewed and returned after Substantial Completion, with Landscape Architect comments. Revise content of document sets as required prior to final submission.
- D. Submit two sets of revised final volumes within ten days after final inspection.
- E. Submit in PDF composite electronic indexed file of final manual within ten days after final inspection.
- F. Each Item of Equipment and Each System: Include description of unit or system and component parts. Identify function, normal operating characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and model number of replaceable parts.
- G. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed or by label machine.
- H. Include color-coded wiring diagrams as installed.
- I. Operating Procedures: Include startup, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shutdown, and emergency instructions. Include summer, winter, and special operating instructions.
- J. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and troubleshooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- K. Include servicing and lubrication schedule and list of lubricants required.
- L. Include manufacturer's printed operation and maintenance instructions.

- M. Include sequence of operation by controls manufacturer.
- N. Include original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- O. Include control diagrams by controls manufacturer as installed.
- P. Include Contractor's coordination drawings with color-coded piping diagrams as installed.
- Q. Include charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- R. Include list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- S. Include test and balancing reports as specified in Section 01 40 00 - Quality Requirements.
- T. Additional Requirements: As specified in individual product Specification Sections.
- U. Include listing in table of contents for design data with tabbed dividers and space for insertion of data.

1.14 SPARE PARTS AND MAINTENANCE PRODUCTS

- A. Furnish spare parts, maintenance, and extra products in quantities specified in individual Specification Sections.
- B. Deliver to Project Site; obtain receipt prior to final payment.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that existing Site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new Work being applied or attached.
- C. Examine and verify specific conditions described in individual Specification Sections.
- D. Verify that utility services are available with correct characteristics and in correct locations.

3.02 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance according to manufacturer's instructions.
- B. Seal cracks or openings of substrate prior to applying next material or substance.

- C. Apply manufacturer-required or -recommended substrate primer, sealer, or conditioner prior to applying new material or substance in contact or bond.

3.03 EXECUTION

- A. Comply with manufacturer's installation instructions, performing each step in sequence. Maintain one set of manufacturer's installation instructions at Project Site during installation and until completion of construction.
- B. When manufacturer's installation instructions conflict with Contract Documents, request clarification from Landscape Architect before proceeding.
- C. Verify that field measurements are as indicated on approved Shop Drawings or as instructed by manufacturer.
- D. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.
 - 1. Secure Work true to line and level and within specified tolerances, or if not specified, industry-recognized tolerances.
 - 2. Physically separate products in place, provide electrical insulation, or provide protective coatings to prevent galvanic action or corrosion between dissimilar metals.
 - 3. Exposed Joints: Provide uniform joint width and arrange to obtain best visual effect. Refer questionable visual-effect choices to Landscape Architect for final decision.
- E. Allow for expansion of materials and building movement.
- F. Climatic Conditions and Project Status: Install each unit of Work under conditions to ensure best possible results in coordination with entire Project.
 - 1. Isolate each unit of Work from incompatible Work as necessary to prevent deterioration.
 - 2. Coordinate enclosure of Work with required inspections and tests to minimize necessity of uncovering Work for those purposes.
- G. Mounting Heights: Where not indicated, mount individual units of Work at industry recognized standard mounting heights for particular application indicated.
 - 1. Refer questionable mounting heights choices to Landscape Architect for final decision.
 - 2. Elements Identified as Accessible to Handicapped: Comply with applicable codes and regulations.
- H. Adjust operating products and equipment to ensure smooth and unhindered operation.
- I. Clean and perform maintenance on installed Work as frequently as necessary through remainder of construction period. Lubricate operable components as recommended by manufacturer.

3.04 PROTECTING INSTALLED CONSTRUCTION

- A. Protect installed Work and provide special protection where specified in individual Specification Sections.
- B. Provide temporary and removable protection for installed products. Control activity in immediate Work area to prevent damage.
- C. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- D. Use durable sheet materials to protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects.
- E. Prohibit traffic or storage upon waterproofed or roofed surfaces. When traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- F. Prohibit traffic from landscaped areas.

3.05 FINAL CLEANING

- A. Execute final cleaning prior to final Project assessment.
 - 1. Employ experienced personnel or professional cleaning firm.
- B. Clean equipment and fixtures to sanitary condition with appropriate cleaning materials.
- C. Clean debris from roofs, gutters, downspouts, and drainage systems.
- D. Clean Site; sweep paved areas, rake clean landscaped surfaces.
- E. Remove waste and surplus materials, rubbish, and construction facilities from Site.

END OF SECTION

PART 1 - GENERAL

1.01 SECTION INCLUDES:

- A. Formwork for cast-in place concrete.
- B. Shoring, bracing, and anchorage.
- C. Form accessories.
- D. Form stripping.

1.02 RELATED SECTIONS:

- A. Section 03 20 00 - Concrete Reinforcing.
- B. Section 03 30 00 - Cast-In-Place Concrete.

1.03 REFERENCES

- A. Illinois Department of Transportation – Standard Specifications for Road and Bridge Construction, current edition (Standard Specifications)
- B. American Concrete Institute:
 - 1. ACI 117 - Standard Specifications for Tolerances for Concrete Construction and Materials.
 - 2. ACI 301 - Specifications for Structural Concrete.
 - 3. ACI 318 - Building Code Requirements for Structural Concrete.
 - 4. ACI 347 - Guide to Formwork for Concrete.
- C. American Forest and Paper Association:
 - 1. AF&PA - National Design Specifications for Wood Construction.
- D. The Engineered Wood Association:
 - 1. APA/EWA PS 1 - Voluntary Product Standard for Construction and Industrial Plywood.
- E. American Society of Mechanical Engineers:
 - 1. ASME A17.1 - Safety Code for Elevators and Escalators.
- F. ASTM International:

1. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).
2. ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials.

G. West Coast Lumber Inspection Bureau:

1. WCLIB - Standard Grading Rules for West Coast Lumber.

1.04 QUALITY ASSURANCE

- A. Perform Work in accordance with ACI 301.
- B. For wood products furnished for work of this Section, comply with AF&PA.
- C. Perform Work in accordance with Standard Specifications.

1.05 COORDINATION

- A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.
- B. Coordinate this Section with other sections of work, requiring attachment of components to formwork.

PART 2 - PRODUCTS

2.01 WOOD FORM MATERIALS

- A. Form Materials: At discretion of Contractor.
- B. Lumber Forms:
 1. Application: Use for edge forms and unexposed finish concrete.
 2. Boards: 6 inches or 8 inches in width, shiplapped or tongue and groove, "Standard" Grade Douglas Fir, conforming to WCLIB Standard Grading Rules for West Coast Lumber. Surface boards on four sides.
- C. Plywood Forms:
 1. Application: Use for exposed finish concrete.

2.02 FORMWORK ACCESSORIES

- A. Form Ties: Snap-off type, metal, adjustable length, free of defects

- B. Spreaders: Standard, non-corrosive metal form clamp assembly, of type acting as spreaders and leaving no metal within 1 inch of concrete face. Wire ties, wood spreaders or through bolts are not permitted.
- C. Form Anchors and Hangers:
 - 1. Do not use anchors and hangers exposed concrete leaving exposed metal at concrete surface.
 - 2. Symmetrically arrange hangers supporting forms from structural steel members to minimize twisting or rotation of member.
 - 3. Penetration of structural steel members is not permitted.
- D. Form Release Agent: Colorless mineral oil that will not stain concrete, or absorb moisture.
- E. Corners: Fillet, wood strip type.
- F. Bituminous Joint Filler: ASTM D1751.
- G. Nails, Spikes, Lag Bolts, Through Bolts, Anchorages: Size, strength and character to maintain formwork in place while placing concrete.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.
- B. Verify lines, levels, and centers before proceeding with formwork. Verify dimensions agree with Drawings.
- C. When formwork is placed after reinforcement resulting in insufficient concrete cover over reinforcement before proceeding, request instructions from Architect/Engineer.

3.02 INSTALLATION

- A. Earth Forms:
 - 1. Trench earth forms neatly, accurately, and at least 2 inches wider than footing widths indicated on Drawings.
 - 2. Trim sides and bottom of earth forms.
 - 3. Construct wood edge strips at top of each side of trench to secure reinforcing and prevent trench from sloughing.
 - 4. Form sides of footings where earth sloughs.
 - 5. Tamp earth forms firm and clean forms of debris and loose material before depositing concrete.

B. Formwork - General:

1. Provide top form for sloped surfaces steeper than 1.5 horizontal to 1 vertical to hold shape of concrete during placement, unless it can be demonstrated that top forms can be omitted.
2. Construct forms to correct shape and dimensions, mortar-tight, braced, and of sufficient strength to maintain shape and position under imposed loads from construction operations.
3. Camber forms where necessary to produce level finished soffits unless otherwise shown on Drawings.
4. Carefully verify horizontal and vertical positions of forms. Correct misaligned or misplaced forms before placing concrete.
5. Complete wedging and bracing before placing concrete.

C. Forms for Smooth Finish Concrete:

1. Use steel, plywood or lined board forms.
2. Use clean and smooth plywood and form liners, uniform in size, and free from surface and edge damage capable of affecting resulting concrete finish.
3. Install form lining with close-fitting square joints between separate sheets without springing into place.
4. Use full size sheets of form lines and plywood wherever possible.
5. Tape joints to prevent protrusions in concrete.
6. Use care in forming and stripping wood forms to protect corners and edges.
7. Level and continue horizontal joints.
8. Keep wood forms wet until stripped.

D. Framing, Studding and Bracing:

1. Space studs at 16 inches on center maximum for boards and 12 inches on center maximum for plywood.
2. Size framing, bracing, centering, and supporting members with sufficient strength to maintain shape and position under imposed loads from construction operations.
3. Construct beam soffits of material minimum of 2 inches thick.
4. Distribute bracing loads over base area on which bracing is erected.
5. When placed on ground, protect against undermining, settlement or accidental impact.

E. Erect formwork, shoring, and bracing to achieve design requirements, in accordance with requirements of ACI 301.

F. Arrange and assemble formwork to permit dismantling and stripping. Do not damage concrete during stripping. Permit removal of remaining principal shores.

G. Obtain Architect/Engineer's approval before framing openings in structural members not indicated on Drawings.

H. Install void forms in accordance with manufacturer's recommendations.

3.03 APPLICATION - FORM RELEASE AGENT

- A. Apply form release agent on formwork in accordance with manufacturer's recommendations.
- B. Apply prior to placement of reinforcing steel, anchoring devices, and embedded items.
- C. Do not apply form release agent where concrete surfaces are indicated to receive special finishes or applied coverings that are affected by agent. Soak inside surfaces of untreated forms with clean water. Keep surfaces coated prior to placement of concrete.
- D. Reuse and Coating of Forms: Thoroughly clean forms and reapply form coating before each reuse. For exposed work, do not reuse forms with damaged faces or edges. Apply form coating to forms in accordance with manufacturer's specifications. Do not coat forms for concrete indicated to receive "scored finish". Apply form coatings before placing reinforcing steel.

3.04 INSTALLATION - INSERTS, EMBEDDED PARTS, AND OPENINGS

- A. Install formed openings for items to be embedded in or passing through concrete work.
- B. Locate and set in place items required to be cast directly into concrete.
- C. Coordinate with Work of other sections in forming and placing openings, slots, reglets, recesses, sleeves, bolts, anchors, other inserts, and components of other Work.
- D. Position recessed reglets for brick veneer masonry anchors in accordance with spacing and intervals as recommended by the manufacturer.
- E. Install accessories straight, level, and plumb. Ensure items are not disturbed during concrete placement.
- F. Install water stops continuous without displacing reinforcement.
- G. Provide temporary ports or openings in formwork where required to facilitate cleaning and inspection. Locate openings at bottom of forms to allow flushing water to drain.
- H. Close temporary openings with tight fitting panels, flush with inside face of forms, and neatly fitted so joints will not be apparent in exposed concrete surfaces.
- I. Form Ties:
 - 1. Use sufficient strength and sufficient quantity to prevent spreading of forms.
 - 2. Place ties at least 1 inch away from finished surface of concrete.
 - 3. Leave inner rods in concrete when forms are stripped.
 - 4. Space form ties equidistant, symmetrical and aligned vertically and horizontally unless otherwise shown on Drawings.

J. Arrangement: Arrange formwork to allow proper erection sequence and to permit form removal without damage to concrete.

K. Construction Joints:

1. Install surfaced pouring strip where construction joints intersect exposed surfaces to provide straight line at joints.
2. Just prior to subsequent concrete placement, remove strip and tighten forms to conceal shrinkage.
3. Show no overlapping of construction joints. Construct joints to present same appearance as butted plywood joints.
4. Arrange joints in continuous line straight, true and sharp.

L. Embedded Items:

1. Make provisions for pipes, sleeves, anchors, inserts, reglets, anchor slots, nailers, water stops, and other features.
2. Do not embed wood or uncoated aluminum in concrete.
3. Obtain installation and setting information for embedded items furnished under other Specification sections.
4. Securely anchor embedded items in correct location and alignment prior to placing concrete.
5. Verify conduits and pipes, including those made of coated aluminum, meet requirements of ACI 318 for size and location limitations.

M. Openings for Items Passing Through Concrete:

1. Frame openings in concrete where indicated on Drawings. Establish exact locations, sizes, and other conditions required for openings and attachment of work specified under other sections.
2. Coordinate work to avoid cutting and patching of concrete after placement.
3. Perform cutting and repairing of concrete required as result of failure to provide required openings.

N. Screeds:

1. Set screeds and establish levels for tops of concrete slabs and levels for finish on slabs.
2. Slope slabs to drain where required or as shown on Drawings.
3. Before depositing concrete, remove debris from space to be occupied by concrete and thoroughly wet forms. Remove freestanding water.

O. Screenshot Supports:

1. For concrete over waterproof membranes and vapor retarder membranes, use cradle, pad or base type screed supports which will not puncture membrane.
2. Staking through membrane is not be permitted.

P. Cleanouts and Access Panels:

1. Provide removable cleanout sections or access panels at bottoms of forms to permit inspection and effective cleaning of loose dirt, debris and waste material.
2. Clean forms and surfaces against which concrete is to be placed. Remove chips, saw dust and other debris. Thoroughly blow out forms with compressed air just before concrete is placed.

3.05 FORM CLEANING

- A. Clean forms as erection proceeds, to remove foreign matter within forms.
- B. Clean formed cavities of debris prior to placing concrete.
- C. Flush with water or use compressed air to remove remaining foreign matter. Ensure that water and debris drain to exterior through clean-out ports.
- D. During cold weather, remove ice and snow from within forms. Do not use de-icing salts. Do not use water to clean out forms, unless formwork and concrete construction proceed within heated enclosure. Use compressed air or other means to remove foreign matter.

3.06 FORM REMOVAL

- A. Do not remove forms or bracing until concrete has gained sufficient strength to carry its own weight and imposed loads and removal has been approved by Architect/Engineer.
- B. Loosen forms carefully. Do not wedge pry bars, hammers, or tools against finish concrete surfaces scheduled for exposure to view.
- C. Store removed forms in manner that surfaces to be in contact with fresh concrete will not be damaged. Discard damaged forms.
- D. Leave forms in place for minimum number of days as specified in ACI 347.

3.07 ERECTION TOLERANCES

- A. Construct formwork to maintain tolerances required by ACI 301.

3.08 FIELD QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Field inspecting, testing, adjusting, and balancing.
- B. Inspect erected formwork, shoring, and bracing to ensure that work is in accordance with formwork design, and that supports, fastenings, wedges, ties, and items are secure.

- C. Notify Architect/Engineer after placement of reinforcing steel in forms, but prior to placing concrete.
- D. Schedule concrete placement to permit formwork inspection before placing concrete.

END OF SECTION

PART 1 - GENERAL

1.01 SECTION INCLUDES:

- A. Reinforcing bars.
- B. Welded wire fabric.
- C. Reinforcement accessories.

1.02 RELATED SECTIONS:

- A. Section 03 10 00 - Concrete Forming and Accessories.
- B. Section 03 30 00 - Cast-In-Place Concrete.

1.03 REFERENCES

- A. Illinois Department of Transportation – Standard Specifications for Road and Bridge Construction, current edition (Standard Specifications)
- B. American Concrete Institute:
 - 1. ACI 301 - Specifications for Structural Concrete.
 - 2. ACI 318 - Building Code Requirements for Structural Concrete.
 - 3. ACI 530.1 - Specifications for Masonry Structures.
 - 4. ACI SP-66 - ACI Detailing Manual.
- C. ASTM International:
 - 1. ASTM A82/A82M - Standard Specification for Steel Wire, Plain, for Concrete Reinforcement.
 - 2. ASTM A184/A184M - Standard Specification for Fabricated Deformed Steel Bar Mats for Concrete Reinforcement.
 - 3. A185/A185M-07 Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete.
 - 4. ASTM A496/A496M - Standard Specification for Steel Wire, Deformed, for Concrete Reinforcement.
 - 5. ASTM A497/A497M - Standard Specification for Steel Welded Wire Fabric, Deformed, for Concrete Reinforcement.
 - 6. ASTM A615/A615M - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
 - 7. ASTM A704/A704M - Standard Specification for Welded Steel Plain Bar or Rod Mats for Concrete Reinforcement.

8. ASTM A706/A706M - Standard Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement.
 9. ASTM A767/A767M - Standard Specification for Zinc-Coated (Galvanized) Steel Bars for Concrete Reinforcement.
 10. ASTM A775/A775M - Standard Specification for Epoxy-Coated Steel Reinforcing Bars.
 11. ASTM A884/A884M - Standard Specification for Epoxy-Coated Steel Wire and Welded Wire Reinforcement.
 12. ASTM A934/A934M - Standard Specification for Epoxy-Coated Prefabricated Steel Reinforcing Bars.
 13. ASTM A996/A996M - Standard Specification for Rail-Steel and Axle-Steel Deformed Bars for Concrete Reinforcement.
- D. American Welding Society:
1. AWS D1.4 - Structural Welding Code - Reinforcing Steel.
- E. Concrete Reinforcing Steel Institute:
1. CRSI - Manual of Standard Practice.
 2. CRSI - Placing Reinforcing Bars.

1.04 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Submittal procedures.
- B. Shop Drawings: Indicate bar sizes, spacings, locations, and quantities of reinforcing steel and welded wire fabric, bending and cutting schedules, and supporting and spacing devices.
- C. Certificates: Submit AWS qualification certificate for welders employed on the Work.

1.05 QUALITY ASSURANCE

- A. Perform Work in accordance with CRSI - Manual of Standard Practice.
- B. Prepare shop drawings in accordance with ACI SP-66.
- C. Perform Work in accordance with Standard Specifications.

1.06 QUALIFICATIONS

- A. Welders: AWS qualified within previous 12 months.

1.07 COORDINATION

- A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.
- B. Coordinate with placement of formwork, formed openings and other Work.

PART 2 - PRODUCTS

2.01 REINFORCEMENT

- A. Deformed Reinforcement: ASTM A706/A706M; 60 ksi yield strength, steel bars, unfinished.
- B. Plain Wire: ASTM A82/A82M; unfinished.
- C. Welded Plain Wire Fabric: ASTM A185/A185M; in coiled rolls; unfinished.

2.02 ACCESSORY MATERIALS

- A. Tie Wire: Minimum 16 gage annealed type
- B. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for strength and support of reinforcement during concrete placement conditions.

2.03 FABRICATION

- A. Fabricate concrete reinforcement in accordance with CRSI Manual of Practice.

2.04 SOURCE QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Testing, inspection and analysis requirements.

PART 3 - EXECUTION

3.01 PLACEMENT

- A. Place, support and secure reinforcement against displacement. Do not deviate from required position beyond specified tolerance.
 - 1. Do not weld crossing reinforcement bars for assembly.
- B. Do not displace or damage vapor retarder.

- C. Accommodate placement of formed openings.
- D. Space reinforcement bars with minimum clear spacing in accordance with ACI 318.
 - 1. Where bars are indicated in multiple layers, place upper bars directly above lower bars.
- E. Maintain concrete cover around reinforcement as follows:

Reinforcement Location		Minimum Concrete Cover
Footings and Concrete Formed Against Earth		3 inches (75 mm)
Concrete exposed to earth or weather	No. 6 (19) bars and larger	2 inches (50 mm)
	No. 5 (16) bars and smaller	1-1/2 inches (38 mm)
Supported Slabs, Walls, and Joists	No. 14 (43) bars and larger	1-1/2 inches (38 mm)
	No. 11 (36) bars and smaller	3/4 inches (19 mm)
Beams and Columns		1-1/2 inches (38 mm)
Shell and Folded Plate Members	No. 6 (19) bars and larger	3/4 inches (19 mm)
	No. 5 (16) bars and smaller	1/2 inches (13 mm)

3.02 ERECTION TOLERANCES

- A. Section 01 40 00 - Quality Requirements: Tolerances.
- B. Install reinforcement within the following tolerances for flexural members, walls, and compression members:

Reinforcement Depth	Depth Tolerance	Concrete Cover Tolerance
Greater than 8 inches (200 mm)	plus or minus 3/8 inch (10 mm)	minus 3/8 inch (10 mm)
Less than 8 inches (200 mm)	plus or minus 1/2 inch (13 mm)	minus 1/2 inch (13 mm)

- C. Install reinforcement within the tolerances specified in ACI 530.1 for foundation walls.

3.03 FIELD QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Field inspecting, testing, adjusting, and balancing.
- B. Perform field inspection and testing in accordance with ACI 318.
- C. Provide free access to Work and cooperate with appointed firm.
- D. Reinforcement Inspection:
 - 1. Placement Acceptance: Specified and ACI 318 material requirements and specified placement tolerances.
 - 2. Welding: Inspect welds in accordance with AWS D1.1.
 - 3. Periodic Placement Inspection: Inspect for correct materials, fabrication, sizes, locations, spacing, concrete cover, and splicing.
 - 4. Weldability Inspection: Inspect for reinforcement weldability when formed from steel other than ASTM A706/A706M.
 - 5. Periodic Weld Inspection: Other welded connections.

END OF SECTION

PART 1 - GENERAL

1.01 SUMMARY:

- A. Work under this item includes, but is not limited to:
 - 1. Furnishing, mixing, forming, placing, finishing and curing all concrete required for construction of curbs and gutters, sidewalks, concrete paving, and walls.
 - 2. Furnishing and installing all required reinforcing steel

1.02 SECTION INCLUDES:

- A. Cast-in-place concrete for the following:
 - 1. Slabs on grade.
 - 2. Concrete walks
 - 3. Control, expansion and contraction joint devices.
 - 4. Equipment pads.

1.03 RELATED SECTIONS:

- A. Section 03 10 00 - Concrete Forming and Accessories: Formwork and accessories.
- B. Section 03 20 00 - Concrete Reinforcing.
- C. Section 31 22 13 - Rough Grading
- D. Section 31 23 23 - Fill: Sand layer over vapor retarder.

1.04 DESCRIPTION

- A. Published specifications, standards, tests or recommended methods fo trade, industry or governmental organizations apply to work of this section, where cited by abbreviation noted.
- B. American Society for Testing Materials, Current Edition (ASTM)
- C. American Concrete Institute (ACI).
- D. State Highway Specifications means the "ILLINOIS DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION," current edition including all supplements (Standard Specifications)..
- E. All work required under this section shall conform to the State Highway Specification applicable.

1.05 REFERENCES

- A. Illinois Department of Transportation – Standard Specifications for Road and Bridge Construction, current edition (Standard Specifications)
- B. American Concrete Institute:
 - 1. ACI 301 - Specifications for Structural Concrete.
 - 2. ACI 305 - Hot Weather Concreting.
 - 3. ACI 306.1 - Standard Specification for Cold Weather Concreting.
 - 4. ACI 308.1 - Standard Specification for Curing Concrete.
 - 5. ACI 318 - Building Code Requirements for Structural Concrete.
- C. ASTM International:
 - 1. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
 - 2. ASTM C31/C31M - Standard Practice for Making and Curing Concrete Test Specimens in the Field.
 - 3. ASTM C33 - Standard Specification for Concrete Aggregates.
 - 4. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.

5. ASTM C42/C42M - Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.
6. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete.
7. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic Cement Concrete.
8. ASTM C150 - Standard Specification for Portland Cement.
9. ASTM C172 - Standard Practice for Sampling Freshly Mixed Concrete.
10. ASTM C173/C173M - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method.
11. ASTM C231 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
12. ASTM C260 - Standard Specification for Air-Entraining Admixtures for Concrete.
13. ASTM C330 - Standard Specification for Lightweight Aggregates for Structural Concrete.
14. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete.
15. ASTM C595 - Standard Specification for Blended Hydraulic Cements.
16. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete.
17. ASTM C685/C685M - Standard Specification for Concrete Made By Volumetric Batching and Continuous Mixing.
18. ASTM C845 - Standard Specification for Expansive Hydraulic Cement.
19. ASTM C989 - Standard Specification for Ground Granulated Blast-Furnace Slag for Use in Concrete and Mortars.
20. ASTM C1017/C1017M - Standard Specification for Chemical Admixtures for Use in Producing Flowing Concrete.
21. ASTM C1064/C1064M - Standard Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete.
22. ASTM C1107/C1107M - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink).
23. ASTM C1116 - Standard Specification for Fiber-Reinforced Concrete and Shotcrete.
24. ASTM C1157 - Standard Performance Specification for Hydraulic Cement.
25. ASTM C1218/C1218M - Standard Test Method for Water-Soluble Chloride in Mortar and Concrete.
26. ASTM C1240 - Standard Specification for Silica Fume Used in Cementitious Mixtures.
27. ASTM D994 - Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type).
28. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).
29. ASTM D1752 - Standard Specification for Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.
30. ASTM D6690 - Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements.

31. ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials.
32. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
33. ASTM E1643 - Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill under Concrete Slabs.
34. ASTM E1745 - Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs.

1.06 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Submittal procedures.
- B. Product Data: Submit data on joint devices, attachment accessories, and admixtures.
- C. Design Data:
 1. Submit concrete mix design for each concrete strength. Submit separate mix designs when admixtures are required for the following:
 - a. Hot and cold weather concrete work.
 - b. Air entrained concrete work.
 2. Identify mix ingredients and proportions, including admixtures.
 3. Identify chloride content of admixtures and whether or not chloride was added during manufacture.
- D. Samples: Submit two x ten inch long samples of expansion/contraction joint and control joint.
- E. Manufacturer's Installation Instructions: Submit installation procedures and interface required with adjacent Work.

1.07 CLOSEOUT SUBMITTALS

- A. Section 01 70 00 - Execution and Closeout Requirements: Closeout procedures.
- B. Project Record Documents: Accurately record actual locations of embedded utilities and components concealed from view in finished construction.

1.08 QUALITY ASSURANCE

- A. Perform Work in accordance with ACI 301.
- B. Conform to ACI 305 when concreting during hot weather.
- C. Conform to ACI 306.1 when concreting during cold weather.
- D. Acquire cement and aggregate from one source for Work.
- E. Perform Work in accordance with Standard Specifications

1.09 ENVIRONMENTAL REQUIREMENTS

- A. Section 01 60 00 - Product Requirements: Environmental conditions affecting products on site.
- B. Concrete shall not be placed when air temperature is 45 degrees and falling. Placement will be permitted if air temperature is 40 degrees and rising.
- C. Maintain concrete temperature after installation at minimum 50 degrees F (10 degrees C) for minimum 7 days.

1.10 COORDINATION

- A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.
- B. Coordinate placement of joint devices with erection of concrete formwork and placement of form accessories.

PART 2 - PRODUCTS

2.01 CONCRETE MATERIALS

A. Portland Cement Concrete

1. Class X, 6 bag mix, concrete in accordance with State Highway Specifications.
2. Compressive strength of 4000 pounds per square inch after 28 days when tested in accordance with ASTM C39 for curb and gutters, walks, walls, and concrete foundations.
3. Provide a slump between three (3) to four (4) inches max when tested in accordance with ASTM C143.
4. Mix all materials for not less than one (1) minute in controlled time mixers.
5. Redi-mix concrete must be discharged from mixer within one (1) hour after all ingredients are in mixer.
6. No water shall be added to the concrete after it has been transported to the construction site.

B. Expansion Joints

1. Expansion joints shall be ½" bituminous saturated felt or preformed, non-absorbent closed cell polystyrene or butyl foam as recommended by manufacturer of joint sealant.

C. Joint Sealant

1. Joint sealant shall be polyurethane based elastomeric sealing compound material of the cold applied type in a gray color (or to match color of concrete) equal to rubber caulk #230 manufactured by PRC. Dynoseal W-5-7-G. Manufactured by Williams Products Inc., and TC/900 manufactured by Trencor.
2. The sealing materials shall be delivered to the job site in unbroken original packages bearing the manufacturer's name and brand designation.

D. Cement: ASTM C150, Type I - Normal Portland type

E. Normal Weight Aggregates: ASTM C33.

1. Coarse Aggregate Maximum Size: In accordance with ACI 318.

2.02 ADMIXTURES

A. Air Entrainment: ASTM C260.

2.03 ACCESSORIES

- A. Concrete Reinforcing Fibers: ASTM C1116, high strength industrial-grade fibers specifically engineered for secondary reinforcement of concrete. Tensile strength - 130 ksi; toughness 15 ksi; 3/4 inch long fibers, 34 million/lb fiber count.
- B. Detectable warning panels for accessible routes.
 - 1. Manufacturer:
 - a. EJ USA 301 Spring Street East Jordan, MI or approved equal
 - 2. Natural finish

2.04 JOINT DEVICES AND FILLER MATERIALS

- A. Joint Filler: ; Asphalt impregnated fiberboard or felt, 1/4 inch thick; tongue and groove profile;
- B. Construction Joint Devices: Integral extruded plastic; formed to tongue and groove profile, knockout holes spaced at 6 inches, ribbed steel spikes with tongue to fit top screed edge;

2.05 CONCRETE MIX

- A. Provide concrete to the following criteria:
 - 1. Comply with Section 1020.11 of the Standard Specifications.
- B. Admixtures: Include admixture types and quantities indicated in concrete mix designs only when approved by Landscape Architect.
 - 1. Use accelerating admixtures in cold weather. Use of admixtures will not relax cold weather placement requirements.
 - 2. Do not use calcium chloride nor admixtures containing calcium chloride.
 - 3. Use set retarding admixtures during hot weather.
 - 4. Add air entrainment admixture to concrete mix for work exposed to freezing and thawing.
 - 5. For concrete exposed to deicing chemicals, limit fly ash, pozzolans, silica fume, and slag content as required by applicable code.
 - 6. Average Compressive Strength Reduction: Permitted in accordance with ACI 318.

7. Ready Mixed Concrete: Mix and deliver concrete in accordance with ASTM C94/C94M.
8. Site Mixed Concrete: Mix concrete in accordance with ACI 318.

2.06 EQUIPMENT

- A. All equipment used to perform this work must conform to the IDOT Specification Section 800.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.
- B. Verify requirements for concrete cover over reinforcement.
- C. Verify anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not interfere with placing concrete.

3.02 INSPECTION

- A. Prior to starting work in this section, all subgrades and subsequently prepared base courses must be inspected and approved by the Landscape Architect.

3.03 PREPARATION

- A. Install compacted thickness of aggregate bedding prior to installation of all concrete. Base should be properly wetted prior to concrete placement.
- B. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent. Remove laitance, coatings, and unsound materials.
- C. 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.

- D. Remove debris and ice from formwork, reinforcement, and concrete substrates.
- E. Remove water from areas receiving concrete before concrete is placed.

3.04 INSTALLATION

- A. Build forms to line and grade with mortar tight joints using good lumber or metal forms properly braced and staked. Oil forms before concrete is poured. Forms may be removed 24 hours after pouring.
- B. Place reinforcing steel as indicated in the details on plan.
- C. Expansion joints shall be placed against existing concrete and stationary structures. Install $\frac{1}{2}$ inch expansion joints in walks 30 feet on center every 30 feet using $\frac{3}{4}$ inch expansion material with standard expansion caps and smooth dowels through each joint (See Curb and Gutter Detail).
- D. Notify Landscape Architect 48 hours before the intended pour.
- E. Place concrete immediately after mixing and thoroughly puddle or vibrate to consolidate and bring mortar to surface.
- F. Finish curb and gutters smooth by floating, troweling, and edging before brushing surface to secure final surface. Use standard ten (10) foot straight-edge test and correct irregularities over $\frac{1}{4}$ of an inch.
- G. Finish walks and flatwork by floating, steel troweling, scoring, edging, and broom finishing or exposing aggregate by washing where applicable. All walks shall be free from surface defects, leaf fossils imprints of any type. All defects should be replaced at no additional expense to the owner.
- H. Construct straight, well-defined score lines (control joints) five (5) feet on center in all work at right angles to walk, extending to $1\frac{1}{2}$ inches depth of the concrete and $\frac{1}{8}$ to $\frac{1}{4}$ of an inch wide. See Concrete Details for special scoring requirements.
 - 1. Score Lines/Control Joints
 - a. Weakened plane control joints for curb and sidewalk shall be constructed at right angles to curb line, with spacing in 5 foot multiples, not to exceed 5 foot for sidewalk and 10 foot for curb.

- b. Control joints may be hand formed with joint depth to be a minimum of ¼" the total depth of the section. No sawed joints will be permitted.
2. Expansion Joints – provide in the following locations
- a. Wherever walks abut vertical surfaces
 - b. Curb. Expansions joints shall be constructed at right angles to the curb line with spacing in multiples of 10 feet not to exceed 30 feet. Expansion joints shall also be placed at interface at straight curb and short radius curved sections, interface of new curb with old curb, and both sides of driveway cuts.
3. Walks.
- a. Expansion joints shall be constructed at right angles to the curb line with spacing not to exceed 30 feet.
 - b. Expansion joints shall also be placed at interface with straight walk and short radius curved sections, interface of new walk with old walk and both sides of driveway approaches.
 - c. Locations as indicated or necessary to prevent shrinkage from cracking concrete.
- I. Remove forms carefully to avoid damaging corners and edges of exposed concrete within 24 hours after the concrete has been placed.
- J. Broom finish surfaces carefully straight continuous strokes at right angles to direction of traffic, while the concrete is still green. The edges shall be rounded with approved finishing tools having the radii shown on the drawings.
- K. Ramp Texture: Wheel chair ramps, where shown, shall be finished with heavier brooming transverse to slope of ramp. Texture must conform to Americans With Disabilities Act guidelines

3.05 PLACING CONCRETE

- A. Place concrete in accordance with ACI 301.
- B. Notify testing laboratory and Landscape Architect minimum 24 hours prior to commencement of operations.
- C. Ensure reinforcement, inserts, embedded parts, formed expansion and contraction joints are not disturbed during concrete placement.

- D. Separate slabs on grade from vertical surfaces with 3/4 inch thick joint filler.
- E. Extend joint filler from bottom of slab to within 1/4 inch of finished slab surface.
- F. Install construction joint devices in coordination with pattern placement sequence. Set top to required elevations. Secure to resist movement by wet concrete.
- G. Deposit concrete at final position. Prevent segregation of mix.
- H. Place concrete in continuous operation for each panel or section determined by predetermined joints.
- I. Consolidate concrete.
- J. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.
- K. Place concrete continuously between predetermined expansion, control, and construction joints.
- L. Do not interrupt successive placement; do not permit cold joints to occur.
- M. Saw cut joints within 12 hours after placing. Use 3/16 inch thick blade, cut into 1/4 depth of slab thickness.
- N. Screed slabs on grade level, maintaining surface flatness of maximum 1/8 inch in 10 ft.

3.06 CONCRETE FINISHING

- A. Finish curb and gutters smooth by floating, troweling, and edging before brushing surface to secure final surface. Use standard ten (10) foot straight-edge test and correct irregularities over ¼ of an inch.
- B. Finish walks and flatwork by floating, steel troweling, scoring, edging, and broom finishing or exposing aggregate by washing where applicable. All walks shall be free

from surface defects, leaf fossils imprints of any type. Replace all defects at no additional expense to the owner.

- C. Construct straight, well-defined score lines (control joints) five (5) feet on center in all work at right angles to walk, extending to 1½ inches depth of the concrete and 1/8 to ¼ of an inch wide. See Concrete Details for special scoring requirements.
1. Score Lines/Control Joints
 - a. Weakened plane control joints for curb and sidewalk shall be constructed at right angles to curb line, with spacing in 5 foot multiples, not to exceed 5 foot for sidewalk and 10 foot for curb.
 - b. Control joints may be hand formed with joint depth to be a minimum of ¼" the total depth of the section. No sawed joints will be permitted.
 2. Expansion Joints – provide in the following locations
 - a. Wherever walks abut vertical surfaces
 - b. Curb. Expansions joints shall be constructed at right angles to the curb line with spacing in multiples of 10 feet not to exceed 30 feet. Expansion joints shall also be placed at interface at straight curb and short radius curved sections, interface of new curb with old curb, and both sides of driveway cuts.
 3. Walks
 - a. Expansion joints shall be constructed at right angles to the curb line with spacing not to exceed 30 feet.
 - b. Expansion joints shall also be placed at interface with straight walk and short radius curved sections, interface of new walk with old walk and both sides of driveway approaches.
 - c. Locations as indicated or necessary to prevent shrinkage from cracking concrete.
- D. Remove forms carefully to avoid damaging corners and edges of exposed concrete within 24 hours after the concrete has been placed.
- E. Broom finish surfaces carefully straight continuous strokes at right angles to direction of traffic, while the concrete is still green. The edges shall be rounded with approved finishing tools having the radii shown on the drawings.
- F. Ramp Texture: Wheel chair ramps, where shown, shall be finished with heavier brooming transverse to slope of ramp. Texture must conform to Americans With Disabilities Act guidelines.

3.07 CURING AND PROTECTION

- A. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
 - 1. Protect concrete footings from freezing for minimum 5 days.
- B. Cure all concrete for not less than seven (7) days after placement.
- C. Protect all concrete surfaces from sun with water-saturated coverings, white polyethylene sheets or approved membrane curing compounds sprayed on the surface.
- D. Concrete pours shall be protected by the Contractor from graffiti or vandalism. Each day's pour shall be guarded until the concrete has obtained sufficient hardness to prohibit malicious damage.
- E. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
- F. Cure concrete in accordance with ACI 308.1

3.08 FIELD QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Field inspecting, testing, adjusting, and balancing.
- B. Field inspection and testing will be performed by Owner's testing laboratory in accordance with ACI 318.
- C. Provide free access to Work and cooperate with appointed firm.
- D. Submit proposed mix design of each class of concrete to inspection and testing firm for review prior to commencement of Work.
- E. Concrete Inspections:
 - 1. Continuous Placement Inspection: Inspect for proper installation procedures.

2. Periodic Curing Inspection: Inspect for specified curing temperature and procedures.

F. Strength Test Samples:

1. The Contractor shall provide empty test cylinders for this project.
2. A total of two (2) test cylinders shall be drawn from the same truck load for every 50 cubic yards of concrete, or two (2) cylinders per each day's pour if less than 50 cubic yards.
3. Test cylinders shall be clearly marked with a date and load ticket number. The Contractor shall protect cylinders and store safely until picked up by testing laboratory.
4. Testing expenses shall be paid for by the Owner.

G. Sampling Procedures:

1. Comply with ASTM C172.
2. Cylinder Molding and Curing Procedures: ASTM C31/C31M, cylinder specimens, field cured.
3. Sample concrete and make one set of two cylinders for every 50 cu yds or less of each class of concrete placed each day and for every 5,000 sf of surface area for slabs and walls.
4. When volume of concrete for any class of concrete would provide less than 5 sets of cylinders, take samples from five randomly selected batches, or from every batch when less than 5 batches are used.
5. Make one additional cylinder during cold weather concreting, and field cure.

H. Field Testing:

1. Slump Test Method: ASTM C143/C143M.
2. Air Content Test Method: ASTM C173/C173M.
3. Temperature Test Method: ASTM C1064/C1064M.
4. Measure slump and temperature for each compressive strength concrete sample.
5. Measure air content in air entrained concrete for each compressive strength concrete sample.

I. Cylinder Compressive Strength Testing:

1. Test Method: ASTM C39/C39M.
2. Test Acceptance: In accordance with ACI 318.
3. Test one cylinder at 7 days.
4. Test one cylinder at 28 days.
5. Dispose remaining cylinders when testing is not required.

- J. Core Compressive Strength Testing:
 - 1. Sampling and Testing Procedures: ASTM C42/C42M.
 - 2. Test Acceptance: In accordance with ACI 318.

- K. Maintain records of concrete placement. Record date, location, quantity, air temperature and test samples taken.

3.09 PATCHING

- A. Allow Landscape Architect to inspect concrete surfaces immediately upon removal of forms.

- B. Excessive honeycomb or embedded debris in concrete is not acceptable. Notify Landscape Architect upon discovery.

- C. Patch imperfections in accordance with ACI 301.

- D. Immediately after stripping and before concrete is thoroughly dry, patch minor defects, form-tie holes, honeycombed areas, etc., with patching mortar. Patch shall match finish of adjacent surface unless noted. No patching is allowed on concrete surfaces to be sandblast finished.

3.10 DEFECTIVE CONCRETE

- A. Where concrete is under strength, out of line, level, or plumb, or shows objectionable cracks, honeycombing, rock pockets, voids, spalling, exposed reinforcing or is otherwise defective, and in the Landscape Architect's judgment, these defects impair proper strength or appearance of the work, the Landscape Architect will require its removal and replacement at the Contractor's expense.

- B. Defective Concrete: Concrete not conforming to required lines, details, dimensions, tolerances or specified requirements.

- C. Repair or replacement of defective concrete will be determined by Landscape Architect.

- D. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Landscape Architect for each individual area.

- E. Stained or discolored concrete shall be cleaned as directed and approved by the Landscape Architect.

- F. Stains or other defects which cannot be removed are subject to correction by removal and replacement at no cost to owner.

END OF SECTION

PART 1 - GENERAL

1.01 SECTION INCLUDES:

- A. Work Includes:
 - 1. Cast-in-place (non-loose fill) playground surfacing system
 - 2. Furnishing and installing the Poured-In-Place (PIP) Safety Surface. The surfacing Manufacturer/installer shall be responsible for all labor, materials, tools, and equipment to perform all work and services for the installation of the surface.

1.02 RELATED SECTIONS:

- A. Excavation, concrete paving
- B. Section 31 23 16 – Excavation
- C. Section 03 30 00 – Cast-In –Place Concrete

1.03 SUBMITTALS

- A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures Section.
- B. Product Data: Submit manufacturer's product data and installation instructions.
- C. Verification Samples: Submit for each product indicated and for each color and texture required.
- D. Shop Drawings: Show materials, cross sections, and drainage.
 - 1. Show penetration details
 - 2. Show edge terminations
- E. Quality Assurance/Control Submittals: Submit the following:
 - 1. Certificate of qualifications of the playground surfacing installer.
 - 2. Product test reports
 - 3. Maintenance data
- F. Closeout Submittals: Submit the following:
 - 1. Warranty documents specified herein.

1.04 PRODUCT REQUIREMENTS

- A. Performance Requirements: Provide a 2 layer rubber-polyurethane playground surfacing system which has been designed, manufactured and installed to meet the following criteria:
1. Shock Attenuation (ASTM F1292):
 - a. Gmax: Less than 200.
 - b. Head Injury Criteria: Less than 1000.
 2. Flammability (ASTM D2859): Pass.
 3. Tensile Strength (ASTM D412): 60 psi (413 kPa).
 4. Tear Resistance (ASTM D624): 140%
 5. Water Permeability: 0.4 gal/yd²/second.
 6. Accessibility: Comply with requirements of ASTM F1951 and Americans with Disabilities Act.

1.05 QUALITY ASSURANCE

- A. Qualifications: Utilize an installer approved and trained by the manufacturer of the playground surfacing system, having experience with other projects of the scope and scale of the work described in this section.
- B. Certifications: Certification by manufacturer that installer is an approved applicator of the playground surfacing system.
- C. International Play Equipment Manufacturers Association (IPEMA) certified.
- D. Standards and Guidelines: Provide playground surface systems complying with applicable provisions of the following, unless more stringent provisions are indicated:
1. CPSC No. 325, "Handbook for Public Playground Safety"; ASTM F 1292 and ASTM F 1487.

1.06 DELIVERY, STORAGE AND HANDLING

- A. General: Comply with Division 1 Product Requirement Section.
- B. Delivery: Deliver materials in manufacturer's original unopened, undamaged containers with identification labels intact.
- C. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at a minimum temperature of 40 degrees F and a maximum temperature of 90 degrees F.

1.07 PROJECT/SITE CONDITIONS

- A. Environmental Requirements: Install surfacing system when minimum ambient temperature is 33 degrees F and maximum ambient temperature is 90 degrees F. Do not install in steady or heavy rain.

1.06 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.07 DELIVERY, STORAGE AND HANDLING

- A. General: Comply with Division 1 Product Requirement Section.
- B. Delivery: Deliver materials in manufacturer's original unopened, undamaged containers with identification labels intact.
- C. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at a minimum temperature of 40 degrees F and a maximum temperature of 90 degrees F.

1.08 PROJECT SITE CONDITIONS

- A. Synthetic safety surfacing shall be installed on a dry subsurface, with no prospect of rain within the initial drying period, at temperatures recommended by the Manufacturer.
- B. Installation in weather condition of extreme heat, temperatures less than 40-degrees (F), and/or high humidity may impact cure time, and/or the structural integrity of the final product. Immediate surroundings of the site shall be reasonably free of dust conditions and poor particulate air quality will impact the final surface look.
- C. The Manufacturer's installation manager shall reserve the right to control the project schedule installation based on such factors without penalty to No Fault Sport Group, LLC.
- D. Safety surfacing shall be installed after the playground equipment is installed unless otherwise noted.
- E. Surface installation shall be coordinated by the project manager of designated individual of playground equipment and sub-base installation, with No Fault Sport Group's local production manager and in accordance with No Fault's sub-base requirements.

1.09 REFERENCES

- A. American Society for Testing and Materials (ASTM):

1. ASTM D412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers-Tension.
2. ASTM D624 Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers.
3. ASTM D2047 Standard Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces as Measured by the James Machine.
4. ASTM D2859 Standard Test Method for Flammability of Finished Textile Floor Covering Materials.
5. ASTM E303 Standard Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester Equipment.
6. ASTM F1292 Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment.
7. ASTM F1951 Standard Specification for Determination of Accessibility of Surface Systems Under and Around Playground Equipment.

1.10 WARRANTY

- A. Project Warranty: Refer to conditions of the contract for project warranty provisions.
- B. Manufacturer's Warranty: Submit, for owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights owner may have under contract documents.
 1. Warranty Period: 5 years from date of completion of work.
- C. Surfacing shall maintain required impact attenuation characteristics and be guaranteed against defects in workmanship and materials for a period of no less than five (5) years

PART 2 - PRODUCTS

2.01 POURED-IN-PLACE PLAYGROUND SURFACING SYSTEM

- A. Manufacturer: Surface America, Inc. (or equal)
 1. Contact: Nutoys Leisure Products, Box 2121, LaGrange, Illinois 60525; Telephone: (708) 579-9055 or 1-800-526-6197
- B. Proprietary Products/Systems. Poured-in-place playground surfacing system, including the following:
 1. PlayBound Poured-In-Place Primer (or equal)

- a. Material: Polyurethane
2. PlayBound Poured-in-Place Basemat (or equal)
 - a. Material: Blend of 100% recycled SBR (styrene butadiene rubber) and polyurethane.
 - b. Thickness: The type of playground equipment determines the required basemat thickness, and the basemat thickness may be different at various locations on the playground site. Refer to ASTM F 1292 requirements for critical height and recommended basemat thickness and coordinate with plan drawings play equipment manufacturer's recommendations. Thickness 1" (25.4 mm), 1-1/2" (38 mm), 2" (51 mm), 2-1/2" (64 mm), 3-1/2" (89 mm), 4" (102 mm).
 - c. Formulation Components: Blend of strand and granular material.
 3. PlayBound Poured-In-Place Top Surface:
 - a. Material: Blend of recycled EPDM (ethylene propylene diene monomer) and polyurethane.
 - b. Thickness Nominal 1/2" (12.7 mm), minimum 3/8" (9.5 mm), maximum 5/8" (15.9 mm).
 - c. As specified on the construction drawings
 - d. Dry Static Coefficient of Friction (ASTM D2047): 1.0
 - e. Wet Static: Coefficient of Friction (ASTM D2047): 0.9
 - f. Dry Skid Resistance (ASTM E303): 89
 - g. Wet Skid Resistance (ASTM E303): 5.7

2.02 PRODUCT SUBSTITUTIONS

- A. Substitutions: No substitutions permitted.

2.03 MIXES

- A. Required mix proportions by weight:
 1. Basemat: 14% polyurethane, 86% rubber.
 2. Top Surface: 18% polyurethane, 82% rubber.

PART 3 - EXECUTION

3.01 MANUFACTURER'S INSTRUCTIONS

- A. Comply with the instructions and recommendations of the playground surfacing manufacturer.

3.02 EXAMINATION

- A. Site Verification of Conditions: Verify that substrate conditions are suitable for installation of the playground surfacing system.
- B. Do not proceed with installation until unsuitable conditions are corrected.

3.03 PREPARATION

- A. Surface Preparation: Using a brush or short nap roller, apply primer to the substrate perimeter and any adjacent vertical barriers such as playground equipment support legs, curbs or slabs that will contact the surfacing system at the rate of 300 ft²/gal.

3.04 INSTALLATION

- A. Concrete Substrates: Verify that substrates are dry, free from surface defects, and free of laitance, glaze, efflorescence, curing compounds, form-release agents, hardeners, dust, dirt, loose particles, grease, oil, and other contaminates incompatible with playground surface system or that may interfere with adhesive bond. Determine adhesion, dryness, and acidity characteristics by performing procedures recommended in writing by playground surface system manufacturer.
- B. Do not proceed with playground surfacing installation until unsatisfactory conditions of the substrate have been corrected and all applicable site work, including fencing, playground equipment installation and other relevant work, has been completed.
- C. Prepare substrate to receive surfacing products according to playground surface system manufacturer's written instructions. Verify that substrates are sound without high spots, ridges, holes, and depressions.
 - 1. Use trowelable leveling and patching materials, according to manufacturer's written instructions, to fill holes and depressions.
 - 2. Mechanically Scarify or otherwise prepare concrete substrates according to manufacturer's written instructions to achieve recommended degree of roughness.
 - 3. Saw cut concrete for terminal edges of seamless playground surface systems.
- D. Basemat Installation: Provide uniform, monolithic wearing surface and impact-attenuating system of a total thickness indicated. Prevent contamination during application and curing processes.
 - 1. Using screeds and hand trowels, install the basemat at a consistent density of 29 pounds, 10 ounce per cubic foot to the specified thickness.
 - 2. Basemat to be applied in one continuous operation, with a minimum of cold joints.

3. Allow basemat to cure for sufficient time so that indentations are not left in the basemat from applicator foot traffic or equipment.
 4. Do not allow foot traffic or use of the basemat surface until it is sufficiently cured.
- E. Primer Application: Using a brush or short nap roller, apply primer to the basemat and any adjacent vertical barriers such as playground equipment support legs, curbs or slabs that will contact the surfacing system at the rate of 300 ft²/gal. – apply primer for maximum adherence to basemat.
- F. To Surface Installation:
1. Using a hand trowel, install top surface at a consistent density of 58 pounds, 9 ounces per cubic foot to form a level layer of uniform density and consistency, applied in one continuous operation, and, except where color changes with a minimum of cold joints. Finish surface to produce manufacturer's standard wearing-surface texture.
 - a. Where color pattern is indicated, place adjacent colored material as soon as placed colored material is sufficiently cured using primer or adhesive if required by manufacturer's written instructions.
 1. Edge Treatment: As indicated on the drawings and details. Fully adhere edges to substrate with full coverage of substrate. Maintain fully cushioned thickness.
 2. Provide protection to prevent traffic over system for not less than 48 hours after installation.
 3. At the end of the minimum curing period, verify that the top surface is sufficiently dry and firm to allow foot traffic and use without damage to the surface.
 4. Cleaning: During installation of adhesively applied products, immediately remove visible adhesive from surfaces. Use cleaner recommended by playground surface system manufacturer.

3.05 PROTECTION

- A. Protect the installed playground surface from damage resulting from subsequent construction activity on the site.

3.06 CLEAN UP

- A. Manufacturer's installers shall not leave adhesive on adjacent surface or play equipment. Spills of excess adhesive shall be promptly cleaned with materials and methods as recommended by the Manufacturer.
- B. Manufacturer's installers shall properly dispose of all material and packing waste before leaving the job site.
- C. Contractor shall be responsible for supplying a dumpster at job site for all waste associated with installation of the safety surface.

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Furnish all labor, materials and equipment required to install the play equipment and structures as indicated on the drawings or as approved and specified herein. The work shall include any incidentals required to provide a finished job.

1.02 SECTION INCLUDES:

- A. New Dragon Head & Crawl Tunnel

1.03 RELATED SECTIONS:

- A. Section 03 30 00 - Cast-in-Place Concrete
- B. Construction Plans and Details
- C. Variances:
 - 1. The Contractor/manufacturer shall submit with their bid a list of all variances from these specifications

1.04 SUBMITTALS

- A. The Contractor/Manufacturer's Representative shall submit for approval prior to delivery scaled drawings of each specified component including dimensioned plans, color charts, erection drawings, installation details, parts list, and technical data for correct assembly of all components, clamp details, and anchoring details.

1.05 GUARANTEE:

- A. The Contractor shall provide information on the equipment manufacturer's guarantee. Contractor shall warranty installation workmanship of all play equipment for a period of one year starting on the date of Physical Completion of the Project.

1.06 SAFETY GUIDELINES AND STANDARDS:

- A. All materials and equipment shall conform to the current issue of the "Handbook for Public Playground Safety" published by the Consumer Product Safety Commission (C.P.S.C.) and ASTM F1487-01. The manufacturer and installation contractor shall be responsible for correcting any product violations of the C.P.S.C. Guidelines and ASTM

F1487-01, to the satisfaction of the Landscape Architect, should they be found after installation.

- B. ADA Accessibility Guidelines (ADAAG) Section 15.6 Play Areas.

1.07 QUALITY ASSURANCE:

- A. The Contractor installing the play equipment and structures must be experienced in the installation of play equipment with the personnel, facilities, and equipment adequate for the work specified, and shall, within 48 hours of the Landscape Architects request, produce written proof of such.

1.08 REFERENCE STANDARDS

- A. Consumer Product Safety Commission Public Playground Safety Handbook (Publication #325):

1.09 COORDINATION

- A. Section 01 30 00 - Administrative Requirements specifies requirements for coordination.

1.10 PREINSTALLATION MEETINGS

- A. Section 01 30 00 - Administrative Requirements specifies requirements for preinstallation meeting.
- B. Convene minimum one week prior to commencing Work of this Section.

1.11 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures specifies requirements for submittals.
- B. Product Data: Submit manufacturer's color and material samples for approval by Owner.
- C. Shop Drawings: Indicate all safety zones, activity zones, buffer areas, and access points to play equipment.
- D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements and Consumer Product Safety Institute (CPSI) requirements. .
- E. Manufacturers' Instructions: Submit installation instructions.

1.12 CLOSEOUT SUBMITTALS

- A. Section 01 70 00 - Execution and Closeout Requirements specifies requirements for submittals.
- B. Manufacturer Reports: Indicate play equipment has been installed according to manufacturer's and CPSI requirements and meets American's with Disabilities Accessible Design Guidelines most current edition.
- C. Operation and Maintenance Data: Submit installation and maintenance manuals.

1.13 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 00 - Product Requirements specifies requirements for transporting, handling, storing, and protecting products.
- B. Deliver materials in manufacturer's packaging including application instructions.
- C. Inspection: Accept on Site. Inspect for damage.
- D. Store according to manufacturer's instructions.

1.14 EXISTING CONDITIONS

- A. Field Measurements: Verify field measurements prior to fabrication. Indicate field measurements on Shop Drawings.

1.15 WARRANTY

- A. Section 01 70 00 - Execution and Closeout Requirements specifies requirements for warranties.
- B. Furnish manufacturer's warranty for all materials.

PART 2 - PRODUCTS

2.01 GENERAL:

- A. Site Specificity of Design - Equipment selection is based on specific program requirements, physical constraints within the site, and public input. Requests for Product Substitution may be subject to certain subjective criteria including (in no particular order);
 - 1. Play Value
 - 2. Footprint
 - 3. Color Availability

4. Geometry
 5. Apparent Mass and/or Visual Density
 6. Adherence to ADA requirements (ADAAG)
- B. Variance - The Contractor/manufacturer shall submit with their bid a list of all variances from these specifications.

2.02 PLAY STRUCTURES:

- A. Dragon Head & Crawl Tunnel
1. Dragon Head and Crawl Tunnel by Landscape Structures, Inc.
 2. #104662 dated 24-May-2017
- B. Color specification will be provided by the Landscape Architect, from standard manufacturer's options, upon product submittal.

2.03 FINISHES

- A. Polyester (Powder) Coating - The polyester coating shall be uniformly applied by the electrostatic method to a thickness of three to five mils. Promptly after application of the powder, the coating shall be oven-cured at 400 degrees Fahrenheit. The color(s) of the polyester coating shall be as selected by the Landscape Architect from the manufacturer's standard and/or custom color selection charts.
- B. Vinyl - The vinyl coating shall be oven-cured poly-vinyl chloride plastisol with a minimum thickness of 1/8". The coating shall contain ultraviolet inhibitors and mold resisters. The color(s) of the vinyl coating shall be as selected by the Landscape Architect from the manufacturer's standard and/or custom color selection charts.
- C. Galvanized Finish - All components calling for a galvanized finish shall be hot-dipped galvanized to the manufacturer's standard after fabrication. All galvanized surfaces shall be free of burs, splinters, and sharp edges.
- D. Wood Preservation - All wood components shall be untreated or pressure-treated with a child-safe formulation suitable for use in playground equipment as approved by the Landscape Architect. Wood preservatives containing toxic chemicals such as arsenic, pentachlorophenol, or creosote shall not be permitted. The wood preservative shall not change the color of the wood to which it is applied. The wood shall be pressure impregnated by the closed cylinder vacuum pressure method of the American Wood Preserver's Associations (AWPA) and shall comply with SPR's Design Standard for Wood Use in Parks, per Section 06 00 0.01.

2.04 ADDITIONAL HARDWARE:

- A. Additional hardware shall be provided in sufficient quantity to complete assembly of the play equipment. All hardware shall be non-ferrous or if ferrous material is used shall be

galvanized, electrostatic zinc plated or polyester powder coated in accordance with the approved manufacturer's standard. Provide the Landscape Architect with any and all maintenance and repair supplies installation manuals, tool kits and materials shipped with each product for the Owner's inventory.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Section 01 70 00 - Execution and Closeout Requirements specifies requirements for installation examination.
- B. Examination of work area – Examine the areas and conditions under which work of this Section will be performed. Verify safety zones of all equipment before setting posts in concrete footings. Do not proceed until conditions detrimental to proper and timely completion of the work have been satisfactorily corrected and thus meet the manufacturer's instructions and the requirements of paragraph. Beginning work constitutes acceptance of conditions as satisfactory.

3.02 PREPARATION

- A. Section 01 70 00 - Execution and Closeout Requirements specifies requirements for installation preparation.

3.03 INSTALLATION OF COMPOUND STRUCTURES AND INDEPENDENT ACTIVITIES:

- A. Conform strictly to manufacturer's instructions using all appropriate materials, tools and accessories as required. Use only experienced personnel trained in play equipment construction. Layout all equipment prior to construction to insure compliance with safety zone clearances.
- B. Provide all concrete footings as required to properly place the equipment components. It is the Contractor's responsibility to adjust drainage pipe or other new utility locations to accommodate the equipment footings.

3.04 PROTECTION:

- A. During construction of the play equipment structures, provide PVC web fence material in sufficient quantities and wrap the structures to prevent public access onto the equipment. Maintain the fencing wrap after completion of the play equipment and safety surfacing installation through Physical Completion of the project.

3.05 INSPECTION:

- A. Following the Landscape Architect's inspection of the completed play equipment installation, perform repairs as necessary to meet or exceed the Landscape Architect's requirements for fit and finish and the specifications and guidelines as referenced in 1.06 Safety Guidelines and Standards, above.
- B. The contractor shall notify the local playground equipment representative and schedule a "Certified Playground Safety Inspector" to inspect the work. Submit inspection report to the Owner and Landscape Architect in writing for the file.

3.06 GUARANTEES:

- A. The Contractor shall guarantee that all work performed under this section shall be free from any defects in materials and workmanship. Upon notice in writing from the Landscape Architect to the Contractor within two (2) years of Physical Completion of the project, the Contractor shall, at no cost to the Owner, make all necessary repairs or replacements of the defective work in question. During this period of guarantee, the Owner shall perform normal maintenance and cleaning of the play area equipment

3.07 TOLERANCES

- A. Section 01 40 00 - Quality Requirements specifies requirements for tolerances.
- B. Maximum Variation from Plumb according to manufacturer's requirements:
- C. Maximum Offset from Indicated Alignment: according to manufacturer's requirements.

3.08 FIELD QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements specifies requirements for inspecting and testing.
- B. Require manufacturer to Inspect and approve installation is according to manufacturer's requirements.

3.09 CLEANING

- A. Section 01 70 00 - Execution and Closeout Requirements specifies requirements for cleaning.
- B. Clean all equipment prior to final acceptance by Owner.

END OF SECTION

PART 1 - GENERAL

1.01 SECTION INCLUDES:

- A. Subsoil materials.
- B. Topsoil materials.

1.02 RELATED SECTIONS:

- A. Section 31 05 16 - Aggregates for Earthwork.
- B. Section 31 22 13 - Rough Grading.
- C. Section 31 23 17 - Trenching.
- D. Section 31 23 23 - Fill.
- E. Section 31 37 00 - Riprap.
- F. Section 32 91 19 - Landscape Grading.
- G. Section 32 92 19 - Seeding and Soil Supplements.
- H. Section 32 93 00 - Plants.
- I. Section 33 46 00 - Subdrainage: Filter aggregate.
- J. Section 31 25 00 – Erosion and Sedimentation Control

1.03 REFERENCES

- A. Illinois Department of Transportation (IDOT) – Standard Specifications for Road and Bridge Construction, current edition (Standard Specifications)
- B. American Association of State Highway and Transportation Officials:
 - 1. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.
- C. ASTM International:
 - 1. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³)).

2. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³)).
3. ASTM D2487 - Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System).

1.04 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Samples: Submit, in air-tight containers, 10 lb sample of each type of fill to testing laboratory.
- C. Materials Source: Submit name of imported materials source.
- D. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.05 QUALITY ASSURANCE

- A. Perform Work in accordance with Standard Specifications.

PART 2 - PRODUCTS

2.01 SUBSOIL MATERIALS

- A. Subsoil
 1. Excavated and re-used material.
 2. Graded.
 3. Free of lumps larger than 3 inches, rocks larger than 2 inches, and debris.

2.02 TOPSOIL MATERIALS

- A. Topsoil
 1. Excavated and reused material.
 2. Graded.
 3. Free of roots, rocks larger than 1/2 inch, subsoil, debris, large weeds and foreign matter.
 - a. Screening: Single screened.

2.03 SOURCE QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Testing and Inspection Services Testing and analysis of soil material.
- B. Testing and Analysis of Subsoil Material: Perform in accordance with ASTM D1557. AASHTO T180.
- C. Testing and Analysis of Topsoil Material: Perform in accordance with ASTM D1557. AASHTO T180.
- D. When tests indicate materials do not meet specified requirements, change material and retest.
- E. Furnish materials of each type from same source throughout the Work.

PART 3 - EXECUTION

3.01 EXCAVATION

- A. Excavate subsoil and topsoil from areas designated. Strip topsoil to full depth of topsoil in designated areas.
- B. Stockpile excavated material meeting requirements for subsoil materials and topsoil materials.
- C. Remove excess excavated materials not intended for reuse, from site.

3.02 STOCKPILING

- A. Stockpile materials on site at locations indicated.
- B. Stockpile in sufficient quantities to meet Project schedule and requirements.
- C. Separate differing materials with dividers or stockpile apart to prevent mixing.
- D. Stockpile topsoil 16 feet high maximum.
- E. Prevent intermixing of soil types or contamination.
- F. Direct surface water away from stockpile site to prevent erosion or deterioration of materials.

3.03 STOCKPILE CLEANUP

- A. Remove stockpile, leave area in clean and neat condition. Grade site surface to prevent free standing surface water.
- B. When borrow area is indicated, leave area in clean and neat condition. Grade site surface to prevent free standing surface water.

END OF SECTION

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Coarse aggregate materials.
2. Fine aggregate materials.

B. Related Sections:

1. Section 31 05 13 - Soils for Earthwork: Fill and grading materials.
2. Section 31 22 13 - Rough Grading.
3. Section 31 23 17 - Trenching.
4. Section 31 23 23 - Fill.
5. Section 31 32 14 - Cement Soil Stabilization.
6. Section 31 32 15 - Lime Soil Stabilization.
7. Section 31 37 00 - Riprap.
8. Section 32 05 13 - Soils for Exterior Improvements.
9. Section 32 05 16 - Aggregates for Exterior Improvements
10. Section 32 11 23 - Aggregate Base Courses.
11. Section 32 14 13 - Precast Concrete Unit Paving.
12. Section 32 14 16 - Brick Unit Paving.
13. Section 32 14 40 - Stone Paving.
14. Section 32 91 19 - Landscape Grading.
15. Section 33 11 16 - Site Water Utility Distribution Piping.
16. Section 33 31 00 - Sanitary Utility Sewerage Piping.
17. Section 33 36 00 - Utility Septic Tanks.
18. Section 33 41 00 - Storm Utility Drainage Piping.
19. Section 33 46 00 - Subdrainage: Filter aggregate.
20. Section 33 51 00 - Natural-Gas Distribution.
21. Section 33 52 13 - Fuel-Oil Distribution.
22. Section 33 61 00 - Hydronic Energy Distribution.
23. Section 33 63 00 - Steam Energy Distribution.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. Aggregate:

1. Basis of Measurement: By **cubic yard**.
2. Basis of Payment: Includes supplying aggregate materials, stockpiling, placing, and compacting as required.

1.3 REFERENCES

- A. Illinois Department of Transportation – Standard Specifications for Road and Bridge Construction (most current edition) – Standard Specifications
- B. American Association of State Highway and Transportation Officials:

1. AASHTO M147 - Standard Specification for Materials for Aggregate and Soil-Aggregate Subbase, Base and Surface Courses.
 2. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.
- C. ASTM International:
1. ASTM C136 - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
 2. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³)).
 3. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³)).
 4. ASTM D2487 - Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System).
 5. ASTM D4318 - Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

1.4 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Samples: Submit, in air-tight containers in quantities as required by the testing laboratory.
- C. Materials Source: Submit name of imported materials suppliers.
- D. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.5 SUSTAINABLE DESIGN SUBMITTALS

- A. Section 01 81 13 - Sustainable Design Requirements: Requirements for sustainable design submittals.
- B. Manufacturer's Certificate: Certify products meet or exceed specified sustainable design requirements.
 1. Materials Resources Certificates:
 - a. Certify source for regional materials and distance from Project site.
 - b. Certify recycled material content for recycled content products.
- C. Product Cost Data: Submit cost of products to verify compliance with Project sustainable design requirements. Exclude cost of labor and equipment to install products.
 1. Provide cost data for the following products:
 - a. Regional products.
 - b. Products with recycled material content.

1.6 QUALITY ASSURANCE

- A. Furnish each aggregate material from single source throughout the Work.

- B. Perform Work in accordance with Standard Specifications.

PART 2 PRODUCTS

2.1 COARSE AGGREGATE MATERIALS

- A. Coarse Aggregate Type CA-1: Conforming Standard Specifications.
- B. Coarse Aggregate Type CA-6 Conforming Standard Specifications
- C. Coarse Aggregate Type CA-7 Conforming Standard Specifications

2.2 FINE AGGREGATE MATERIALS

- A. Fine Aggregate Type FA-1 Conforming Standard Specifications
- B. Sand: Natural river or bank sand; washed, free of silt, clay, loam, friable or soluble materials, and organic matter; Conforming Standard Specifications

2.3 PLAYGROUND RUBBER SAFETY SURFACE – “NO-FAULT” RUBBER SAFETY SURFACE AGGREGATE BASE MATERIAL

- A. Aggregate Type – McCook 210®.
- B. Target density minimum 90% AASHTO T99
 - 1. Permeability - a minimum of 28 ft/day (ASTM D2434)
 - 2. Stability - a minimum CBR of 20 (ASTM D1883)

2.4 SOURCE QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Testing and inspection services.
- B. Coarse Aggregate Material - Testing and Analysis: Perform in accordance with ASTM D698
- C. When tests indicate materials do not meet specified requirements, change material and retest.

PART 3 EXECUTION

3.1 EXCAVATION

- A. Excavate aggregate materials from on-site locations designated by Owner's Representative.
- B. Stockpile excavated material meeting requirements for coarse aggregate materials.

- C. Remove excess excavated materials not intended for reuse, from site.
- D. Remove excavated materials not meeting requirements for coarse aggregate materials and fine aggregate materials from site.

3.2 STOCKPILING

- A. Stockpile materials on site at locations indicated.
- B. Stockpile in sufficient quantities to meet Project schedule and requirements.
- C. Separate different aggregate materials with dividers or stockpile individually to prevent mixing.
- D. Direct surface water away from stockpile site to prevent erosion or deterioration of materials.

3.3 STOCKPILE CLEANUP

- A. Remove stockpile, leave area in clean and neat condition. Grade site surface to prevent free standing surface water.
- B. When borrow area is indicated, leave area in clean and neat condition. Grade site surface to prevent free standing surface water.

END OF SECTION

PART 1 - GENERAL

1.1 DEFINITIONS

- A. Topsoil: Natural or cultivated surface-soil layer containing organic matter and sand, silt, and clay particles; friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than 1 inches in diameter; and free of weeds, roots, and other deleterious materials.

1.2 MATERIALS OWNERSHIP

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

1.3 SUBMITTALS

- A. Record drawings according to Division 1 Section "Contract Closeout."
 - 1. Identify and accurately locate capped utilities and other subsurface structural, electrical, and mechanical conditions.

1.4 QUALITY ASSURANCE

- A. Pre-installation Conference: Conduct conference at Project site to comply with requirements.

1.5 PROJECT CONDITIONS

- A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.
 - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
 - 2. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.
- B. Improvements on Adjoining Property: Authority for performing indicated removal and alteration work on property adjoining Owner's property will be obtained by Owner before award of Contract.
- C. Salvable Improvements: Carefully remove items indicated to be salvaged and store on Owner's premises where indicated.
- D. Notify utility locator service for area where Project is located before site clearing.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

- A. Satisfactory Soil Materials: Requirements for satisfactory soil materials are specified in Division 2 Section "Earthwork."
 - 1. Obtain approved borrow soil materials off-site when satisfactory soil materials are not available on-site. **Cost to be included in base bid.**

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect and maintain benchmarks and survey control points from disturbance during construction.
- B. Provide erosion-control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.
- C. Locate and clearly flag trees and vegetation to be removed.
- D. Protect existing site improvements to remain from damage during construction.
 - 1. Restore damaged improvements to their original condition, as acceptable to Owner.

3.2 TREE PROTECTION

- A. Erect and maintain a temporary fence around drip line of individual trees or around perimeter drip line of groups of trees to remain. Remove fence when construction is complete.
 - 1. Do not store construction materials, debris, or excavated material within drip line of remaining trees.
 - 2. Do not permit vehicles, equipment, or foot traffic within drip line of remaining trees.
- B. Do not excavate within drip line of trees, unless otherwise indicated.
- C. Where excavation for new construction is required within drip line of trees, hand clear and excavate to minimize damage to root systems. Use narrow-tine spading forks, comb soil to expose roots, and cleanly cut roots as close to excavation as possible.
 - 1. Cover exposed roots with burlap and water regularly.
 - 2. Temporarily support and protect roots from damage until they are permanently relocated and covered with soil.
 - 3. Coat cut faces of roots more than 1-1/2 inches in diameter with an emulsified asphalt or other approved coating formulated for use on damaged plant tissues.

4. Cover exposed roots with wet burlap to prevent roots from drying out. Backfill with soil as soon as possible.
- D. Repair or replace trees and vegetation indicated to remain that are damaged by construction operations, in a manner approved by Owner.
1. Employ a qualified arborist, licensed in jurisdiction where Project is located, to submit details of proposed repairs and to repair damage to trees and shrubs.
 2. Replace trees that cannot be repaired and restored to full-growth status, as determined by the qualified arborist.

3.3 UTILITIES

- A. Owner will arrange for disconnecting and sealing indicated utilities that serve existing structures before site clearing when requested by Contractor.
1. Verify that utilities have been disconnected and capped before proceeding with site clearing.
- B. Locate, identify, disconnect, and seal or cap off utilities indicated to be removed.
1. Owner will arrange to shut off indicated utilities when requested by Contractor.
 2. Arrange to shut off indicated utilities with utility companies.
- C. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
1. Notify Owner not less than two days in advance of proposed utility interruptions.
 2. Do not proceed with utility interruptions without Owner's written permission.
- D. Excavate for and remove underground utilities indicated to be removed or relocated.
- E. Removal of underground utilities is included in Division 15 mechanical or Division 16 electrical Sections.

3.4 CLEARING AND GRUBBING

- A. Remove obstructions, trees, shrubs, grass, and other vegetation to permit installation of new construction. Removal includes digging out stumps and obstructions and grubbing roots.
1. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.
 2. Cut minor roots and branches of trees indicated to remain in a clean and careful manner where such roots and branches obstruct installation of new construction.
 3. Completely remove stumps, roots, obstructions, and debris extending to a depth of 18 inches below exposed sub-grade.

4. Use only hand methods for grubbing within drip line of remaining trees.
- B. Fill depressions caused by clearing and grubbing operations with satisfactory soil material, unless further excavation or earthwork is indicated.
 1. Place fill material in horizontal layers not exceeding 8-inch loose depth, and compact each layer to a density equal to adjacent original ground.

3.5 TOPSOIL STRIPPING

- A. Remove sod and grass before stripping topsoil.
- B. Strip topsoil to whatever depths are encountered in a manner to prevent intermingling with underlying subsoil or other waste materials.
 1. Strip surface soil of unsuitable topsoil, including trash, debris, weeds, roots, and other waste materials.
- C. Stockpile topsoil materials away from edge of excavations without intermixing with subsoil. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust.
 1. Limit height of topsoil stockpiles to 72 inches.
 2. Do not stockpile topsoil within drip line of remaining trees.
 3. Dispose of excess topsoil as specified for waste material disposal.
 4. Stockpile surplus topsoil and allow for respreading deeper topsoil.

3.6 SITE IMPROVEMENTS

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

3.7 DISPOSAL

- A. Disposal: Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials, including trash and debris, and legally dispose of them off Owner's property.

END OF SECTION

PART 1 GENERAL

1.01 SUMMARY

- A. General: Contract Work under this Section is subject to the requirements of the Documents, including the Supplementary Conditions.
- B. Description: Provide all labor, materials and equipment required for all demolition, removal, and disposal of items indicated on the drawings and as specified, including but not limited to the following:
 - 1. Existing foundations, asphalt paving and concrete pads within proposed improvement areas.
 - 2. Abandoned underground sewer pipe, conduits and duct banks interfering with the new construction.
 - 3. Lighting, power poles, wiring, other utilities as shown and directed by Construction Manager.
 - 4. All other demolition work shown or noted on drawings, or as required, to facilities new construction work.
 - 5. Debris.

1.02 SPECIAL REQUIREMENTS

- A. The Contractor shall be held responsible to have visited the site and fully determined to his own satisfaction all physical conditions; site characteristics; means of egress and access from and to the site; or any other peculiarities of access from and to the existing site which may influence or affect the cost of this work in any way.
- B. The Contractor shall be responsible for and shall protect adjoining properties and existing thoroughfares from damage to his operations. The Contractor shall provide and maintain all barricades, lights, and all other protective devices necessary to fulfill the intent of this work, including requirements of all Federal, State or Municipal laws or ordinances. Barricades, lights and other protective devices shall be relocated as construction work progresses, and removed upon completion and acceptance of the work, or when so directed by the Architect.

C. Utilities and Services:

1. The Contractor shall carefully examine all public records and data available regarding public utilities and services and confer where necessary with the respective departments of the local agencies having jurisdiction. Contractor shall also confer with the respective private service or utility agencies to fully determine the location of all underground utilities and services.

PART 2 PRODUCTS

2.01 NOT USED

PART 3 EXECUTION

3.01 EXAMINATION

- A. Section 01 70 00 - Execution and Closeout Requirements specifies requirements for installation examination.
- B. Verify location and requirements of all equipment and features to be removed and reinstalled under this contract.

3.02 GENERAL

- A. No demolition shall be commenced until a program of operations schedule has been coordinated with the Construction Manager, except that preparatory work may be started if specifically approved by and coordinated with the Construction Manager.
- B. Demolition work shall be done in such manner as to avoid hazards to persons and property and interference with the use of adjacent areas or interruption of free passage to and from such areas. Take care to prevent the spread of dust and flying particles.
- C. Demolition and removal work shall be executed in careful and orderly manner. Accumulation of rubbish will not be permitted.
- D. After work is started it shall be continued to completion at a rate that will allow the balance of the work to be completed within the time specified. If extra shifts are necessary beyond regular working hours, the work shall proceed with a minimum of nuisance to surrounding properties.
- E. Exact extent of demolition to be done may not be fully indicated by the drawings. The Contractor shall determine the nature and extent of demolition that will be necessary by comparing the drawings with the existing field conditions. It is expressly understood that this Contract includes all work of a demolition nature that may be required or necessary for a full and complete execution of the work, whether particularly referred to herein or not.
- F. Portions of existing sidewalk which interfere with new construction work, shall be removed as shown on the plans, or as directed by the Architect. In removing sidewalk, provisions shall be made for satisfactory transition between replacement and the portion

remaining in place. The Contractor shall saw cut to a minimum depth of 1½" inches with a concrete sawing machine to prevent the surface from spalling when the concrete is broken out. This work shall be done in such a manner that a straight joint will be ensured.

- G. Portions of existing concrete curb, gutter, combination curb and gutter which interfere with new construction work shall be removed as shown on the plans, or as directed by the Construction Manager. In removing concrete curb, gutter, combination curb and gutter, provisions shall be made for satisfactory transition between replacements and the portion remaining in place. The Contractor shall saw cut to a minimum depth of 1 ½" inches with a concrete sawing machine to prevent the surface from spalling when the concrete is broken out. This work shall be done in a manner that a straight joint will be ensured.
- H. Removal of Abandoned Improvements as designated in Paragraph 1.01B.2 above.

3.03 DISPOSAL

- A. The Contractor is responsible for off-site disposal in conformance with all applicable regulations unless otherwise provided for in the contract documents.
- B. Except as otherwise specified, the Contractor shall be entitled to all salvageable materials resulting from the demolition work.
- C. Remove all wrecked materials, debris and rubbish from the site. Under no circumstances shall debris or rubbish be allowed to accumulate on the premises.

3.04 REMOVAL

- A. On completion of the demolition and removal, clean the areas affected, including areas outside the limits of the Contractor's work area where permission to work has been granted. Remove surplus construction material or debris resulting from the demolition work and dispose of legally off the site.
- B. Access routes to and from the site shall be kept clean of debris resulting from the work.
- C. Burning of rubbish or debris on or near the premises will not be permitted.
- D. If required, deliver to Owner from the truck and place equipment/material in the area designated by the Owner.

END OF SECTION

PART 1 - GENERAL

1.01 SECTION INCLUDES:

- A. Excavating topsoil.
- B. Excavating subsoil.
- C. Cutting, grading, filling, rough contouring, compacting, and spreading of topsoil for site structures, building pads, and landscaping and restoration.

1.02 RELATED SECTIONS:

- A. Section 03 30 00 - Cast-In-Place Concrete
- B. Section 31 05 13 - Soils for Earthwork: Soils for fill.
- C. Section 31 05 16 - Aggregates for Earthwork: Aggregates for fill.
- D. Section 31 10 00 - Site Clearing: Excavating topsoil.
- E. Section 31 23 16 - Excavation
- F. Section 31 25 00 – Erosion and Sedimentation Controls
- G. Section 32 12 16 - Asphalt Paving
- H. Section 32 91 19 - Landscape Grading: Finish grading with topsoil to contours.
- I. Section 33 41 00 - Storm Utility Drainage Piping
- J. Section 33 42 13 - Pipe Culverts
- K. Section 33 46 00 – Subdrainage

1.03 STANDARDS

- A. State Highway Specifications means the "ILLINOIS DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION," current edition including all supplements.
- B. All work required under this section shall conform to the State Highway Specifications whenever applicable.

1.04 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Topsoil Fill Type S4:
 - 1. Basis of Measurement: By cubic yard.
 - 2. Basis of Payment: Includes excavating existing soil, stockpiling, scarifying substrate surface, placing where required, and compacting.
- B. Subsoil Fill Type S1:
 - 1. Basis of Measurement: By the cubic yard
 - 2. Basis of Payment: Includes excavating existing subsoil, supplying subsoil materials, stockpiling, scarifying substrate surface, placing where required, and compacting.
- C. Structural Fill Type S2:
 - 1. Basis of Measurement: By the cubic yard
 - 2. Basis of Payment: Includes excavating existing subsoil, supplying structural fill materials, stockpiling, scarifying substrate surface, placing where required, and compacting.
- D. Structural Fill Type A2:
 - 1. Basis of Measurement: By the cubic yard
 - 2. Basis of Payment: Includes excavating existing subsoil, supplying structural fill materials, stockpiling, scarifying substrate surface, placing where required, and compacting.
- E. Granular Fill Type A1:
 - 1. Basis of Measurement: By the cubic yard
 - 2. Basis of Payment: Includes supplying granular fill materials, stockpiling, scarifying substrate surface, placing where required, and compacting.

1.05 REFERENCES

- A. Illinois Department of Transportation (IDOT) Standard Specifications for Road and Bridge Construction, current edition.
- B. American Association of State Highway and Transportation Officials:
 - 1. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.
- C. ASTM International:
 - 1. ASTM C136 - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
 - 2. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³)).

3. ASTM D1556 - Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method.
4. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³)).
5. ASTM D2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
6. ASTM D2419 - Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate.
7. ASTM D2434 - Standard Test Method for Permeability of Granular Soils (Constant Head).
8. ASTM D2922 - Standard Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
9. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).

1.06 PROTECTION

- A. During grading operations, drainage of the work under construction and adjacent areas affected by the work shall be protected and maintained continuously. If during the execution of the work it is necessary to interrupt existing storm drainage, temporary drainage facilities shall be provided until the permanent drainage work has been completed. Such temporary drainage facilities shall be at the Contractor's expense.
- B. Protect existing above and below grade utilities that remain.
- C. Protect bench marks, survey control points, existing structures/fences, walks, paving and curbs from grading equipment and vehicular traffic
- D. Protect all work in progress from damage due to extremes of cold, moisture, or drying, or mechanical damage from equipment traffic or foot traffic. Alert the Landscape Architect to the presence of conditions that may adversely affect the quality of the work, the physical structure of soils, or transport of site soils off-site.

1.07 ADJUSTMENTS

- A. A. The Owner reserves the right to make minor adjustments in lines and grades as the work progresses whenever such changes are considered necessary to better accomplish the true intent of the plans, or to obtain a closer balance between cuts and fills

1.08 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Samples: Submit, in air-tight containers, 10 lb sample of each type of fill to testing laboratory.
- C. Materials Source: Submit name of imported materials suppliers.

- D. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.09 CLOSEOUT SUBMITTALS

- A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for submittals.
- B. Project Record Documents: Accurately record actual locations of utilities remaining by horizontal dimensions, elevations or inverts, and slope gradients.

1.10 QUALITY ASSURANCE

- A. Perform Work in accordance with ASTM C136, ASTM D2419, and ASTM D2434.
- B. Perform Work in accordance with Illinois Department of Transportation Standard Specifications for Road and Bridge Construction current edition.
- C. Contractor to verify the accuracy of all survey information provided by the Owner prior to commencing excavations or filling operations. Commencement of these operations constitutes acceptance of the survey information as appropriate to meet the intent of the Contract.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. On-Site Soils
 - 1. All approved soils from cut areas shall be used as fill to fulfill the plan intent.
 - 2. Remove unsuitable materials (except topsoil) and excess cut when directed by the Construction Manager from the site.
- B. Topsoil: Type S4 as specified in Section 31 05 13.
- C. Subsoil Fill: Type S1 as specified in Section 31 05 13.
- D. Structural Fill: Type S2 as specified in Section 31 05 13.
- E. Structural Fill: Type A2 as specified in Section 31 05 16.
- F. Granular Fill: Type A1 as specified in Section 31 05 16.

2.02 EQUIPMENT

- A. Provide and maintain on the job sufficient equipment of the types needed to complete all work in accordance with the requirements of these specifications. Earth moving equipment capable of accomplishing the specified required results may be used.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Section 01 30 00 - Administrative Requirements: Verification of existing conditions before starting work.
- B. Verify survey bench mark and intended elevations for the Work are as indicated on Drawings.

3.02 PREPARATION

- A. Call Local Utility Line Information service at 1-800-892-0123 not less than three working days before performing Work.
 - 1. Request underground utilities to be located and marked within and surrounding construction areas.
- B. Identify required lines, levels, contours, and datum.
- C. Protect utilities indicated to remain from damage.
- D. Protect plant life, lawns, and other features remaining as portion of final landscaping.
- E. Protect bench marks, survey control point, existing structures, fences, sidewalks, paving, and curbs scheduled to remain from excavating equipment and vehicular traffic.
- F. Stake and flag locations of known utilities.
- G. Remove all topsoil from within the building areas
- H. Excavate under pavement areas to accommodate improvement and proof-roll prior to additional topsoil excavation.
- I. In fill areas less than 1-foot not under buildings or pavement, topsoil may remain undisturbed.
- J. Stockpile all topsoil where indicated on plan for future use as herein directed, or for disposal by the Owner.
- K. All vegetation encountered during the grading operations shall be considered incidental to grading. Remove all such materials from the site.

3.03 TOPSOIL EXCAVATION

- A. Excavate topsoil from areas to be further excavated, landscaped, or regraded, without mixing with foreign materials for use in finish grading.
- B. Do not excavate wet topsoil.
- C. Stockpile in area designated on site to depth not exceeding 16 feet and protect from erosion.
- D. Do not remove topsoil from site.

3.04 SUBSOIL EXCAVATION

- A. Excavate subsoil from areas to be further excavated, landscaped, or regraded.
- B. Do not excavate wet subsoil.
- C. When excavating through roots, perform Work by hand and cut roots with sharp axe.
- D. Stockpile excavated material in area designated on site in accordance with Section 31 05 13.
- E. Remove unsuitable material to depth as directed by the Construction Manager to accommodate improvements. Proof-roll subsoil prior to further excavation of subsoil. If unsuitable subsoil is encountered notify the Construction Manager for further instructions.
- F. Any over-excavation of subsoil prior to receiving Owner's written authorization will not be paid for by Owner.
- G. Excavation of solid rock in ledges, bedded deposits or conglomerate deposits so firmly cemented as to present all of the characteristics of solid rock, and which cannot be removed with conventional earthmoving equipment without drilling and blasting is excluded from the work of this Section; boulders greater than 1-cubic yard are also excluded from this Section.
- H. Benching Slopes: Horizontally bench existing slopes greater than 1: 4 to key placed fill material to slope to provide firm bearing.
- I. Stability: Replace damaged or displaced subsoil as specified for fill.

3.05 FILLING

- A. Fill areas to contours and elevations with unfrozen materials.
- B. Do not use unstable or unsuitable excavated material for fill without written authorization from Owner.
- C. All fill materials shall be spread over the entire area whenever practicable. Each layer shall be spread uniformly, be kept leveled by means of approved equipment and thoroughly compacted so that it will be uniform in cross section and meet the compaction requirements before the next layer is started
- D. Place fill material on prepared areas in continuous layers and compact in accordance with schedule at end of this section.
- E. Maintain optimum moisture content of fill materials by discing or aeration to attain required compaction density.
- F. Slope grade away from building minimum 2 percent slope for minimum distance of 10 ft (3048 mm), unless noted otherwise.
- G. Make grade changes gradual. Blend slope into level areas.
- H. Repair or replace items indicated to remain damaged by excavation or filling.

3.06 COMPACTION

- A. Each layer of fill material shall be disked or mechanically pulverized sufficiently to break down over-sized clods and thoroughly mix the different materials to secure uniform moisture content and insure uniform density and proper compaction. After each layer has been spread disked, it shall be compacted with approved mechanical equipment.
- B. Lifts shall not exceed 8.0-inches when uncompacted
- C. Fill under all pavement and building areas shall be construction to obtain minimum compaction of 95% modified Proctor test ASTM D-1557.
- D. Fill under all turf and planting areas shall be constructed to obtain minimum 90% modified Proctor test ASTM D-1557.
- E. The percentage of compaction to be achieved, as stated above, will conform to the maximum obtainable at optimum moisture as specified by ASTM. D-1557.
- F. All fill material shall contain the proper moisture content to achieve the required compaction. When fill material requires moisture to be added, it shall be done with approved equipment

3.07 TOPSOIL PLACEMENT

- A. On all proposed turf and planting areas where clay soil unsuitable for turf culture or nursery stock is either added as "fill" or exposed as "cut," a clay sub-grade shall be established 0.5-feet below finished grade elevation.
- B. Coordinate grading operations within the work limits. Scarify subgrades to a minimum depth of three (3) inches prior to placement of topsoil to ensure bonding of subsoil and topsoil.
- C. Handle topsoil to prevent excessive consolidation.

3.08 TOLERANCES

- A. Section 01 40 00 - Quality Requirements: Tolerances.
- B. Top Surface of Subgrade: Plus or minus 1/10 foot from required subgrade elevation.
- C. Allow for compaction and settlement in fill areas and placement of topsoil in both cut and fill areas.

3.09 FIELD QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements 01 70 00 - Execution and Closeout Requirements: Field inspecting, testing, adjusting, and balancing.
- B. Perform laboratory material tests in accordance with ASTM D-1557. ASTM D-698.
- C. Perform in place compaction tests in accordance with the following:
 - 1. Density Tests: ASTM D-1556, or ASTM D-2922.
 - 2. Moisture Tests: ASTM D-3017.

- D. When tests indicate Work does not meet specified requirements, remove Work, replace, and retest.
- E. Frequency of Tests: as required by Construction Manager.

3.10 SCHEDULES

- A. Structural Fill:
 - 1. Fill Type S2: To subgrade elevation.
 - 2. Compact uniformly to minimum 95% modified Proctor test ASTM D-1557.
- B. Structural Fill:
 - 1. Fill Type A2: To subgrade elevation.
 - 2. Compact uniformly to minimum 95% modified Proctor test ASTM D-1557.
- C. Subsoil Fill under pavement areas:
 - 1. Fill Type S1: To subgrade elevation.
 - 2. Compact uniformly to minimum 95% modified Proctor test ASTM D-1557.
- D. Subsoil Fill under landscape areas:
 - 1. Fill Type S1: To subgrade elevation.
- E. Compact uniformly to minimum 90% modified Proctor test ASTM D-1557.
- F. Topsoil Fill:
 - 1. Fill Type S4: To subgrade elevation.
- G. Compact uniformly to minimum 90% modified Proctor test ASTM D-1557.

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION

- A. General: Work under this Section is subject to the requirements of the Contract Documents, including the Supplementary Conditions.
- B. Furnish and Install: all excavation indicated on the drawings and specified, including but not limited to the following:
- C. The work under this section includes the furnishing of all labor, materials, equipment, tools, transportation and services, to perform all the excavation, including all general machine or hand excavating and backfilling; compacting and rough grading; stone fill under sidewalks, platforms and concrete slabs on grade and related items as required for and incidental to the completion of the work, as indicated on the drawings and specified herein.
- D. Excavating, filling and backfilling shall include but is not necessarily limited to the following:
 - 1. Excavating for footings and foundation walls, platforms, and stock piling of excavated material that may be approved for use as backfill and rough grading.
 - 2. Remove and dispose of all unsuitable material encountered within the limits of the excavation for the proposed footings, foundations, walkways, and pavements.
 - 3. Place engineered backfill and compact to achieve minimum bearing capacity as specified.
 - 4. Provide, place and compact to required grade approved backfill material obtained from excavation or from off-site (borrow excavated material).
 - 5. Top of compacted sub-grade shall allow for the placement of paving, plus the compacted stone base or other type granular, base as shown or specified.
 - 6. Removing all subsurface obstructions as required to perform all excavating, backfilling and grading work, except utilities which will be removed or relocated as hereinafter specified.

1.02 SECTION INCLUDES:

- A. Soil densification.
- B. Excavating for paving, roads, and parking areas.

- C. Excavating for slabs-on-grade.
- D. Excavating for site structures.
- E. Excavating for landscaping.

1.03 RELATED SECTIONS:

- A. Section 31 05 13 - Soils for Earthwork: Stockpiling excavated materials.
- B. Section 31 05 16 - Aggregates for Earthwork: Stockpiling excavated materials.
- C. Section 31 22 13 - Rough Grading: Topsoil and subsoil removal from site surface.
- D. Section 31 23 17 - Trenching: Excavating for utility trenches.
- E. Section 31 23 23 - Fill.
- F. Section 31 25 00 – Erosion and Sedimentation Control:
- G. Section 33 11 16 - Site Water Utility Distribution Piping.

1.04 REFERENCES

- A. Local utility standards when working within 24 inches of utility lines.
- B. Illinois Department of Transportation (IDOT) Standard Specifications for Road and Bridge Construction, current edition (Standard Specifications)
- C. American Association of State Highway and Transportation Officials:
 - 1. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.
- D. ASTM International:
 - 1. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³)).
 - 2. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³)).
 - 3. ASTM D2487 - Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System)

1.05 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.

1.06 QUALITY ASSURANCE

- A. Perform Work in accordance with Standard Specifications.

1.07 INSPECTIONS AND TESTS

- A. All earthwork inspection and tests specified herein, or deemed required by the Construction Manager or Landscape Architect, will be conducted by a testing laboratory employed by the Owner. These tests shall include analysis and determination of the quality of the earth strata at required excavation elevations, sub-grade compaction, backfilling and compaction operations, and such as indicated or required.
- B. The Contractor shall give notice, to the Construction Manager and the Landscape Architect of each operation at least two (2) working days in advance to allow ample time for the testing laboratory, Construction Manager, or Landscape Architect to witness inspections.
- C. Maximum density and optimum moisture content of soils and aggregates shall be determined in accordance with ASTM D-1557
- D. Testing required because of changes in materials, methods, faulty workmanship or work which fails to meet the contract requirements, shall be at the Contractor's expense.

1.08 SPECIAL REQUIREMENT

- A. Job Conditions:
 - 1. Site Conditions: The Contractor will be held to have visited the site before bidding and shall examine to his satisfaction the soil, its condition and characteristics, traffic and means of access and any other features which may affect or influence the cost of the work.
 - 2. Benchmarks: The Contractor shall use established bench marks and other reference points and replace same if they are destroyed or disturbed in any manner, due to his operation.
 - 3. Utilities: The Contractor shall make all necessary arrangements and provide all services required to protect existing utility lines scheduled to remain in the way of new work and all other items of this character. He shall assume all responsibility for coordinating his work with the utilities involved.

4. The storage of equipment when not in use, shall be located in areas and in such a manner which will not interfere with normal conduct of construction on the site. Locations selected for collection of debris and/or storage of equipment or material shall be subject to approval of the Owner.
5. The Contractor shall be responsible for and shall protect existing buildings and structures on the site when applicable, and adjoining properties and public thoroughfares from damage due to his operations. The Contractor shall provide all temporary barricades, lights and other protective devices necessary to fulfill the intent of the Work, including requirements of all Federal, State, or Municipal laws or ordinances, and maintain same for the full period of this operation, removing same when directed or no longer required. Excavations shall be protected at all times and maintained in good order until backfill is in place.

PART 2 - PRODUCTS

2.01 FILLING AND BACKFILLING MATERIALS

- A. Materials, other than approved excavated material, for filling and backfilling shall conform to the following:
 1. Crushed Stone; shall be CA-6 complying with Section 1004 of the Standard Specifications.
 2. Stabilization Stone: CA-1 complying with Section 1004 of the Standard Specifications.
 3. Sand: FA-1, FA-2, FA-6 or FA-21 complying with Section 1003 of the Standard Specifications.
 4. Approved Backfill Material: shall be either excavated material specifically approved for the backfill or approved off site borrowed earth fill containing no sod, frozen material, organic material or any material which, by decay or otherwise, might cause settlement; also no rock, stones, or broken concrete more than 3 inches in the largest dimension will be permitted.
 5. All materials: shall be subject to approval by the testing laboratory

PART 3 - EXECUTION

3.01 PREPARATION

- A. Call Local Utility Line Information service at 800-892-0123 not less than three working days before performing Work.
 1. Request underground utilities to be located and marked within and surrounding construction areas.

- B. Identify required lines, levels, contours, and datum.
- C. Protect utilities indicated to remain from damage.
- D. Protect plant life, lawns, and other features remaining as portion of final landscaping.
- E. Protect benchmarks, survey control points, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.

3.02 EXCAVATION

- A. Underpin adjacent structures which may be damaged by excavation work.
- B. Excavate subsoil to accommodate improvements, slabs-on-grade paving and site structures, and construction operations.
- C. Excavate for shelter foundations and footings, light pole and signage foundations, slabs on grade and paved areas, removing all fill material down to the elevations indicated on the drawings or to suitable soil bearing strata. In all cases the work shall rest on soil or approved fill which is capable of supporting the required loads. To this end the Contractor shall consult the Landscape Architect and obtain approval before removing equipment.
- D. Excavation shall provide sufficient space to permit erection of forms, placing of work, removal of forms, etc. and shall be left open until concrete, and any other work has been inspected and approved by the Landscape Architect.
- E. The bottom of all excavations shall be properly leveled off. All loose materials shall be removed from excavations. All wood, timber and organic materials, that are exposed at the bottoms of all excavations shall be removed and the local depression backfilled and compacted.
- F. Material that is to be excavated is assumed to be earth and other materials that can be removed with a power shovel. If rock is encountered within the limits of excavation, the Contractor shall immediately notify the Landscape Architect and shall not proceed further until instructions are given and measurements made for the purpose of establishing volume of rock excavations. Rock is defined as any stone or boulder $\frac{1}{2}$ cubic yards or larger in size and/or ledge rock that cannot be removed by power shovel or without the use of continuous drilling or by pneumatic hammers.
- G. Any excess or unauthorized excavations shall be backfilled with crushed stone and/or approved material compacted, at no additional cost to the Owner.
- H. The drawings indicate the Required Subgrade Level for footings, sidewalks and pavements. If suitable bearing is not encountered at these levels, the Contractor shall

remove all unsuitable soil to the depth specified by the Landscape Architect and place compacted engineered fill to obtain the bearing capacity required. The cost for additional excavation and backfill shall be paid for by the cubic yard. This price shall include excavating, hauling, and disposal of unsuitable material and placement and compaction of engineered backfill.

- I. Operations shall be done in such manner as to avoid hazards to persons and property and interference with the use of adjacent areas or interruption of free passage to and from such areas. Care shall be taken to prevent the spread of dust and flying particles.
- J. Excavation and removal work shall be executed in a careful and orderly manner. Accumulation of rubbish will not be permitted.
- K. After work is started it shall be continued to completion at a rate that will allow the balance of the work to be completed within the time specified. If extra shifts are necessary beyond regular working hours the work shall proceed with a minimum of nuisance to surrounding properties.
- L. Use of dynamite or blasting on the site is not permitted.
- M. Metal track or cleat equipment shall not be operated over existing drives, sidewalks, curbs, and other facilities on the premises. Damage to such facilities, caused by the Contractor's equipment, shall be repaired to the satisfaction of the Owner and at the Contractor's expense.
- N. Exact extent of excavation work to be done is not fully indicated by accompanying drawings. Determine the nature and extent of excavations that will be necessary by comparing the drawings with the existing conditions at the site. It is expressly understood that this contract includes all work of a excavation nature, except for utilities as herein before noted, that may be required or necessary to a full and complete execution of excavating whether particularly referred to herein or not.
- O. Legally dispose of all excess excavated material and unacceptable backfill material. Also, remove and dispose of all wood and organic filled exposed at required excavation elevations. All debris and rubbish shall be removed, and the site left in an acceptably clean condition.
- P. Excavate to working elevation for piling work.
- Q. Compact disturbed load bearing soil in direct contact with foundations to original bearing capacity; perform compaction in accordance with Section 31 23 23 and Section 31 23 17.
- R. Slope banks with machine to angle of repose or less until shored.
- S. Do not interfere with 45 degree bearing splay of foundations.

- T. Grade top perimeter of excavation to prevent surface water from draining into excavation.
- U. Trim excavation. Remove loose matter.
- V. Notify Owner's Representative of unexpected subsurface conditions.
- W. Correct areas over excavated with structural fill specified in Section 31 23 23 as directed by Owner's Representative.
- X. Stockpile subsoil in area designated on site to depth not exceeding 16 feet and protect from erosion.
- Y. Repair or replace items indicated to remain damaged by excavation.

3.03 DRAINAGE

- A. The Contractor shall provide and maintain all required bilge pumps, suction and discharge lines, et., and power for running same in sufficient number and capacity to keep all excavations, free from standing water at all times, including such times as concreting operations are in progress. Above equipment shall be maintained in good condition and operation, when so required, until excavations are backfilled.
- B. Any pumping discharge into Village or City sewer system shall be either by way of an approved settling basin system or through adequate screening and filtering media prior to discharge into the sewer.

3.04 BACKFILLING

- A. Place approved fill and backfill material and compact in lifts to the proper elevations, as a part of this work.
- B. No fill, backfill or sub-base shall be placed in standing water, on frozen ground or on surfaces which have not been tested and/or approved by the Owner.
- C. Suspend compaction operations, when, in the opinion of the Owner satisfactory results cannot be obtained because of rain or other unsatisfactory conditions.
- D. A uniform moisture content will be required throughout the layers of fill material. Wetting or drying manipulation shall be performed as required to accomplish uniformity. Suspend compaction operations when, in the Owner's opinion, satisfactory results cannot be obtained because of rain or other unsatisfactory conditions.

- E. Backfilling for all areas outside of walls, except in paved areas shall be approved material. Backfill shall be compacted to 95% maximum density in accordance with ASTM D 1557 in maximum lifts of 6 inches.
- F. Backfill, fill and base under footings, pavements and sidewalks shall be Crushed Stone Fill, or Stabilization Stone as shown on the drawings or ordered by the Landscape Architect. This backfill, fill or base shall be placed and spread in layers or lifts having loose thickness not to exceed twelve inches (12") as indicated and compacted to 95% maximum density as determined by ASTM D 1557. The surface shall then be accurately graded and finished to the proper grades

3.05 PROOF ROLLING

- A. Any exterior slabs on grade and pavement areas, shall be inspected and approved by the Landscape Architect and then proof-rolled with a twenty-five (25) ton or heavier, steel or pneumatic tired roller making at least 4 passes over the entire area in alternate (perpendicular) directions. Any continuously yielding or unstable areas shall be locally excavated and backfilled with crushed Stone (twelve) inch thick layers with each layer and the entire sub-grade areas compacted to 95% of maximum density as determined by ASTM D 1557.

3.06 ROUGH GRADING

- A. Rough grade areas below finished grades and compact, including all areas of aggregate beds. Leave surfaces prepared for base and surface finishing or required thicknesses as indicated.
- B. The limits of area to be graded shall be as necessary to produce new established grade levels, with easy slopes away from shelter buildings (when applicable) and walks.

3.07 FIELD QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Field inspecting, testing, adjusting, and balancing.
- B. Request inspection of excavation and controlled fill operations in accordance with applicable code.
- C. Request visual inspection of bearing surfaces by inspection agency before installing subsequent work.

3.08 PROTECTION

- A. Prevent displacement or loose soil from falling into excavation; maintain soil stability.
- B. Protect bottom of excavations and soil adjacent to and beneath foundation from freezing.
- C. Protect structures, utilities and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth operations.

3.09 CLEAN UP

- A. On completion of the work and before acceptance by the Landscape Architect, thoroughly clean the areas affected, including areas outside the limits of the Contractor's work area where permission to work has been granted. Remove surplus construction material or debris resulting from the work and dispose of legally off the site.
- B. Access routes to and from the site will be designated by the Landscape Architect and shall be kept clean of earth debris and material of any sort.
- C. Burning of rubbish or debris on or near the premises will not be permitted.

END OF SECTION

PART 1 - GENERAL

1.01 SECTION INCLUDES:

- A. Backfilling site structures to subgrade elevations.
- B. Fill under slabs-on-grade.
- C. Fill under paving.
- D. Fill for over-excavation.

1.02 RELATED SECTIONS:

- A. Section 03 30 00 - Cast-In-Place Concrete: Concrete materials.
- B. Section 31 05 13 - Soils for Earthwork: Soils for fill.
- C. Section 31 05 16 - Aggregates for Earthwork: Aggregates for fill.
- D. Section 31 22 13 - Rough Grading: Site filling.
- E. Section 31 23 16 - Excavation.
- F. Section 31 23 17 - Trenching: Backfilling of utility trenches.
- G. Section 32 91 19 - Landscape Grading: Filling of topsoil to finish grade elevation.
- H. Section 33 11 16 - Site Water Utility Distribution Piping.
- I. Section 33 46 00 - Subdrainage:
- J. Document: Geotechnical report; bore hole locations and findings of subsurface materials.

1.03 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Structural Fill:
 - 1. Basis of Payment: Includes supplying fill material, stockpiling, scarifying substrate surface, placing where required, and compacting.

1.04 REFERENCES

- A. Illinois Department of Transportation – Standard Specifications for Road and Bridge Construction – current edition (Standard Specifications)
- B. American Association of State Highway and Transportation Officials:
 - 1. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.
- C. ASTM International:
 - 1. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³)).
 - 2. ASTM D1556 - Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method.
 - 3. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³)).
 - 4. ASTM D2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
 - 5. ASTM D2922 - Standard Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
 - 6. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).

1.05 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Product Data: Submit data for geotextile fabric indicating fabric and construction.
- C. Samples: Submit, in air-tight containers, 10 lb sample of each type of Type fill to testing laboratory.
- D. Materials Source: Submit name of imported fill materials suppliers.
- E. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.06 QUALITY ASSURANCE

- A. Perform Work in accordance with Standard Specifications.

PART 2 - PRODUCTS

2.01 FILL MATERIALS

- A. Subsoil Fill: as specified in Section 31 05 13.
- B. Granular Fill: as specified in Section 31 05 16.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.
- B. Verify subdrainage, dampproofing, or waterproofing installation has been inspected.
- C. Verify structural ability of unsupported walls to support loads imposed by fill.

3.02 PREPARATION

- A. Compact subgrade to density requirements for subsequent backfill materials.
- B. Cut out soft areas of subgrade not capable of compaction in place. Backfill with granular fill and compact to density equal to or greater than requirements for subsequent fill material.
- C. Scarify subgrade surface to depth of 3 inches.
- D. Proof roll to identify soft spots; fill and compact to density equal to or greater than requirements for subsequent fill material.

3.03 BACKFILLING

- A. Backfill areas to contours and elevations with unfrozen materials.
- B. Systematically backfill to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen or spongy subgrade surfaces.
- C. Place material in continuous layers as follows:
 - 1. Subsoil Fill: Maximum 8 inches compacted depth.
 - 2. Structural Fill: Maximum 6 inches compacted depth.
 - 3. Granular Fill: Maximum 6 inches compacted depth.
- D. Employ placement method that does not disturb or damage other work.

- E. Maintain optimum moisture content of backfill materials to attain required compaction density.
- F. Backfill simultaneously on each side of unsupported foundation walls until supports are in place.
- G. Slope grade away from building minimum 2 percent slope for minimum distance of 10 ft, unless noted otherwise.
- H. Make gradual grade changes. Blend slope into level areas.

3.04 TOLERANCES

- A. Section 01 40 00 - Quality Requirements: Tolerances.
- B. Top Surface of Backfilling: Plus or minus 1 inch from required elevations.
- C. Top Surface of Backfilling Under Paved Areas: Plus or minus 1 inch from required elevations.
- D. Top Surface of General Backfilling: Plus or minus 1 inch from required elevations.

3.05 FIELD QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Field inspecting, testing, adjusting, and balancing.
- B. Perform laboratory material tests in accordance with ASTM D1557.
- C. Perform in place compaction tests in accordance with the following:
 - 1. Density Tests: ASTM D1556, ASTM D2167, or ASTM D2922.
 - 2. Moisture Tests: ASTM D3017.
- D. When tests indicate Work does not meet specified requirements, remove Work, replace and retest.
- E. Proof roll compacted fill surfaces under slabs-on-grade, pavers, and paving.

3.06 PROTECTION OF FINISHED WORK

- A. Section 01 70 00 - Execution and Closeout Requirements: Protecting finished work.
- B. Reshape and re-compact fills subjected to vehicular traffic.

END OF SECTION

PART 1 - GENERAL

1.01 SECTION INCLUDES:

- A. Silt Fence
- B. Stabilized Construction Entrance
- C. Dust Control
- D. Temporary Seed
- E. Erosion Control Blanket
- F. Turf Reinforcement Mat (TRM)
- G. Turf Reinforcement Mat (Heavy Duty)(TRM)
- H. Temporary Erosion Control - Polyacrylamide (PAM)
- I. Hydromulch
- J. Ditch Check
- K. Inlet Filters
- L. Diversion Channels.
- M. Rock Energy Dissipator.
- N. Paved Energy Dissipator.
- O. Rock Basin.
- P. Rock Barriers.
- Q. Sediment Ponds.
- R. Sediment Traps.

1.02 RELATED SECTIONS:

- A. Section 03 10 00 - Concrete Forming and Accessories.
- B. Section 03 20 00 - Concrete Reinforcing.
- C. Section 03 30 00 - Cast-In-Place Concrete.
- D. Section 31 05 13 - Soils for Earthwork.
- E. Section 31 05 16 - Aggregates for Earthwork.
- F. Section 31 10 00 - Site Clearing.
- G. Section 31 10 10 - Demolition And Removal

- H. Section 31 23 16 - Excavation.
- I. Section 31 23 17 – Trenching
- J. Section 31 23 19 - Dewatering
- K. Section 31 23 23 - Fill.
- L. Section 32 13 13 - Concrete Paving.
- M. Section 32 91 19 - Landscape Grading.
- N. Section 32 92 19 - Seeding and Soil Supplements.
- O. Section 33 42 13 - Pipe Culverts.

1.03 DESCRIPTION

- A. Scope: Furnish all materials, labor, equipment and services necessary for and reasonably incidental to the proper execution of the project as shown on drawings and/or specified and/or directed. Contractor is responsible for all soil erosion/sedimentation control measures identified on the Plans.
- B. Description: Erosion control for this work includes, but is not limited to earthwork and grading operations for installation of soil erosion and sedimentation control measures and includes regular maintenance as required by the NPDES permit minimally weekly or within 24-hours of any rain or precipitation event greater than ½ inch.

1.04 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Diversion Channel:
 - 1. Basis of Payment: Includes excavating, windrowing, compacting, seeding, and mulching.
- B. Rock Energy Dissipator:
 - 1. Basis of Payment: Includes cleaning, excavating, backfilling, placing embankment, placing geotextile fabric, placing rock, and required grouting.
- C. Rock Basin:
 - 1. Basis of Payment: Includes excavating, removing unsuitable material, backfilling, placing embankment, clearing, placing rock, and grouting.
- D. Rock Filter:
 - 1. Basis of Payment: Includes placing rock, and coarse aggregate filter blanket.
- E. Sediment Pond:
 - 1. Basis of Payment: Includes clearing, excavating, piping, placing riser footing, constructing embankment and trench and rock basin, seeding and mulching.

- F. Sediment Trap:
 - 1. Basis of Payment: Includes clearing, excavating, forming embankment, placing aggregate or rock and geotextile fabric, seeding, and mulching.
- G. Cleaning Sedimentation Structures:
 - 1. Includes removal, hauling and disposal of sediment and other debris in system.

1.05 REFERENCES

- A. Codes and Standards: In addition to complying with all pertinent local codes and regulations, all work shall be in accordance with:
- B. Illinois Department of Transportation "Standard Specifications for Road and Bridge Construction," Latest Edition:
- C. USDA Natural Resources Conservation Service - Illinois Environmental Protection Agency "Illinois Urban Manual", Latest Edition.
- D. American Association of State Highway and Transportation Officials:
 - 1. AASHTO T88 - Standard Specification for Particle Size Analysis of Soils.
 - 2. AASHTO M288-00 – Standard Specification for Geotextile Specification for Highway Applications.
 - 3. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.
- E. American Concrete Institute:
 - 1. ACI 301 - Specifications for Structural Concrete.
- F. ASTM International:
 - 1. ASTM C127 - Standard Test Method for Density, Relative Density (Specific Gravity), and Absorption of Coarse Aggregate.
 - 2. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³)).
 - 3. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³)).
 - 4. ASTM D2922 - Standard Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
 - 5. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).
- G. Precast/Prestressed Concrete Institute:
 - 1. PCI MNL-116S - Manual for Quality Control for Plants and Production of Precast and Prestressed Concrete Products.

1.06 JOB CONDITIONS

- A. Protection: Use all means necessary to protect existing objects designated to remain and, in the event damage, immediately make all repairs and replacements necessary to the approval of the Landscape Architect at no additional cost to the Owner.

1.07 CONTROL REQUIREMENTS

- A. All earth changes shall be made in such a manner as to minimize:
 - 1. The area disturbed land exposed and unprotected against the erosive action of wind, ice, precipitation, and the flow of water; and
 - 2. The duration of such exposure.
 - 3. Sediment caused by accelerated soil erosion shall be restricted to a non-polluting minimum, before it leaves the site of the earth-change.
- B. Sediment caused by accelerated soil erosion shall not be permitted to enter the storm water structures of wetland located on or near the site. Temporary control measures shall be created and maintained until the completion of the project.

1.08 SEQUENCING AND SCHEDULING

- A. All temporary erosion control measures to be installed prior to any soil movement.
- B. Install other erosion control measures when appropriate to the stage of construction.

1.09 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Product Data: Product Data: Submit data on geotextile.
- C. Samples:
 - 1. Submit two samples of rock, minimum 50 pounds each. Construction site sample may be incorporated into the Work. Samples will be used as reference for judging size, and gradation of rock supplied and placed.
- D. Test Reports: Indicate certified tests results for precast concrete at manufacturing facility, cast-in-place concrete in field, and granular backfill.
- E. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.10 CLOSEOUT SUBMITTALS

- A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for submittals.

1.11 QUALITY ASSURANCE

- A. Perform Work in accordance with requirements of Section 31 23 16, Section 33 42 13, Section 03 20 00, Section 03 30 00,.

- B. Perform Work in accordance with State Illinois Standard Specifications for Road and Bridge Construction current edition.
- C. Qualifications of Workers: At least one person who is thoroughly familiar with the types of materials and equipment being utilized shall be present at all times during the operations to direct the work where required.

1.12 PRE-INSTALLATION MEETINGS

- A. Section 01 30 00 - Administrative Requirements: Pre-installation meeting.
- B. Convene minimum one week prior to commencing work of this section.

1.13 ENVIRONMENTAL REQUIREMENTS

- A. Section 01 60 00 - Product Requirements: Environmental conditions affecting products on site.
- B. Do not place grout when air temperature is below freezing.
- C. Do not place concrete when base surface temperature is less than 40 degrees F, or surface is wet or frozen.

PART 2 PRODUCTS

2.01 SILT FENCE

- A. Furnish materials in accordance with Illinois Department of Transportation - Standard Specifications for Road and Bridge Construction (Latest Edition).
Section 280 - Temporary Erosion Control and AASHTO Standard Specification M288-00.

2.02 TEMPORARY CONSTRUCTION ENTRANCE

- A. Rock Construction Entrance
 - 1. 3 inch size (minimum) washed stone.
 - 2. Stone shall meet one of the following IDOT coarse aggregate gradations: CA-1, CA-2, CA-3, or CA-4.
 - 3. Geotextile: Conform to material specification 592 GEOTEXTILE, Table 1 or 2, Class I, II or IV from the Illinois Urban Manual.

2.03 CONSTRUCTION FENCE

- A. Furnish materials as indicated in Drawings and specified in Section 01 50 00.

2.04 DUST CONTROL

- A. Water to be clear and free from suspended fine sediment

2.05 TEMPORARY SEED

- A. Furnish materials in accordance with Illinois Department of Transportation – Standard Specifications for Road and Bridge Construction (Latest Edition) Section 250 – Seeding

2.06 EROSION CONTROL BLANKET (EROSION BLANKET)

- A. Comply with Illinois Department of Transportation Standard Specifications for Road and Bridge Construction (Current Edition) Section 1081.10
 - 1. Erosion Control Blanket -Type 1
 - a. ConWed
 - 1) Futerra Environet® Blanket Natural
 - 2) Futerra F4 Netless Blanket
 - 2. Single Net Erosion Control Blanket - Type 2
 - a. North American Green
 - 1) DS75 - Single Net Straw Blanket
 - 2) S75 - Single Net Straw Blanket
 - 3) S75BN - Single Net Straw Blanket
 - 3. Double Net Erosion Control Blanket -Type 3
 - a. North American Green
 - 1) DS150 - Double Net Straw Blanket
 - 2) S150 - Double Net Straw Blanket
 - 3) S150BN - Double Net Straw-Coconut Blanket
 - 4) C125BN - Double Net Coconut Blanket

2.07 TURF REINFORCEMENT MAT (TRM)

- A. Comply with Illinois Department of Transportation Standard Specifications for Road and Bridge Construction (Current Edition) Section 1081.10 (c)
 - 1. Long Term Turf Reinforcement Mat -Type 4
 - a. North American Green
 - 1) C125
 - 2) P300
 - 2. Permanent Turf Reinforcement - Type 5
 - a. North American Green
 - 1) SC250

2) C350

2.08 TEMPORARY EROSION CONTROL – POLYACRYLAMIDE (PAM)

- A. Polyacrylamide (PAM)
 - 1. Anionic type
 - 2. Acrylamide monomer ? 0.05%
 - 3. Specifically tailored for soil type and water chemistry
 - 4. Granular form
 - 5. Charge density 10 - 55% by weight
 - 6. Conform to all federal, state and local laws, rules, and regulations.
 - 7. Manufacturers:
 - a. Applied Polymer Systems, Inc. Model E-Z-PAM™ or acceptable equal

2.09 HYDROMULCH

- A. Comply with Illinois Department of Transportation Standard Specifications for Road and Bridge Construction (Current Edition) Section 1081.06 (a)(2)

2.10 DITCH CHECK

- A. Geotextile triangular dike acceptable to the Landscape Architect.

2.11 SEDIMENT STOP

- A. Shall consist of minimum 70% straw fiber 30% coconut fiber with splash aprons
- B. As manufactured by North American Green or approved equal..

2.12 INLET FILTERS

- A. Comply with Illinois Department of Transportation Standard Specifications for Road and Bridge Construction (Current Edition) Section 1081.15 (h)

2.13 SOURCE QUALITY CONTROL (AND TESTS)

- A. Section 01 40 00 - Quality Requirements: Testing, inspection and analysis requirements.
- B. Perform tests on cement, aggregates, and mixes to ensure conformance with specified requirements.
- C. Test samples in accordance with ACI 301.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Section 01 30 00 - Administrative Requirements: Verification of existing conditions before starting work.
- B. Verify compacted subgrade and granular base is acceptable and ready to support devices and imposed loads.
- C. Verify gradients and elevations of base or foundation for other work are correct.

3.02 EROSION CONTROL INSPECTIONS

- A. Comply with erosion control inspections and NPDES requirements.

3.03 SITE STABILIZATION

- A. Minimize the amount of disturbed land that is susceptible to erosion.
- B. Incorporate erosion control devices indicated as indicated on the Plans at the earliest practicable time.
- C. Construct, stabilize and activate erosion controls before site disturbance within tributary areas of those controls.
- D. Stockpile and waste pile heights shall not exceed 16 feet. Slope stockpile sides at 2:1 (H:V) or flatter.
- E. Stabilize any disturbed area of affected erosion control devices on which activity has ceased and which will remain exposed for more than 7 days.
- F. During non-germinating periods, apply mulch at recommended rates.
- G. Stabilize disturbed areas which are either at finished grade or will not be disturbed within one year in accordance with permanent seeding specifications

3.04 DIVERSION CHANNELS

- A. Windrow excavated material on low side of channel.
- B. Compact to 95 percent maximum density.
- C. On entire channel area, apply soil supplements and sow seed as specified in Section 32 92 19.
- D. Mulch seeded areas with hay as specified in Section 32 92 19.

3.05 ROCK ENERGY DISSIPATOR

- A. Excavate to indicated depth of rock lining or nominal placement thickness as follows. Remove loose, unsuitable material below bottom of rock lining, then replace with suitable material. Thoroughly compact and finish entire foundation area to firm, even surface.

NCSA Class	Nominal Placement Thickness inches (mm)
R8	48 (1220)
R7	36 (915)
R6	30 (760)
R5	24 (610)
R4	18 (460)
R3	12 (300)

- B. Lay and overlay geotextile fabric over substrate. Lay fabric parallel to flow from upstream to downstream. Overlap edges upstream over downstream and upslope over downslope. Provide a minimum overlap of 3 feet. Offset adjacent roll ends a minimum of 5 feet when lapped. Cover fabric as soon as possible and in no case leave fabric exposed more than 4 weeks.
- C. Carefully place rock on geotextile fabric to produce an even distribution of pieces, with minimum of voids and without tearing geotextile.
- D. Unless indicated otherwise, place full course thickness in one operation to prevent segregation and to avoid displacement of underlying material. Arrange individual rocks for uniform distribution.

3.06 ROCK BASIN

- A. Construct generally in accordance with rock energy dissipator requirements to indicated shape and depth. Rock courses may be placed in several operations but minimum depth of initial course must be 3 feet or greater.

3.07 ROCK BARRIER

- A. Determine length required for ditch or depression slope and excavate, compact and foundation area to firm, even surface.
- B. Produce an even distribution of rock pieces, with minimum voids to the indicated shape, height and slope.
- C. Construct coarse aggregate filter blanket against upstream face of rock barrier to the indicated thickness.

3.08 SEDIMENTATION POND

- A. Clear and grub storage area and embankment foundation area site as specified in Section 31 10 00.
- B. Excavate key trench for full length of dam. Excavate emergency spillway in natural ground.
- C. Install pipe spillway, with anti-seep collar attached, at location indicated.
- D. Place forms, and reinforcing for concrete footing at bottom of riser pipe with trash rack and anti-vortex device, as specified in Section 03 10 00, and Section 03 20 00. Construction of embankment and trench prior to placing pipe is not required.
- E. Mix, place, finish, and cure concrete, as specified in Section 03 30 00.

- F. Do not use coarse aggregate as backfill material around pipe. Backfill pipe with suitable embankment material to prevent dam leakage along pipe.
- G. Construct rock basin at outlet end of pipe, as specified in this Section. Place embankment material, as specified in Section 31 23 23. When required, obtain borrow excavation for formation of embankment, as specified in Section 31 23 23.
- H. On entire sedimentation pond area, apply soil supplements and sow seed as specified in Section 32 92 19.
- I. Mulch seeded areas with hay as specified in Section 32 92 19.

3.09 SEDIMENT TRAPS

- A. Clear site, as specified in Section 31 10 00.
- B. Construct trap by excavating and forming embankments as specified in Section 31 23 16, and Section 31 23 23.
- C. Place coarse aggregate or rock at outlet as indicated on Drawings.
- D. Place geotextile fabric, as specified for rock energy dissipator.
- E. When required, obtain borrow excavation for formation of embankment, as specified in Section 31 23 16.
- F. On entire sediment trap area, apply soil supplements and sow seed as specified in Section 32 92 19.
- G. Mulch seeded areas with straw as specified in Section 32 92 19.
- H. Incorporate erosion control devices indicated on the Drawings into the Project at the earliest practicable time.
- I. Construct, stabilize and activate erosion controls before site disturbance within tributary areas of those controls.
- J. Stockpile and waste pile heights shall not exceed 35 feet (10.7 m). Slope stockpile sides at 2: 1 or flatter.
- K. Stabilize any disturbed area of affected erosion control devices on which activity has ceased and which will remain exposed for more than 7 days.
 - 1. During non-germinating periods, apply mulch at recommended rates.
- L. Stabilize diversion channels, sediment traps, and stockpiles immediately.

3.10 INSTALLATION

- A. Silt Fence: Conform to Illinois Department of Transportation - Standard Specifications for Road and Bridge Construction (Latest Edition) - Section 280:
 - 1. Install silt fence in the locations shown on the Plans, using the machine sliced installation method.
 - 2. Post spacing of 5 feet maximum.

3. If necessary, splices will be made at an opposing fence post and according to the manufacturer's specifications.
 4. Install following AASHTO Standard Specification M288-00.
- B. Temporary Construction Entrance (TCE):
1. Install Temporary Construction Entrance in locations as indicated in Drawings.
 2. Construct TCE before grading begins on the Project Site.
 3. Inspect TCE and surrounding roadways daily for mud accumulation.
- C. Erosion Control Blanket
1. Comply with manufacturer's requirements
 2. Comply with Illinois Department of Transportation - Standard Specifications for Road and Bridge Construction (Latest Edition) Section 251.04.
- D. Temporary Erosion Control - Polyacrylamide (PAM)
1. Apply to moist soil
 2. Application rate:
 - a. 20-pounds per acre or as recommended by the manufacturer whichever is greater.
 3. Apply in accordance with all OSHA requirements and manufacturer's recommendations for the specific use.
 4. Apply with broadcast spreader operated and maintained to provide uniform application rates as required.
 5. Do not apply directly to water, pond, or stream surfaces
- E. Hydromulch
1. Comply with Standard Specifications Section 251.04 Method (3)
- F. Ditch Check
1. Comply with manufacturer's installation recommendations
- G. Sediment Stop
1. Comply with manufacturer's installation recommendations.

3.11 FIELD QUALITY CONTROL

- A. Section [01 40 00 - Quality Requirements] [01 70 00 - Execution and Closeout Requirements]: Field inspecting, testing, adjusting, and balancing.
- B. Inspect erosion control devices on a weekly basis and after each runoff event. Make necessary repairs to ensure erosion and sediment controls are in good working order.

3.12 CLEANING

- A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for cleaning.
- B. When sediment accumulation in sedimentation structures has reached a point one-third depth of sediment structure or device, remove and dispose of sediment.
- C. Do not damage structure or device during cleaning operations.
- D. Do not permit sediment to erode into construction or site areas or natural waterways.
- E. Clean channels when depth of sediment reaches approximately one half channel depth.

3.13 PROTECTION

- A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for protecting finished Work.
- B. Contractor is responsible for inspection, maintenance, and repair of any washouts or accumulations of sediment that occur as a result of the grading or construction. Restoration consists of grade repair, turf re-establishment, and street sweeping of mud and debris tracked from the Project Site.
- C. Contractor shall comply with the National Pollutant Discharge Elimination System (NPDES) Phase 2 Storm Water Regulations.
- D. Maintain Temporary Construction Entrance in a condition that prevents tracking of sediment onto public rights-of-way or streets. This may require periodic top dressing with additional aggregate. All sediment spilled, dropped, or washed onto public rights-of-way must be removed immediately. Regular street sweeping/cleaning will be required. Provide inspection and perform periodic maintenance after each rain.
- E. Damages caused by construction traffic or other activity must be repaired before the end of each working day.
- F. If an erosion control device has been reduced in capacity by 1/3 or more, the Contractor shall restore such features to their original condition.
- G. Control dust blowing and movement on Project Site and roads as directed by Engineer to prevent exposure of soil surfaces, to reduce on and offsite damage, to prevent health hazards, and to improve traffic safety.
- H. Immediately after placement, protect paving from premature drying, excessive hot or cold temperatures, and mechanical injury.
- I. Do not permit construction traffic over paving for 7 days minimum after finishing.
- J. Protect paving from elements, flowing water, or other disturbance until curing is completed.

END OF SECTION

PART 1 - GENERAL

1.01 SECTION INCLUDES:

- A. Aggregate subbase base course.
- B. Concrete paving for:
 - 1. Concrete sidewalks.
 - 2. Concrete integral curbs and gutters.

1.02 RELATED SECTIONS:

- A. Section 31 22 13 - Rough Grading: Preparation of site for paving and base.
- B. Section 31 23 23 - Fill: Compacted subbase for paving.
- C. Section 32 12 16 - Asphalt Paving: Asphalt wearing course.
- D. Section 32 91 19 - Landscape Grading: Preparation of subsoil at pavement perimeter.
- E. Section 33 05 13 - Manholes and Structures: Manholes including frames.
- F. Section 32 14 13 – Precast Concrete Unit Paving: Unit pavers.

1.03 PRICE AND PAYMENT PROCEDURES

- A. Section 01 20 00 - Price and Payment Procedures Contract Sum/Price
- B. Aggregate Base Course
 - 1. Basis of Payment: Includes supplying fill material, stockpiling, scarifying substrate surface, placing where required, and compacting.
- C. Concrete Paving:
 - 1. Basis of Payment: Includes forms, reinforcing, concrete, accessories, placing, finishing, curing, and testing.

1.04 REFERENCE STANDARDS

- A. State Highway Specifications means the "ILLINOIS DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION," current edition including all supplements.
- B. American Association of State Highway and Transportation Officials:

1. AASHTO M324 - Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements.

C. American Concrete Institute:

1. ACI 301 - Specifications for Structural Concrete.
2. ACI 304 - Guide for Measuring, Mixing, Transporting, and Placing Concrete.

D. ASTM International:

1. ASTM A184/A184M - Standard Specification for Fabricated Deformed Steel Bar Mats for Concrete Reinforcement.
2. ASTM A185/A185M - Standard Specification for Steel Welded Wire Fabric, Plain, for Concrete Reinforcement.
3. ASTM A497/A497M - Standard Specification for Steel Welded Wire Fabric, Deformed, for Concrete Reinforcement.
4. ASTM A615/A615M - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
5. ASTM A706/A706M - Standard Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement.
6. ASTM A767/A767M - Standard Specification for Zinc-Coated (Galvanized) Steel Bars for Concrete Reinforcement.
7. ASTM A775/A775M - S Standard Specification for Epoxy-Coated Steel Reinforcing Bars.
8. ASTM A884/A884M - Standard Specification for Epoxy-Coated Steel Wire and Welded Wire Reinforcement.
9. ASTM A934/A934M - Standard Specification for Epoxy-Coated Prefabricated Steel Reinforcing Bars.
10. ASTM C31/C31M - Standard Practice for Making and Curing Concrete Test Specimens in the Field.
11. ASTM C33 - Standard Specification for Concrete Aggregates.
12. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
13. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete.
14. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic Cement Concrete.
15. ASTM C150 - Standard Specification for Portland Cement.
16. ASTM C172 - Standard Practice for Sampling Freshly Mixed Concrete.
17. ASTM C173/C173M - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method.
18. ASTM C231 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
19. ASTM C260 - Standard Specification for Air-Entraining Admixtures for Concrete.
20. ASTM C309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.
21. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete.
22. ASTM C595 - Standard Specification for Blended Hydraulic Cements.

23. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete.
24. ASTM C979 - Standard Specification for Pigments for Integrally Colored Concrete.
25. ASTM C989 - Standard Specification for Ground Granulated Blast-Furnace Slag for Use in Concrete and Mortars.
26. ASTM C1017/C1017M - Standard Specification for Chemical Admixtures for Use in Producing Flowing Concrete.
27. ASTM C1064/C1064M - Standard Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete.
28. ASTM C1116 - Standard Specification for Fiber-Reinforced Concrete and Shotcrete.
29. ASTM C1315 - Standard Specification for Liquid Membrane-Forming Compounds Having Special Properties for Curing and Sealing Concrete.
30. ASTM C1371 - Standard Test Method for Determination of Emittance of Materials Near Room Temperature Using Portable Emissometers.
31. ASTM C1549 - Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer.
32. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).
33. ASTM D1752 - Standard Specification for Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.
34. ASTM D6690 - Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements.
35. ASTM E408 - Standard Test Methods for Total Normal Emittance of Surfaces Using Inspection-Meter Techniques.
36. ASTM E903 - Standard Test Method for Solar Absorptance, Reflectance, and Transmittance of Materials Using Integrating Spheres.
37. ASTM E1918 - Standard Test Method for Measuring Solar Reflectance of Horizontal and Low-Sloped Surfaces in the Field.
38. ASTM E1980 - Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces.

1.05 PRE-INSTALLATION MEETINGS

- A. Section 01 30 00 - Administrative Requirements: Pre-installation meeting.
- B. Convene minimum one week prior to commencing work of this section.

1.06 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Product Data:

1. Submit data on concrete materials, joint filler admixtures curing compounds.

1.07 QUALITY ASSURANCE

- A. Perform Work in accordance with ACI 301. and Section 03 10 00, Section 03 20 00, and Section 03 30 00.
- B. Obtain cementitious materials from same source throughout.
- C. Perform Work in accordance with Standard Specifications

1.08 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing Products specified in this section with minimum three years' experience.
- B. Installer: Company specializing in performing work of this section with minimum five years' experience.

1.09 AMBIENT CONDITIONS

- A. Section 01 50 00 - Temporary Facilities and Controls: Ambient conditions control facilities for product storage and installation.
- B. Concrete shall not be placed when air temperature is 45 degrees and falling. Placement will be permitted if air temperature is 40 degrees and rising.
- C. Do not place concrete when base surface temperature is less than 40 degrees F, or surface is wet or frozen.

1.10 PROTECTION

- A. Cure all concrete for not less than seven (7) days after placement.
- B. Protect all concrete surfaces from sun with water-saturated coverings, white polyethylene sheets or approved membrane curing compounds sprayed on the surface.
- C. Concrete pours shall be protected by the Contractor from graffiti or vandalism. Each day's pour shall be guarded until the concrete has obtained sufficient hardness to prohibit malicious damage.

1.11 CONCRETE TESTING

- A. The Contractor shall provide empty test cylinders for this project.

- B. A total of two (2) test cylinders shall be drawn from the same truck load for every 50 cubic yards of concrete, or two (2) cylinders per each day's pour if less than 50 cubic yards.
- C. Test cylinders shall be clearly marked with a date and load ticket number. The Contractor shall protect cylinders and store safely until picked up by testing laboratory.
- D. Testing expenses shall be paid for by the Owner.

PART 2 - PRODUCTS

2.01 AGGREGATE BASE COURSE

- A. Aggregate Base Course: As specified in Section 32 11 23
- B. Comply with Standard Specifications Section 1004.

2.02 PORTLAND CEMENT CONCRETE

- A. Class X, 6 bag mix, concrete in accordance with State Highway Specifications.
- B. Compressive strength of 4000 pounds per square inch after 28 days when tested in accordance with ASTM C39 for curb and gutters, walks, walls, and concrete foundations.
- C. Provide a slump between three (3) to four (4) inches max when tested in accordance with ASTM C143.
- D. Mix all materials for not less than one (1) minute in controlled time mixers.
- E. Redi-mix concrete must be discharged from mixer within one (1) hour after all ingredients are in mixer.
- F. No water shall be added to the concrete after it has been transported to the construction site.

2.03 EXPANSION JOINTS

- A. Expansion joints shall be ½" bituminous saturated felt or preformed, non-absorbent closed cell polystyrene or butyl foam as recommended by manufacturer of joint sealant.

2.04 JOINT SEALANT

- A. Joint sealant shall be polyurethane based elastomeric sealing compound material of the cold applied type in a gray color (or to match color of concrete) equal to rubber caulk

#230 manufactured by PRC. Dynoseal W-5-7-G. Manufactured by Williams Products Inc., and TC/900 manufactured by Trencor.

- B. The sealing materials shall be delivered to the job site in unbroken original packages bearing the manufacturer's name and brand designation.

2.05 EQUIPMENT

- A. All equipment used to perform this work must conform to the IDOT Specification Section 1020.

2.06 CONCRETE PAVING

- A. Performance / Design Criteria:
 - 1. Paving: Design for parking. light duty commercial vehicles.
- B. Form Materials:
 - 1. Form Materials: Conform to ACI 301. As specified in Section 03 10 00.
 - 2. Joint Filler: ASTM D1751; Asphalt impregnated fiberboard or felt,
 - 3. Joint Filler: Premolded compressible type;
- C. Reinforcement:
 - 1. Reinforcing Steel and Wire Fabric: Type specified in Section 03 20 00.
 - 2. Deformed Reinforcing: Steel: ASTM A615/A615M, uncoated finish.
 - 3. Welded Plain Wire Fabric: ASTM A185/A185M; in coiled rolls; unfinished.
 - 4. Dowels: ASTM A615/A615M; 40 ksi yield strength, plain steel bars; cut to length indicated on Drawings, square ends with burrs removed; unfinished.
 - 5. Tie Wire: Minimum 16 gage annealed type
 - 6. Epoxy Coating Patching Material: Type as recommended by coating manufacturer.
- D. Concrete Materials:
 - 1. Concrete Materials: As specified in Section 03 30 00.
 - 2. Provide in accordance with Standard Specifications.
- E. Concrete Reinforcing Fibers: ASTM C1116, high strength industrial-grade fibers specifically engineered for secondary reinforcement of concrete. Tensile strength 130 ksi; toughness 15 ksi; 3/4 inch long fibers, 34 million/lb fiber count.
- F. Water: ASTM C94/C94M; potable
- G. Air Entrainment: ASTM C260.
 - 1. Chemical Admixture: ASTM C494/C494M.

2.07 FABRICATION

- A. Fabricate reinforcing in accordance with Standard Specifications.

2.08 ACCESSORIES

- A. Curing Compound: Comply with Standard Specifications Article 1020.13.

2.09 SOURCE QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Testing and Inspection Services:
- B. Comply with Standard Specifications Section 1020

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for installation examination.
- B. Verify compacted subgrade, subbase, and granular base is dry and ready to support paving and imposed loads.
- C. Proof roll subbase with loaded 6-wheel dump truck in minimum two perpendicular passes to identify soft spots.
 - 1. Remove soft subbase and replace with compacted fill as specified in Section 31 23 23.
- D. Verify gradients and elevations of base are correct.

3.02 PREPARATION

- A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for installation preparation.
- B. Moisten substrate to minimize absorption of water from fresh concrete.
- C. Coat surfaces of manholes, catch basins, frames and grates with oil to prevent bond with concrete paving.
- D. Notify Construction Manager minimum 24 hours prior to commencement of concreting operations.

3.03 INSTALLATION

A. Base Course:

1. Aggregate Base Course: Install as specified in Section 32 11 23.
2. Prepare base course in accordance with Standard Specifications

B. Forms:

1. Build forms to line and grade with mortar tight joints using good lumber or metal forms properly braced and staked. Oil forms before concrete is poured. Forms may be removed 24 hours after pouring.
2. Place and secure forms and screeds to correct location, dimension, profile, and gradient.
3. Assemble formwork to permit easy stripping and dismantling without damaging concrete.

C. Reinforcement:

1. Place reinforcing as indicated on Drawings.
2. Interrupt reinforcing at expansion joints.
3. Place dowels to achieve paving and curb alignment as detailed.
4. Provide doweled joints at 12 inch spacing at transverse joints with one end of dowel set in capped sleeve to allow longitudinal movement.

D. Placing Concrete:

1. Place concrete in accordance with Standard Specifications.
2. Ensure reinforcing, inserts, embedded parts, and formed joints are not disturbed during concrete placement.
3. Place concrete continuously over the full width of the panel and between predetermined construction joints. Do not break or interrupt successive pours such that cold joints occur.
4. Place concrete to pattern indicated.

E. Joints

1. Place expansion joints against existing concrete and stationary structures.
2. Install $\frac{1}{2}$ inch expansion joints in walks 30 feet on center every 30 feet using $\frac{3}{4}$ inch expansion material with standard expansion caps and smooth dowels through each joint
3. Place expansion joints at 30 foot intervals.
4. Align curb, gutter, and sidewalk joints.
5. Place joint filler between paving components and building or other appurtenances. Recess top of filler $\frac{1}{4}$ inch for sealant installation.
6. Provide scored joints at 5 feet intervals between sidewalks and curbs and between curbs and paving.
7. Tool control joints $[\frac{3}{16}]$ inch wide at an optimum time after finishing.
Minimum of $\frac{1}{4}$ -inch total depth NO SAWED JOINTS WILL BE PERMITTED

F. Finishing:

1. Finish curb and gutters smooth by floating, troweling, and edging before brushing surface to secure final surface. Use standard ten (10) foot straight-edge test and correct irregularities over $\frac{1}{4}$ of an inch.
2. Finish walks and flatwork by floating, steel troweling, scoring, edging, and broom finishing or exposing aggregate by washing where applicable. All walks shall be free from surface defects, leaf fossils imprints of any type. All defects should be replaced at no additional expense to the owner.
3. Construct straight, well-defined score lines (control joints) five (5) feet on center in all work at right angles to walk, extending to $1\frac{1}{2}$ inches depth of the concrete and $\frac{1}{8}$ to $\frac{1}{4}$ of an inch wide. See Concrete Details for special scoring requirements.
4. Score Lines/Control Joints
 - a. Weakened plane control joints for curb and sidewalk shall be constructed at right angles to curb line, with spacing in 5 foot multiples, not to exceed 5 foot for sidewalk and 10 foot for curb.
 - b. Control joints may be hand formed with joint depth to be a minimum of $\frac{1}{4}$ " the total depth of the section. No sawed joints will be permitted.
5. Expansion Joints – provide in the following locations
 - a. Wherever walks abut vertical surfaces
 - b. Curb. Expansions joints shall be constructed at right angles to the curb line with spacing in multiples of 10 feet not to exceed 30 feet. Expansion joints shall also be placed at interface at straight curb and short radius curved sections, interface of new curb with old curb, and both sides of driveway cuts.
6. Walks
 - a. Expansion joints shall be constructed at right angles to the curb line with spacing not to exceed 30 feet.
 - b. Expansion joints shall also be placed at interface with straight walk and short radius curved sections, interface of new walk with old walk and both sides of driveway approaches.
 - c. Locations as indicated or necessary to prevent shrinkage from cracking concrete.
7. Remove forms carefully to avoid damaging corners and edges of exposed concrete within 24 hours after the concrete has been placed.
8. Broom finish surfaces carefully straight continuous strokes at right angles to direction of traffic, while the concrete is still green. The edges shall be rounded with approved finishing tools having the radii shown on the drawings.
9. Ramp Texture: Wheel chair ramps, where shown, shall be finished with heavier brooming transverse to slope of ramp. Texture must conform to Americans With Disabilities Act guidelines Curing and Protection

G. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.

H. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

3.04 TOLERANCES

- A. Section 01 40 00 - Quality Requirements: Tolerances.
- B. Maximum Variation of Surface Flatness: 1/4 inch in 10 ft.
- C. Maximum Variation From True Position: 1/4 inch.

3.05 FIELD QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Requirements for inspecting, testing.
- B. Perform field inspection and testing in accordance with Standard Specifications.
- C. Inspect reinforcing placement for size, spacing, location, support.
- D. Testing firm will take cylinders and perform slump tests in accordance with ACI 301.
- E. Strength Test Samples:
 - 1. Sampling Procedures: ASTM C172.
 - 2. Cylinder Molding and Curing Procedures: ASTM C31/C31M, cylinder specimens, field cured.
 - 3. Sample concrete and make one set of three cylinders for every 50 cu yds or less of each class of concrete placed each day and for every 5,000 sf (465 sq m) of surface area paving.
 - 4. Make one additional cylinder during cold weather concreting, and field cure.
- F. Field Testing:
 - 1. Slump Test Method: ASTM C143/C143M.
 - 2. Temperature Test Method: ASTM C1064/C1064M.
 - 3. Measure slump and temperature for each compressive strength concrete sample.
- G. Cylinder Compressive Strength Testing:
 - 1. Test Method: ASTM C39/C39M.
 - 2. Test Acceptance: in accordance with Standard Specifications.
 - 3. Test one cylinder at 7 days.
 - 4. Test one cylinder at 28 days.
 - 5. Dispose remaining cylinders when testing is not required.
- H. Maintain records of placed concrete items. Record date, location of pour, quantity, air temperature, and test samples taken.

3.06 CLEANING, PATCHING, AND DEFECTIVE WORK

- A. A. Where concrete is under strength, out of line, level, or plumb, or shows objectionable cracks, honeycombing, rock pockets, voids, spalling, exposed reinforcing or is otherwise defective, and in the Landscape Architects judgment, these defects impair proper strength or appearance of the work, the Landscape Architect will require its removal and replacement at the Contractor's expense.
- B. Immediately after stripping and before concrete is thoroughly dry, patch minor defects, form-tie holes, honeycombed areas, etc., with patching mortar. Patch shall match finish of adjacent surface unless noted. No patching is allowed on concrete surfaces to be sandblast finished.
- C. Stained or discolored concrete shall be cleaned as directed and approved by the Landscape Architect.
- D. Stains or other defects which cannot be removed are subject to correction by removal and replacement at no cost to owner.

3.07 PROTECTION

- A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for protecting finished Work.
- B. Immediately after placement, protect paving from premature drying, excessive hot or cold temperatures, and mechanical injury.
- C. Do not permit pedestrian or vehicular traffic over paving for 7 days minimum after finishing.

END OF SECTION

PART 1 - GENERAL

1.01 SECTION INCLUDES:

A. Final grade topsoil for finish landscaping.

1.02 RELATED SECTIONS:

A. Section 32 93 00 - Plants: Topsoil fill for trees, plants and ground cover.

1.03 STANDARDS

A. State Highway Specifications means the "ILLINOIS DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION," current edition including all supplements.

B. Comply with State Highway Specifications except as noted in this Section.

1.04 REFERENCES

A. Illinois Department of Transportation (IDOT) Standard Specifications for Road and Bridge Construction, current edition.

B. American Association of State Highway and Transportation Officials:

C. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.

1.05 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Submittal procedures

B. Samples: Submit, in air-tight containers, 10 lb. sample of each type of fill to testing laboratory.

C. Materials Source: Submit name of imported materials source.

D. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.06 QUALITY ASSURANCE

- A. Qualifications of Workers: Provide at least one person who shall be present at all times during execution of this portion of the work and who shall be thoroughly familiar with the types of materials procedures and equipment being used and who shall direct all work performed under this section.
- B. Furnish each topsoil material from single source throughout the Work.
- C. Perform Work in accordance with Standard Specifications.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Topsoil for planting beds and seed turf areas within the construction area created by the site excavation. Subsurface clay material will not be allowed for topsoil use.
- B. On-Site Soils
- C. All approved soils from cut areas shall be used as fill to fulfill the plan intent.
- D. Unsuitable materials (except topsoil) and excess cut when directed in the Bid Proposal and/or Special Conditions shall be removed from the site by the Contractor

2.02 EQUIPMENT

- A. Provide and maintain on the job sufficient equipment of the types needed to complete all work in accordance with the requirements of these specifications. Earth moving equipment capable of accomplishing the specified required results may be used

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Section 01 30 00 - Administrative Requirements: Verification of existing conditions before starting work.
- B. Verify building and trench backfilling have been inspected.
- C. Verify substrate base has been contoured and compacted.

3.02 PREPARATION

- A. Protect landscaping and other features remaining as final Work.
- B. Protect existing structures, fences, sidewalks, utilities, paving, and curbs.

3.03 SUBSTRATE PREPARATION

- A. Eliminate uneven areas and low spots.
- B. Remove debris, roots, branches, stones, in excess of 1/2 inch in size. Remove contaminated subsoil.
- C. Scarify surface to depth of 3 inches where topsoil is scheduled. Scarify in areas where equipment used for hauling and spreading topsoil has compacted subsoil.

3.04 PLACING TOPSOIL

- A. Place topsoil in areas where seeding, sodding, planting, is required to thickness as scheduled. Place topsoil during dry weather.
- B. Fine grade topsoil to eliminate rough or low areas. Maintain profiles and contour of subgrade.
- C. Remove roots, weeds, rocks, and foreign material while spreading.
- D. Manually spread topsoil close to plant material, building, and pavement to prevent damage.
- E. Lightly compact placed topsoil.
- F. Remove surplus subsoil and topsoil from site.
- G. Leave stockpile area and site clean and raked, ready to receive landscaping.

3.05 TOLERANCES

- A. Section 01 40 00 - Quality Requirements: Tolerances.
- B. Top of Topsoil: Plus or minus 1/2 inch.

3.06 PROTECTION OF INSTALLED WORK

- A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for protecting finished Work.

B. Prohibit construction traffic over topsoil.

3.07 SCHEDULES

A. Compacted topsoil thicknesses:

1. Seeded Grass: 6 inches.
2. Sod: 4 inches.
3. Shrub Beds: 12 inches.
4. Planter Boxes: To within 3 inches of box rim.

END OF SECTION

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Fertilizing.
- B. Seeding.
- C. Hydroseeding.
- D. Mulching.
- E. Maintenance.

1.02 RELATED SECTIONS:

- A. Section 31 22 13 - Rough Grading: Rough grading of site.
- B. Section 31 23 17 - Trenching: Rough grading over cut.
- C. Section 32 05 13 - Soils for Exterior Improvements: Topsoil material.
- D. Section 32 84 00 - Planting Irrigation.
- E. Section 32 91 13 - Soil Preparation
- F. Section 32 91 19 - Landscape Grading: Preparation of subsoil and placement of topsoil in preparation for the Work of this section.
- G. Section 32 92 23 - Sodding.
- H. Section 32 93 00 - Plants.

1.03 DESCRIPTION

- A. Work includes furnishing all labor, materials and equipment required to complete the work described herein in strict accordance with the drawings and terms of the Contract.

- B. The landscape contractor shall be familiar with the project premises and how the existing conditions will affect the work.
- C. All previous grading to conform with the Drawings and Specifications

1.04 INSPECTION

- A. Become familiar with project requirements, site and existing conditions impact on scope of work
- B. Inspect existing conditions prior to commencing any work under this Section. Report any discrepancies to Landscape Architect.
- C. Failure to report discrepancies to Landscape Architect implies acceptance of existing conditions.

1.05 REFERENCES

- A. Illinois Department of Transportation "Standard Specifications for Road and Bridge Construction" (Standard Specifications) most recent edition
- B. ASTM International:
ASTM C602 - Standard Specification for Agricultural Liming Materials.

1.06 DEFINITIONS

- A. Weeds: Vegetative species other than specified species to be established in given area.

1.07 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Product Data: Submit data for seed mix, fertilizer, mulch, and other accessories.
- C. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.
- D. Samples and Analysis:

Submit, for review, samples and certified analysis by approved laboratory for seed, fertilizer, and lime prior to delivery to the site.

Manufacturer's analysis for standard products will be acceptable.

- E. Acceptance of samples shall not be construed as final acceptance. The Landscape Architect reserves the right to have samples taken of the materials delivered to the site of the Work and analyzed for compliance with the Specifications.

1.08 CLOSEOUT SUBMITTALS

- A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for submittals.
- B. Operation and Maintenance Data: Include maintenance instructions, cutting method and maximum grass height; types, application frequency, and recommended coverage of fertilizer.

1.09 QUALITY ASSURANCE

- A. Provide at least one person thoroughly trained and experienced in the skills required completely familiar with the design and application of the work described in this Section, and who shall be present at all times during progress of the work under this Section and shall direct all work required and performed under this Section.
- B. Provide seed mixture in containers showing percentage of seed mix, germination percentage, inert matter percentage, weed percentage, year of production, net weight, date of packaging, and location of packaging.
- C. Seed: Conform to current U.S. Department of Agriculture Rules and Regulations under the Federal Seed Act of August 9, 1939 and all subsequent revisions thereto, and the requirements of the state seed laws.
- D. Perform Work in accordance with Standard Specifications.

1.10 WORKMANSHIP

- A. During seeding, keep all areas neat and clean and with precautions taken to avoid damage to existing plants, turf and structures.
- B. Remove all debris and waste material resulting from seeding operations from the project and the area cleaned up upon completion of seeding operation.

- C. Repair or restore to original condition any damaged areas caused by the landscape contractor.

1.11 QUALIFICATIONS

- A. Seed Supplier: Company specializing in manufacturing Products specified in this section with minimum three years documented experience.
- B. Installer: Company specializing in performing work of this section with minimum five years documented experience.

1.12 PROTECTION AND REPAIR

- A. Use all means necessary to protect site seeding areas before, during, and after installation and to protect the installed work and materials of all other trades.
- B. In the event of damage to the site seeding areas including mulch or erosion control blanket, immediately make all repairs or replacements necessary to the approval of the Owner and at all no additional cost to the Owner.
- C. Install necessary barricades, temporary fences or signs to protect newly seeded or hydro-seeded/mulched areas until acceptance of the Work.

1.13 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 00 - Product Requirements: Product storage and handling requirements.
- B. Deliver grass seed mixture in sealed containers. Seed in damaged packaging is not acceptable.
- C. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.
- D. Protect seed, and other required materials against weather conditions and injuries during transit and job storage.
- E. Deliver all items to the site in their original containers with all labels intact and legible at time of Owners representative inspection.
- F. Use all means necessary to protect all items before, during and after installation and to protect the installed work and materials of all trades

G. Replacements:

1. Repair all damaged or rejected materials immediately
2. Make all repairs and replacements necessary to the approval of the Owners Representative at no additional cost to the owner.

1.14 GUARANTEE

- A. Guarantee this portion of the through the maintenance period and until final acceptance (See Paragraph 3.06 this section.)
- B. Within the guarantee period, replace all lawn areas which have failed to flourish and produce a stand of turf acceptable to the Owner due to defective materials or workmanship, or unfavorable weather conditions.
- C. The decision of the Owner for replacement Work shall be conclusive and binding upon the Contractor.
- D. The Contractor is responsible for all damage to persons or property caused by defective materials or workmanship or by the re-working of areas not acceptable.

1.15 MAINTENANCE SERVICE

- A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for maintenance service.
- B. Maintain seeded areas for six weeks following seeding or until grass is well established and exhibits vigorous growing condition for two cuttings.

PART 2 - PRODUCTS

2.01 WATER

- A. Owner will make water available to the Contractor from existing facilities such as hose bibs and street washers.
- B. Contractor to furnish all hose and connections necessary to irrigate the seeded areas.

- C. The Owner will assist in acquiring any required Water Meter where larger quantities of water are necessary for hydro-mulching or hydro-seeding where no existing water facilities exist.
- D. The cost of water shall be borne by the Owner.

2.02 TOPSOIL

- A. Topsoil installed on grade shall attempt to match existing soil texture except for situations where a clay subsoil exists. Where a clay subsoil exists, use loam or silt loam topsoil.
- B. Topsoil shall be:
 - Free of stones, lumps, plants, roots and other debris over 1 ½-inches
 - Free of plants or plant parts of Bermuda grass, quack grass, Johnson grass, mugwort, nut sedge, poison ivy, Canada thistle or others as specified.
 - Free of any toxic substances harmful to seed germination or plant growth (i.e. pesticide residues).

2.03 FERTILIZER

- A. All fertilizers shall be uniform in composition, free flowing and suitable for application with approved equipment.
- B. All fertilizer shall be a commercial fertilizer. Fertilizers shall be delivered to the site fully labeled according to applicable State fertilizer laws and shall bear the name, trade name or trademark and warranty of the producer;
- C. Base Bid Fertilizer:
 - 1. General: All fertilizer shall be a commercial balanced 1:2:1 ratio fertilizer delivered to the site in bags labeled with the manufacturer's guaranteed analysis;
 - 2. LEB Country Club 13-25-12 Homogeneous
 - 3. LEB Pro 15 – 24 – 19 Blend
 - 4. PAR x 10 – 8 –22 Blend
 - 5. or approved equal.
 - 6. Special Protection: If stored at the site, protect fertilizer from the elements at all times.
- D. Alternate Bid:
 - 1. Fertilizers shall be commercially produced all-natural fertilizers. As manufactured by:

Sustane Natural Fertilizer, Inc.
310 Holiday Avenue, PO Box 19
Cannon Falls, MN 55009

Sustane 4-6-4

Total Nitrogen (N) 4%

0.4% Ammoniacal Nitrogen

0.4% Other Water Soluble Organic Nitrogen

3.2% Water Insoluble Organic Nitrogen (from aerobically composted
turkey litter and hydrolyzed feather meal)

6.0% Available Phosphate (P_2O_5)

4.0% Soluble Potash (K_2O)

4.0% Calcium (Ca)

Sustane 5-2-4

Total Nitrogen (N) 5%

0.5% Ammoniacal Nitrogen

0.5% Other Water Soluble Organic Nitrogen

4.0% Water Insoluble Organic Nitrogen (from aerobically composted
turkey litter and hydrolyzed feather meal)

2.0% Available Phosphate (P_2O_5)

4.0% Soluble Potash (K_2O)

3.0% Calcium (Ca)

Sustane 8-2-4

Total Nitrogen (N) 8%

0.4% Ammoniacal Nitrogen

0.4% Other Water Soluble Organic Nitrogen

7.2% Water Insoluble Organic Nitrogen (from aerobically composted
turkey litter and hydrolyzed feather meal)

2.0% Available Phosphate (P_2O_5)

4.0% Soluble Potash (K_2O)

2.0% Calcium (Ca)

2.04 LIME

- A. Lime material:
 - 1. Ground, pulverized, granular or palletized limestone containing minimum 50% total oxides, i.e. calcium oxide plus magnesium oxide.
 - 2. Minimum of 50% will pass a 100-mesh sieve 98%-100% will pass a 20-mesh sieve

2.05 SEED MIXTURE – TURF GRASS

- A. Suppliers:
Clesen Pro Turf (or approved equal)
847-537-2177
- B. Substitutions: Section 01 60 00 - Product Requirements.
- C. Furnish materials in accordance with Standard Specifications.
- D. Seed Mixture “Sunny Mix” or approved equal:

Grass Seed	Percent in Mix
Kentucky Bluegrass 98/85	60%
Palmer III Perennial Ryegrass	15%
Metolius Perennial Ryegrass	15%
Tailgater Perennial Ryegrass	10%

2.06 ACCESSORIES

- A. Mulching Material:
- B. PennMulch® Seed Accelerator®
- C. Acceptable Manufacturer
 - 1. Lebanon Seaboard Corporation
1600 East Cumberland Street
Lebanon, PA 17042
www.LebanonTurf.com
- D. Water: Clean, fresh and free of substances or matter capable of inhibiting vigorous growth of grass.

2.07 EROSION CONTROL BLANKET

- A. A dyed green Aspen wood fiber mat constructed from curled excelsior, of which 80% is six inches or longer in length. It shall have a uniform color and consistent thickness, and fibers evenly distributed over the entire blanket. Each blanket shall be covered with a photodegradable, extruded plastic mesh and shall not contain any chemical additives.
- B. Weight 1.06 lbs./sq. yd.
- C. North American Green S75 or approved equal.

2.08 EQUIPMENT

- A. Seeding equipment to comply with Standard Specifications Section 1101.08 (d) cultipacker for turfgrass seed as specified in Paragraph 2.05 above.

2.09 SOURCE QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Testing, inspection and analysis requirements.
- B. Analyze existing topsoil to ascertain percentage of nitrogen, phosphorus, potash, soluble salt content, organic matter content, and pH value.
- C. Provide recommendation for fertilizer and lime application rates for specified seed mix as result of testing.
- D. Testing is not required when recent tests and certificates are available for imported topsoil. Submit these test results to testing laboratory. Indicate, by test results, information necessary to determine suitability.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Section 01 30 00 - Administrative Requirements: Verification of existing conditions before starting work.
- B. Verify prepared soil base is ready to receive the Work of this section.

3.02 FERTILIZING

- A. Apply fertilizer at application rate recommended by supplier.
- B. Apply after smooth raking of topsoil.
- C. Do not apply fertilizer at same time or with same machine used to apply seed.
- D. Mix fertilizer thoroughly into upper 1 inch of topsoil.
- E. Lightly water soil to aid dissipation of fertilizer. Irrigate top level of soil uniformly.

3.03 SEEDING

- A. Apply seed at rate of 6.8 lbs. per 1000 sq. ft. evenly in two intersecting directions, or per manufacturer's instructions. Rake in lightly.
- B. Do not seed areas in excess of that which can be mulched on same day.
- C. Planting Season:
- D. Irrigated Areas:
 - 1. April 15 to October 1
- E. Non-Irrigated Areas:
 - 1. April 15 to June 15
 - 2. August 1 to October 1.
- F. Do not sow immediately following rain, when ground is too dry, or when winds are over 12 mph
- G. Immediately following seeding apply PennMulch Seed Accelerator at rate of 55 bags per acre. Maintain clear of shrubs and trees.
- H. Apply water with fine spray immediately after each area has been mulched. Saturate to ½ inch of soil.

3.04 HYDROSEEDING

- A. Hydroseeding is not acceptable.

3.05 SEED PROTECTION

- A. Cover seeded areas with PennMulch Seed Accelerator at 55 bags per acre.

3.06 MAINTENANCE

- A. Mow grass at regular intervals to maintain at maximum height of 2-1/2 inches Do not cut more than 1/3 of grass blade at each mowing. Perform first mowing when seedlings are 40 percent higher than desired height.
- B. Neatly trim edges and hand clip where necessary.
- C. Immediately remove clippings after mowing and trimming. Do not let clippings lay in clumps.
- D. Water to prevent grass and soil from drying out.
- E. Control growth of weeds. Spot treat herbicide applications on an as directed by Owner basis. DO NOT Broadcast herbicide applications.
- F. Remedy damage resulting from improper use of herbicides.
- G. Immediately reseed areas showing bare spots.
- H. Repair washouts or gullies.
- I. Protect seeded areas with warning signs during maintenance period.

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION

- A. The landscape contractor shall provide all materials, labor and equipment to complete all landscape work as shown on the plans and specifications.
- B. Total number of plants shall be drawn on the landscape plan. The Landscape Contractor shall state the total number of each plant with the contract price. The plant list submitted with the bid will automatically become part of the contract documents. NOTE: If the Contractor bids according to the plant list, he/she should thoroughly check the plant list quantities with the symbols drawn on the plan, to be sure there are no discrepancies
- C. Landscaping as defined for this work shall consist of, but not be limited to:
 - 1. Planting: To consist of digging and preparing plant holes, and of furnishing, transporting, and planting of trees, shrubs and other plant materials.
 - 2. Other: Work shall also include all incidental operations such as mulching, bracing required, wrapping, care of living plants and replacement of unsatisfactory plants.

1.02 SECTION INCLUDES:

- A. Preparation of subsoil and topsoil.
- B. Topsoil bedding.
- C. Trees, plants, and ground cover.
- D. Mulch.
- E. Fertilizer.
- F. Pruning.
- G. Maintenance.

1.03 RELATED SECTIONS:

- A. Section 31 23 17 - Trenching: Rough grading over trench cut.
- B. Section 31 23 23 - Fill: Rough grading of site.
- C. Section 32 05 13 - Soils for Exterior Improvements: Topsoil material.
- D. Section 32 84 00 - Planting Irrigation.

- E. Section 32 91 19 - Landscape Grading: Preparation of subsoil and placement of topsoil in preparation for the Work of this section.
- F. Section 32 92 19 - Seeding and Soil Supplements.
- G. Section 32 92 23 - Sodding.
- H. Allowances: Include under provisions of Section 01 20 00 - Price and Payment Procedures. Furnishing and installing of trees, plants and ground cover.

1.04 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Plants:
 - 1. Basis of Payment: Includes preparation of subsoil topsoil, placing topsoil, planting, watering and maintenance to specified time period.

1.05 REFERENCES

- A. Illinois Department of Transportation – Standard Specifications for Road and Bridge Construction – current edition (Standard Specifications)
- B. American National Standards Institute:
 - 1. ANSI A300 - Tree Care Operations - Tree, Shrub and Other Woody Plant Maintenance - Standard Practices.
 - 2. ANSI Z60.1 - Nursery Stock.
- C. Forest Stewardship Council:
 - 1. FSC Guidelines - Forest Stewardship Council Guidelines.

1.06 DEFINITIONS

- A. Weeds: Vegetative species other than specified species to be established in given area.
- B. Plants: Living trees, plants, and ground cover specified in this Section, and described in ANSI Z60.1.

1.07 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Product Data: Submit list of plant material sources, data for fertilizer and other accessories.

- C. Samples and Analysis: When required under “Special Conditions,” samples and certified analysis by a recognized laboratory shall be submitted by the Contractor, at his/her own expense, for approval by the Landscape Architect for topsoil, humus, fertilizer, fungicide, insecticide, tree paint, and anti-desiccant before delivery to the project. Manufacturer’s analysis for standard products will be acceptable to the Landscape Architect.
- D. Approval of samples shall not be construed as final acceptance. The Landscape Architect reserves the right to take samples of the materials delivered to the site and analyze them for comparison with the specification. The cost of these tests shall be borne by the Contractor.
- E. Planting Schedule: Submit three copies of proposed planting schedule, indicating dates for each type of landscape work during normal seasons for such work in area of site. Correlate with specified maintenance periods to provide maintenance from date of substantial completion. Once accepted, revise dates only as approved in writing, after documentation of reasons for delays.

1.08 CLOSEOUT SUBMITTALS

- A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for submittals.
- B. Operation and Maintenance Data: Include pruning objectives, types and methods; types, application frequency, and recommended coverage of fertilizer.
- C. Closeout Submittals: Submit maintenance instructions and schedules according to Section 01700 – Contract Closeout.

1.09 QUALITY ASSURANCE

- A. Tree Pruning: ANSI A300 Pruning Standards for Woody Plants.
- B. Perform Work in accordance with Standard Specifications
- C. Qualification of workmen: Provide at least one person who shall be present at all times during execution of this portion of the work and who shall be thoroughly familiar with the type of materials being installed and the best methods for their installation and who shall direct all work performed under this section.
- D. Codes and Reference Standards: All materials shall conform to the standards adopted by and published by the American Nursery & Landscape Association (ANLA).
- E. All material shall be balled and burlapped.
- F. Standards:

1. When required herein or as specified under Special Conditions, provide analysis and tests of topsoil, fertilizer and humus in accordance with the requirements of the Association of Official Agriculture chemists.
2. Plant names used in the plant list are in accordance with "Standardized Plant Names," published by the American Joint Committee of Horticulture Nomenclature (current edition).
3. Size and grading standards of plant materials shall be in accordance with the latest edition of "U.S.A. Standard for Nursery Stock" and The American Nursery & Landscape Association.

G. Source Quality Control:

1. Ship landscape materials with certificates of inspection and analysis. Comply with all regulatory requirements for landscape materials, fertilizer, herbicide and pesticide composition and application.

H. Labeling Requirements:

1. Label at least one plant of each variety with a securely attached waterproof tag bearing legible designation of botanical and common name.
2. Fertilizer shall be labeled with content and manufacturer.
3. Anti-desiccant shall have original label from manufacturer intact and legible.
4. Pesticide shall have original label from manufacturer intact and legible.

I. Uniformity:

1. Where formal arrangements or consecutive order of trees or shrubs are shown, select stock for uniform height and spread.

J. Inspection:

1. The Landscape Architect may inspect trees and shrubs either at place of growth or at site before planting, for compliance with requirements for genus, species, variety, size, and quality. The Landscape Architect retains right to further inspect trees and shrubs for size and condition of balls and root systems, insects, injuries and latent defects, and to reject unsatisfactory or defective material at any time during progress of work. Remove rejected plants immediately from project site.

1.10 SUBSTITUTIONS: PRE-BID

- A. It is the Landscape Contractor's responsibility to make every reasonable effort to find the material specified by the Landscape Architect. The Landscape Contractor is responsible for qualifying his/her proposal to document any plant suitability or availability problems. The Landscape Contractor may offer substitutions to the Landscape Architect for his/her consideration. The Landscape Contractor will notify the Landscape Architect if there are known diseases or insect resistant species that can be substituted for a selected pest-prone plant. The Contractor shall submit in a base bid as per plan plus price clarifications for all recommended substitutions.

1.11 SUBSTITUTIONS: POST-BID

- A. It is the intent to eliminate post-bid substitutions. However, in the event that the contract material has become unavailable, submit proof of non-availability to the Landscape Architect together with proposal for use of equivalent material. An appropriate substitution must be approved by the owner's representative and the Landscape Architect.

1.12 UTILITIES AND UNDERGROUND FEATURES

- A. The Landscape Contractor shall notify J.U.L.I.E. and/or the general contractor in advance of construction to locate utilities.
- B. Street lighting and other private utilities, including cable TV, communication lines, etc. shall be located by the owner or general contractor.
- C. If there is a conflict with the utilities and the planting, the Landscape Architect shall be responsible for relocating plants prior to the planting process.
- D. Underground features including – but not limited to – existing irrigation, septic systems, drain systems, invisible pet fencing, landscape lighting, underground natural gas and security systems shall be located by the owner or general contractor

1.13 CONCEALED CONTINGENCIES

- A. The correction of undisclosed subsurface conditions including but not limited to rock, roots, stumps, water, clay pan, soils contaminated with toxic substances or other obstacles encountered in excavation work, which are not apparent at the time of estimating, will result in additional costs to the owner. Upon discovery of undisclosed conditions, the Landscape Contractor shall notify the Landscape Architect in writing regarding any additional costs, before corrective measures are taken. No work shall commence without authorization to proceed.

1.14 DRAINAGE

- A. If plants are to be installed in areas that show obvious poor drainage, and the plants are inappropriate for that condition, the Landscape Contractor shall notify the Landscape Architect. If deemed necessary, the plants shall be relocated; the contract shall be adjusted to allow for drainage correction at a negotiated cost, or the plant selection modified by the Landscape Architect to accommodate the poor drainage situation.

1.15 WORKMANSHIP

- A. During delivery and installation, the Landscape Contractor shall perform in a professional manner; coordinating his/her activities so as not to interfere unduly with the

work of other trades and leaving his/her work area(s) clean of litter and debris at the close of each work day.

- B. During planting, all areas shall be kept neat and clean, and precautions shall be taken to avoid damage to existing plants, large trees, turf and structures. Where existing trees are to be preserved, additional precautions should be taken to avoid unnecessary accumulation of excavated materials, soil compaction or root damage.
- C. Upon completion, all debris and waste material resulting from planting operations shall be removed from the project and the area cleaned up.
- D. Any damaged areas caused by the Landscape Contractor shall be restored to their original condition.

1.16 QUALIFICATIONS

- A. Nursery: Company specializing in growing and cultivating plants with three years' experience.
- B. Installer: Company specializing in installing and planting plants with five years' experience.
- C. Tree Pruner: Company specializing in performing work of this section with minimum three years' experience.
- D. Maintenance Services: Performed by installer

1.17 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Section 01 60 00 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.
- B. Transportation:
 - 1. The Contractor shall exercise care to prevent injury and drying out of the plant material.
 - 2. Delivery and Storage:
 - a. Deliver all items to the site in their original containers with all labels intact and legible at time of the Landscape Architect's inspection.
 - b. Use all means necessary to protect all items before, during, and after installation, and to protect the installed work and materials of all other trades. Deliver plants after preparations for planting have been completed and plant immediately. If planting is delayed more than 6 hours after delivery, set plants in shade, protect from weather and mechanical damage, keep roots moist by covering with mulch, burlap or other acceptable means of retaining moisture.
 - c. Balled and burlapped or container-grown plants may remain on the site only 72 hours prior to being planted or put in storage.

- d. Plants shall be kept moist and protected from freezing. Do not remove from containers until planting time.
 - e. Pesticides: Deliver pesticide materials to the site in original unopened containers with legible label indicating Environmental Protection Agency (EPA) pesticides or anti-desiccants with other landscape materials.
 - f. Plants: Provide container grown or boxed plants. Do not prune prior to delivery unless otherwise approved by Landscape Architect. Deliver branched plants with branches tied. Do not bend or bind-tie trees or shrubs in such manner as to damage bark, break branches, or destroy natural shape. Provide protective covering with material that allows air circulation during delivery.
3. Replacements: In the event of damage or rejection, immediately make all repairs and replacements necessary to the approval of the Landscape Architect and at no additional cost to the owner.
 4. Storage of Materials: Fertilizer, humus, and spray materials shall be stored in weatherproof storage areas and in such a manner that their effectiveness will not be impaired.
 5. Inspections:
 - a. All plants shall be subject to inspection and approval by the Landscape Architect. Plants required for the work may be inspected and tagged at the place of growth before being dug. Inspection and tagging at the place of growth shall not affect the Landscape Architect's right to reject such plants on or after delivery thereof to the site as well as in place.
 - b. Prior to the inspection of plant materials by the Landscape Architect, the Contractor shall select and tag with identification numbers, all tree specimen plants, and three (3) or more samples typical to each kind and size of all other plant materials proposed for use in accordance with types and designations as shown on the drawings.
 - c. Inspection of plants by the Landscape Architect at the place of growth or upon delivery will be for quality and size. Variety, color, and all other requirements shall be the responsibility of the Contractor. Inspection for size of ball or roots, latent defects and for other requirements will be made at the site during progress of the work by the Landscape Architect.
 - d. Tagged samples of plant materials shall be delivered to the site and planted in locations as shown on the drawings, or as designated by the Landscape Architect. These tagged samples shall be maintained, protected, and used as standards for comparison with the plants furnished for the work.
 - e. The Contractor shall make a written request to the Landscape Architect five- (5) working days in advance for all inspections at the various nurseries and collecting grounds. This request shall state the location of the nursery or collecting grounds and shall list the particular plants which are to be inspected, as well as the size of such plants.
 - f. If the plants and materials, which are required to be inspected by the Landscape Architect, are located outside a radius of fifty (50) miles from the project site, the entire cost of the inspectors will borne and paid for the Contractor.
 - g. The Contractor or the Landscape Architect's authorized representative shall be present during all required inspections as specified or as may be required by the Landscape Architect.

6. Digging and Handling of Plant Material:
 - a. Plants marked "B&B" on the list shall be balled and burlapped with ball diameters as specified in the USA Standard for Nursery Stock. Container grown nursery stock will be accepted as approved by the Landscape Architect.
 - b. NO plant will be accepted when the ball has been cracked or broken in moving, or during the process of planting, or when the burlap and ropes have been removed. All balled and burlapped plants that cannot be planted immediately on delivery shall be set on the ground and the balls well covered with soil or other acceptable mulch material and shall be kept moist until planted.
 - c. Plants marked "POT" shall be pot grown with a well-established root system. Diameter spread determines standard inside diameter or pot in which they shall be grown for at least three (3) months prior to delivery.
 - d. All plants shall be handled so that the roots are adequately protected at all times. During shipment, all plants shall be properly protected by a tarpaulin or other suitable covering. No plant shall be so bound with rope or wire at any time as to damage the bark, break branches, or destroy its natural shape.
 - e. Plants shall be properly marked for identification and for checking as designated on the plant list. Each bundle of plants and all separate plants shall have legible waterproof labels securely attached thereto before delivery to the site.
7. Rejection:
 - a. All plant material shall be inspected and should the roots be dried out, large branches broken, balls of earth broken or loosened, or areas of bark torn, the Landscape Architect may reject the injured materials.
 - b. Plant material damaged as a result of delivery, storage or handling will be rejected.
- C. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.
- D. Protect and maintain plant life until planted.
- E. Deliver plant materials immediately prior to placement. Keep plants moist.

1.18 PROTECTION

- A. Protect all planted areas and plants from trespassing by individuals and from damage of any kind until completion of all contract work. If any plants are injured, they shall be treated or replaced as required by the Landscape Architect. No work shall be executed in or over prepared plant areas, or adjacent planting, without proper safeguards and protection.

1.19 WARRANTY

- A. The Contractor shall further guarantee that during the period of the guarantee he will make good any defects to the work and all damage caused to the owner's property by such defects or by the work required to remedy such defects.

- B. Within this period of the guarantee, replacements of plants or other materials or work shall be made as approved by the Landscape Architect and guaranteed for one (1) year thereafter, excluding bulbs, sod and annuals, commencing on the date of install acceptance. All plants shall be alive and in satisfactory growth at the end of the guarantee period.
- C. At any time within the period of the guarantee, the Contractor shall replace any plant which has died or is in a dying condition, or which has failed to flourish in such a manner or is such a degree that its usefulness or appearance has impaired due to inferior or defective materials or workmanship, or unfavorable weather conditions. The decision of the Landscape Architect for making replacements shall be conclusive and binding upon the Contractor. The Contractor shall also make good damage to persons or property caused by defective workmanship or materials.
 - 1. Any trees, shrubs, or vines found to be unacceptable as described above shall be removed from the site and replaced during the next planting season.
 - 2. Plant replacements shall be of the same kind and size as specified in the itemized plant list. All plant replacements shall be inspected, furnished, planted and mulched as specified at the Contractor's expense. All sidewalks and other paved areas shall be kept clean at all times.
 - 3. Where trees are replaced, the Contractor shall be responsible for repairing any damage caused by this replacement to lawns or pavements.
- D. During the guarantee period, the Contractor shall, from time to time, inspect the watering, cultivation, and other maintenance operations carried on by the owner, or its agents with respect to such work, and promptly report to the owner any methods, practices or operations which he considers unsatisfactory, and not in accord with the Landscape Architect's interests or good horticultural practices. The failure of the Contractor to so inspect or report shall be construed as an acceptance by him of the owner's maintenance operations, and he shall not thereafter claim or assert that any defects which may later develop are the results of such methods or practices or operations. The Contractor shall have the opportunity, together with the owner, to establish the maintenance program to be followed.
- E. Any material that is 25% dead or more shall be considered dead and must be replaced at no charge. A tree shall be considered dead when the main leader has died back, or 25% of the crown is dead.
- F. Perennials shall be guaranteed for one year after initial acceptance.
- G. Warranty may be void if proper care, by owner or owner's maintenance contractor, is not maintained.
- H. The Landscape Contractor shall be responsible for a one-time replacement only.
- I. The Landscape Contractor will not be responsible for plant material that has been damaged by vandalism, fire, removal, relocation, wildlife, theft or other activities beyond the Landscape Contractor's control. Plant losses due to abnormal weather conditions such as floods, excessive wind damage, drought, severe freezing or abnormal rains will in no way be the responsibility of the Landscape Contractor.

- J. Existing plant material transplanted shall not be guaranteed unless otherwise stated by the Landscape Contractor

1.20 SITE CONDITIONS

- A. Environmental Requirements:
 - 1. Do not install plants when the ambient temperatures may drop to below 35° degrees F or increase above 90° degrees F.
 - 2. Do not install plants when wind velocity exceeds 30 mph.

1.21 SEQUENCING AND SCHEDULING

- A. Requirements: Coordinate the work of this Section with other site work including installation of underground irrigation system, utilities, piping and watering heads when required.
 - 1. Landscape Mulch: Shall not be placed until the required water distribution systems and planting operations have been completed within the area.
- B. Planting: Install plants during the normal planting season.

1.22 MAINTENANCE

- A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for maintenance service.
- B. Instructions: Submit instructions for continuing maintenance under provisions of Section 01 70 00 – Contract Closeout.
- C. Schedule: Begin maintenance immediately after installation of plants and continue maintenance until final acceptance by the Landscape Architect.
- D. Maintain plant life for six months after Date of Substantial Completion.
- E. Maintain plant life immediately after placement until plants are well established and exhibit vigorous growing condition. Continue maintenance until termination of warranty period.
- F. Maintenance includes:
 - 1. Cultivation and weeding plant beds and tree pits.
 - 2. Applying herbicides for weed control. Remedy damage resulting from use of herbicides.
 - 3. Remedy damage from use of insecticides.
 - 4. Irrigating sufficient to saturate root system.
 - 5. Pruning, including removal of dead or broken branches.
 - 6. Disease control.

7. Maintaining wrapping, guys, turnbuckles, and stakes. Adjust turnbuckles to keep guy wires tight. Repair or replace accessories when required.
8. Replacement of mulch.

1.23 PRE-INSTALLATION MEETINGS

- A. Section 01 30 00 - Administrative Requirements: Pre-installation meeting.
- B. Convene minimum **one** week prior to commencing work of this section.

1.24 COORDINATION

- A. Section 01 30 00 - Administrative Requirements: Requirements for coordination.
- B. Install plant life after and coordinate with installation of underground irrigation system piping and watering heads specified in Section 32 84 00.

PART 2 - PRODUCTS

2.01 TREES, PLANTS, AND GROUND COVER

- A. Plant Species: Provide trees, shrubs, ornamental grasses and ground cover of the size, genus, species, and variety shown on the drawing's tree plant schedule. Plants shall have been grown under climatic conditions similar to those in which they will be installed under this contract.
 1. Furnish nursery-grown plants with healthy root systems developed by transplanting or root pruning. Provide well-shaped, fully-branched, healthy, vigorous stock free of disease, insects, eggs, larvae, and defects such as knots, sun scald, injuries, abrasions and disfigurement.
 2. Plants of a larger size may be used if acceptable to the Landscape Architect with a proportionate increase in size of roots or balls.
 3. Shade trees shall be single-stem trees with straight trunk, well-balanced crown, and intact leader, of size indicated. Branching height shall be ½ of tree height, minimum.
 4. Ornamental trees shall be small upright or spreading type multi-stem trees branched or pruned naturally according to species and type, and with appropriate relationship of caliper, height, and branching.
 5. Deciduous shrubs shall have not less than the minimum number of canes appropriate for the type, shape, and height of shrub.
 6. Broadleaf evergreens shall be normal-quality, well-balanced, of type, height, spread, and shape required.
 7. Groundcovers shall be established and well rooted in removable containers or integral peat pots and with the appropriate number and length of runners for the pot size indicated.

2.02 WATER

- A. Water will be furnished to the Contractor by the owner from existing facilities. The Contractor shall furnish all hose and connections necessary for watering plants.
- B. The owner will furnish a water meter to the Contractor where larger quantities of water are necessary or where no existing water facilities exist; however the Contractor must obtain the meter from the Owner. The cost of water shall be borne by the owner.

2.03 HUMUS

- A. Peat moss of partially decomposed fibrous or cellular stems and leaves of any of several species of sphagnum mosses shall be used, conforming to the following requirements:
 - 1. Texture and Composition: Texture may vary from porous fibrous to spongy fibrous, and crumbly or compact, but fairly elastic and substantially homogeneous. It shall be free from decomposed colloidal residue, excessive woody materials (roots and stems) and mineral matter such as iron and sulfur. It should be dark brown in color with shredded particles not exceeding ¼ inch in size.
 - 2. Acidity: pH value not less than 3.2 and not greater than 5.5 at approximately 25 degrees C.
 - 3. Ash: Based on oven dry weight, the ash content shall not exceed 5%.
 - 4. Water Holding Capacity: Shall not be less than 800% by weight, on an oven dry basis. When delivered to the site, the moisture content shall be between 35% and 50%.

2.04 FERTILIZER

- A. All fertilizer shall be a commercial type fertilizer with the following approximate analysis:
 - 1. Nitrogen..... 6%
 - 2. Phosphoric Acid..... 24%
 - 3. Potash..... 24%

2.05 SHREDDED HARDWOOD BARK MULCH

- A. Shredded bark similar to product called "Pay-Gro," manufactured by Pay-Gro Division, Mead Corporation, Dayton, Ohio.
- B. Shredded hardwood bark mulch shall be free of harmful chemicals, diseases, and insects. Mulch shall have a min. 1/8-inch dimension and a maximum length of 2-1/2".

2.06 TREE WRAP

- A. Burlap for Wrapping: Material for wrapping tree trunks shall be of burlap, first quality, at least eight (8) ounces in weight and six (6) inches in width.

- B. Tree wrap for wrapping the trunks shall be either burlap strips, or first quality, 4-inch wide bituminous impregnated tape, corrugated or crepe paper, specifically manufactured for tree wrapping and having qualities to resist insect infestation.

2.07 TREE STAKING AND GUYING (when applicable)

- A. Hose: Hose for tree guys shall be new black two-ply fiber-bearing garden hose, not less than ½ inch inside diameter.
- B. Wire: Wire for tree guys shall be pliable #10 gauge twisted galvanized annealed steel wire.
- C. Stakes: For guying trees shall be 2 inch by 4 inch construction grade lumber, 18 inches long and sharpened at one end.

2.08 TREE PAINT

- A. Waterproof, adhesive, and elastic, free from kerosene, coal, tar, creosote, or any other materials injurious to the life of the tree. Tree paint shall contain an antiseptic.

2.09 TREE WATERING BAG

- A. Deciduous Trees
 - 1. Treegator® Original or approved equal
 - a. for all deciduous trees up to 8-inch caliper
- B. Evergreen Trees
 - 1. Treegator® Jr. Pro or approved equal
 - 2. for all evergreen trees with branches more than 6-inches above the ground

2.10 ANTI-DESICCANT

- A. An emulsion equal to “Wilt-Pruf,” which will provide a protective film over plant surfaces, permeable enough to permit transpiration. Anti-desiccant shall be delivered in the sealed containers of the manufacturer and shall be mixed and applied according to manufacturer’s instruction.

2.11 INSECTICIDE

- A. An all-purpose spray equal to “Malathion” and shall be effective against all types of pests and insects. The spray should be delivered in the manufacturer’s containers and shall be mixed and sprayed according to manufacturer’s instructions.

2.12 FUNGICIDE

- A. Fungicide: A dry powder form equal to mixture of 50% "Fermate" and 50% "Ferbem." Fungicide shall be delivered in manufacturer's containers and shall be mixed and applied according to the manufacturer's instructions.

2.13 HERBICIDE

- A. Shrub Beds: A granular form herbicide equal to "Ronstar G" as manufactured by Chipco. Apply only as recommended by manufacturer.
- B. Groundcover Beds: A granular form herbicide equal to "Treflan" as manufactured by Elanco Products Co., a division of Eli Lilly and Co. Apply only as recommended by manufacturer.

2.14 MUSHROOM COMPOST

- A. A 3-inch deep layer of approved mushroom compost will be added to the entire surface area of all mass planting beds. The mushroom compost will be from approved supplier. Contractor will supply product information regarding material properties. Submit sample.

2.15 TOPSOIL

- A. All additional topsoil required for planting operations shall be furnished by the Contractor. The topsoil used shall be of the consistency and quality as approved by the Landscape Architect. Topsoil shall be new, fertile, friable, natural loam, surface soil, reasonably free of subsoil, clay lumps, bugs, roots, weeds, and stones larger than 2" diameter, stalks, debris, extraneous or toxic matter harmful to plant growth. All such undesirable material shall be disposed of by this Contractor off the premises or as directed by the Landscape Architect.

2.16 PLANTING MIXTURE

- A. Soil for planting shall consist of seven (7) parts approved topsoil to one (1) humus with one (1) pound of fertilizer thoroughly mixed into each cubic yard of planting mixture.

2.17 WEED CONTROL

- A. Non-Selective, pre-emergent weed control.

2.18 PLANT MATERIALS

A. Planting Stock:

1. Species: In accordance with Standardized Plant Names, official code of American Joint Committee on Horticulture Nomenclature.
2. Identification: Label individual plants or each bundle of plants when tied in bundles.
3. Plants: No. 1 Grade conforming to "American Standard for Nursery Stock" of American Association of Nurserymen (AAN); well-branched, vigorous and balanced root and top growth; free from disease, injurious insects, mechanical wounds, broken branches, decay and other defects.
4. Trees: Furnish with reasonably straight trunks, well balanced tops, and single leader.
5. Deciduous plants: Furnish in dormant state, except those specified as container grown.

- B. Trees Plants and Ground Cover: Species and size identifiable in plant schedule, grown in climatic conditions similar to those in locality of the Work.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Section 01 30 00 - Administrative Requirements: Verification of existing conditions before starting work.
- B. Verify prepared subsoil and planters are ready to receive work.
- C. Saturate soil with water to test drainage.
- D. Verify required underground utilities are available, in proper location, and ready for use.
- E. The Contractor shall stake out all plant material locations as per the plans and specifications and gain the Landscape Architects approval of all layout work prior to any excavation for plant holes.
- F. Locate all utilities prior to layout work.
- G. Any conflicts between plant locations and existing utilities or other site elements shall be called to the attention of the Landscape Architect who will determine alternate locations.
- H. Excavation:
 1. Perform all necessary excavations as required for planting operations. Contract prices shall include rock, broken concrete and similar excavations as may be required to fulfill the intent of the plans and specifications.
 2. All excess excavated materials shall be disposed of by the Contractor as desired.

3.02 INSTALLATION

A. Planting Seasons:

1. Deciduous Plants:
 - a. April 1st to June 15th.
 - b. October 1st to December 15th.
2. Evergreen Plants:
 - a. April 1st to May 15th.
 - b. September 1st to October 1st.

B. The actual planting, however, shall be done during good weather within these time periods to obtain acceptable results. If good weather is present outside the time frame, planting can occur with the approval of the Landscape Architect and Owner.

C. The planting periods designated above may be extended for container grown plants or as weather conditions allow as determined by the Landscape Architect.

D. Pruning, Painting and Spraying:

1. Each tree and shrub shall be pruned to preserve the natural character of the plant and in a manner appropriate to its particular requirement in the landscape design. In general, at least 1/3 of the wood shall be removed by the thinning or shortening branches, but no leaders shall be cut. Pruning shall be heavier on collected plants and on nursery grown plants. Any sucker growth and broken or badly bruised branches shall be removed with clean cuts.
2. Prune with sharp tools only. Make all cuts flush and clean; especially where lower branches have been removed from collected trees. Paint all pruning cuts over $\frac{3}{4}$ inches in diameter with tree paint.
3. The Landscape Architect must be present to approve any exceptional pruning plants to fulfill a definite purpose. All pruning shall be completed on the site after delivery.
4. Spraying will be required only as directed when conditions warrant additional protection.

E. Mulching and Herbicide Applications:

1. All shade trees, ornamental trees, singularly planted shrubs and hedge plantings shall be mulched. The mulch as herein specified shall cover the entire planting pit or trench with a minimum of two (2) inches and not more than three (3) inches in depth.
2. All massed or bedded plantings will be mulched as specified above Item 1. The entire bed shall be mulched under the plants. In addition, the Contractor shall be responsible for the application of a herbicide as herein specified. Application must follow the manufacturer's directions exactly.
3. No mulching will be required in groundcover areas or trees planted within pavement areas. No herbicides shall be used on newly established groundcover beds. Once the beds are established, a pre-emergent granular herbicide, Treflan, or equal may be used according to manufacturer's directions on groundcovers that do not die back in winter. NO herbicides may be used on groundcovers that do die back each winter.

F. Wrapping:

1. All tree trunks of 2-1/2" diameter or larger shall be wrapped with burlap. Wrapping shall start at the base of the tree and extend up the entire trunk to the height of the first branches. Burlap shall overlap the preceding wrap by 3- inches and shall be tied at the top and bottom and at 2- foot intervals with suitable twine.

G. Staking and Guying (where applicable):

1. All guying and staking shall be done immediately after wrapping. Plants shall stand plumb after staking.
2. All evergreen trees shall be staked and guyed. Deciduous trees 4- inches and over shall be staked and guyed.
3. Other trees shall be staked as required by the Landscape Architect in special locations due to the unusual site conditions.
4. Staking shall be done to conform to the standard landscape construction methods, using a three-point guying procedure with galvanized wires, hosed loops around tree trunks, turn buckles and wooden stakes driven eighteen (18) inches into the ground. Staking of trees in planters shall conform to detail on plan.

H. Watering Bags

1. Install Treegator® watering bags on all deciduous trees up to 8-inch caliper and all evergreen trees 4-ft high and greater.
2. Maintain water levels in all watering bags for first growing season.

3.03 SCOPE OF WORK

- A. The Landscape Contractor shall be responsible for furnishing and installing all plant material shown on the drawings and plant list, as submitted with the contract. The Landscape Contractor shall have investigated the sources of supply and satisfied himself/herself that he/she can supply all the plants specified on the drawings in the size, variety and quality noted before submitting the bid. Failure to take this precaution will not relieve the successful bidder from the responsibility for furnishing and installing all the plant material in strict accordance with the contract requirements.

3.04 STANDARDS

- A. Plants will be in accordance with the current ANLA's standards and conform in general to representative species.

B. Bare Root

1. Bare-rooted shrubs shall be dug with adequate roots and shall have minimum root spreads as follows:

Height of Plant:

18in. 2 ft. 3 ft. 4 ft. 5 ft. 6 ft.

Minimum Root Spread:

10 in. 11in 14 in. 16 in. 18 in. 20 in.

2. Roots shall be protected during handling and planting to guard against drying out and damage.

C. Balled and Burlapped (B&B)

1. Balled and burlapped plants shall be dug with firm root balls free of noxious weeds. There should be no excess soil on top of the root ball or around the trunk.
2. Ball sizes shall be in accordance with ANLA Standards.
3. Caliper and Height Measurement: In size grading B&B single-trunk trees, caliper shall take precedence over height. Caliper of the trunk shall be taken 6" above the ground level (up to and including 4" caliper size) and 12" above the ground level for larger trees. For multiple-trunk trees, height measurement shall take precedence over caliper.

D. Container-Grown Stock

1. The size of container-grown shrubs is measured by height and width of plant. Container-grown trees are measured by the same standards listed in section 3.02, C.3 above. Herbaceous perennials shall be measured by pot size, not top growth. The root system of container-grown plants shall be well-developed and well-distributed throughout the container.
2. All container-grown trees and shrubs that have circling and matted roots shall be treated in the following manner prior to planting: using a knife or sharp blade, make 4-5 cuts, 1" deep, the length of the root ball, to cut all circling roots.
3. All container-grown plants should be grouped and watered daily until they are planted in the landscape. To properly acclimate to new conditions after being planted in the landscape, container material must have ample soil moisture. Until roots penetrate the soil, soil must remain moist. Water twice weekly or at four-day intervals until the equivalent of one inch of rainfall or supplemental irrigation is received.

- E. Root control bags – trees and shrubs: Plants grown in root control bags may be slightly larger than root ball sizes identified by ANLA standards. Before transplanting these into the landscape, the geotextile bag must be completely removed from around the root ball, and the tree properly staked. Adequate irrigation is essential to root control bag trees and shrubs.

- F. Trees shall be nursery-grown unless otherwise specified. Pruning shall be done before planting or during the planting operations.

- G. All plant material in transit shall be covered to keep material from drying out. The covering shall comply with state and local laws pertaining to the transport of materials.

3.05 PLANT MATERIAL INSPECTION

- A. Plants may be subject to inspection and approval by the Landscape Architect or owner at the place of growth or holding yard for conformity to specification requirements as to quality, size and variety. It is the Landscape Contractor's responsibility to know his/her sources. The Landscape Contractor shall select plants ahead of inspection visits to

prevent rejection of materials delivered to the site. Cost of the inspection visits shall be borne by each individual party.

- B. Plants damaged in handling or transportation can be rejected by the Landscape Architect or the owner.
- C. Any plant material inspected at the place of growth, accepted and tagged by the Landscape Architect or owner that has not been damaged during transportation, cannot be rejected at the site as long as the tag remains attached to the plant.
- D. State nursery inspection certificates shall be furnished to the Landscape Architect upon request.

3.06 PLANT MATERIALS

- A. Plant Materials: Nursery grown plants shall mean plants which are healthy, vigorous plants lined out in rows in a nursery and which are annually cultivated, sprayed, pruned and fertilized all in accordance with good horticultural practice as approved by the Landscape Architect. All plants shall be nursery grown unless specified to be collected. All plants shall have grown under climatic conditions similar to those in the locality of the project, or have been acclimated to the conditions of the locality for at least two (2) years.
- B. All plants shall be freshly dug or container grown. Neither heeled-in plants nor plants from cold storage will be accepted. All nursery grown plants shall have been transplanted or root pruned at least once in the past three- (3) years. Balled and burlapped plants must come from soil which will hold a firm ball.
- C. All plants shall be typical of their species or variety, shall have a normal habit of growth, and shall be first quality, sound, healthy vigorous, well branched and densely foliated. They shall be free of disease, insect pests, eggs or larvae.
- D. All plants shall conform to the measurements specified in the plant list and shall conform to the U.S.A. Standards for Nursery Stock.
- E. All plants and all tree trunks shall be measured when the branches are in their normal position. Dimensions for height and spread as contained herein refer to the main body of the plant and not from branch-tip to branch-tip. The heights of tree trunks need not be as specified if the required height can be obtained by pruning the lower branches without leaving unsightly scars or otherwise damaging the trunk. No pruning of branches to obtain the required height, however, shall be done before the plants are delivered to the site unless so approved in writing by the Landscape Architect.
- F. All trees must have straight trunks with a single leader intact. There shall be no abrasion of the bark, and no fresh cuts of limbs over 1-1/4 inch, which have not completely callused over.

- G. Specimen Plants: Whenever specimen plants are called for in the plant list, it shall denote plants of the specified size, symmetrical and full branched on all sides, exceptionally heavy and of uniform size.
- H. No substitutions shall be made from the plants specified unless written request is received from the Contractor and permission is granted in writing by the owner.

3.07 PLANTING PROCEDURE FOR TREES

A. PREPARING TREE PIT

1. Walls of tree pit shall be dug so that they are vertical, or sloping outward in heavy soils, and scarified and the bottoms horizontal.
2. The tree pit must be a minimum of 9"-12" larger on every side than the ball of the tree. (Ball diameter plus 24")
3. The tree pit shall be deep enough to accommodate the ball depth to allow 1/8 of the ball to be above the existing grade. Plants shall rest on undisturbed existing soil or well-compacted backfill.
4. Pits for bare-rooted trees shall only be broad enough to accommodate the roots fully extended and only deep enough so that the uppermost roots will be just below the original grade.
5. If poor drainage is suspected, a percolation test may be required. A twelve-inch wide by eighteen-inch deep hole must be filled with water and eight hours later, the hole should be empty. Sub-drainage may be needed if the hole does not drain properly in eight hours.

3.08 PLACING TREE IN PIT

- A. Place the tree in the pit carrying the ball and then lowering it into the pit. Never lift the tree by the trunk or branches.
- B. Set the tree straight and in the center of the pit with the most desirable side facing toward the prominent view.
- C. For bare-rooted trees, set the tree in the pit so that all roots, when fully extended, will not touch walls of the planting pit and the uppermost root is just below the original grade.
- D. All bare rootstock shall be planted in holes large enough to accommodate the full spread of the roots without crowding. Backfill the plant material (approximately $\frac{3}{4}$ of the hole) with the planting soil mixture and thoroughly water in place. Set all plants plumb and in straight lines when required. All bare root material shall be planted 1-1/2 inches lower than originally planted in the nursery. All material shall be root pruned to remove undesirable root growth and to improve characteristics.
- E. Remove containers from all container-grown trees. Slash the edges of the root balls from top to bottom, at least 1" deep. The slashing of roots may not be required for containers pre-treated with copper coating or plants grown in a Cellugro system or in root containment bags.

3.09 BACKFILLING TREE PIT

- A. Each site is unique. Soil tests should be used to identify special conditions. Backfill mixture for trees and shrubs shall be $\frac{3}{4}$ existing soil mixed with $\frac{1}{4}$ organic material, plus granular fertilizer. If compost is used, omit the granular fertilizer.
- B. If any other additives are found to be needed at the time of planting, it shall be with the approval of the Landscape Contractor, Landscape Architect and owner or owner's representative at an additional negotiated cost.
- C. Backfill tree pit with a soil mixture stated in the specifications, except where existing soil is suitable according to soil test results.
- D. If trees are to be staked or guyed at the time of installation, you must cut and remove rope or wire off the top 50% of rootball and pull burlap back to the edge of the ball. Remove as much burlap, woven products and twine as possible. All plastic or synthetic film or twine must be removed from the rootball. Cut all twine away from trunk. If trees are not staked at the time of installation, the owner must be notified in writing to remove all rope and burlap from the top of the rootball one year from installation date.
- E. The tree must remain straight during backfilling procedure.
- F. Thoroughly mix soil amendments, if needed, either prior to filling pit or as pit is being filled.
- G. Backfill sides of tree pit halfway with soil mixture and tamp as pit is being filled. Do not over compact top $\frac{2}{3}$ of planting mixture.
- H. Finish backfilling sides of tree pit and tamp firmly.
- I. Never cover top of rootball with soil.
- J. Form a saucer above existing grade, around the outer rim of the tree pit, especially on slopes and in heavy soils.
- K. Mulch top of root ball and saucer to a minimum depth of 3", not to exceed 3". Do not place mulch against the trunk.
- L. Water thoroughly on the interior of the tree saucer until it is filled, even if it is raining. A second watering may be necessary to insure saturation of the root ball and elimination of air pockets. An alternative watering method is to backfill half of the pit, flood the pit and completely backfill afterwards. Slow release watering devices or automatic drip irrigation systems will improve survival.
- M. Remove all tags, labels, strings and wire from the tree, unless otherwise directed.

3.10 PLANTING PROCEDURES FOR SHRUBS

A. PLANTING SHRUBS

1. For a single shrub, the pit shall be dug 18 inches wider than the rootball diameter and deep enough to allow 1/8 of the rootball to set above existing grade.
2. For a shrub mass planting, the entire bed area shall be tilled 4-6" deep. Tilling should only be done in moist soil to avoid compaction. If the soil is in clay or silt or loam, organic material should be added. Each shrub pit shall be excavated for the proper setting of the rootball.
3. Place the shrub in the pit by lifting and carrying it by the rootball or container. Remove containers from all container-grown shrubs; slash the edges of the rootball from top to bottom 1: deep. The slashing of roots may not be required for containers pre-treated with copper coating or plants grown in a Cellugro system or in root containment bags.
4. Set the shrub straight and in the center of the pit with the most desirable side facing toward the prominent view.
5. For individual shrub planting, use a backfill mixture except when existing soil is suitable as determined by soil test.
6. The shrub must remain straight during backfilling procedure.
7. Backfill sides of the pit halfway up with soil mixture and tamp as the pit is being filled. Enough planting soil mixture shall be used to bring the surface when settled to the required grade.
8. Cut and remove rope or wire off the top of the rootball and pull burlap back to the edge of the ball. Remove as much burlap, woven products and twine as possible. All plastic or synthetic film or twine must be removed from the rootball. Cut all twine away from trunk.
9. Finish backfilling the sides of the shrub pit and tamp firmly.
10. The grading of the shrub pot shall form a saucer at least 4 inches in depth above the existing grade and completely around the planting pit.
11. Mulch tops of rootball and saucer a maximum depth of 2-inches.
12. Water shrub or shrub mass thoroughly even if it is raining. A second watering may be necessary to insure saturation of the rootball and elimination of air pockets. An alternative watering method is to backfill half of the pit, flood the pit and completely backfill afterwards. Slow release watering devices or automatic drip irrigation systems will improve survival.
13. Prune out any dead or broken branches. Prune hedge as directed by Landscape Architect.
14. Remove all tags, labels, strings, wire, etc. from the plant unless otherwise directed.

3.11 PLANTING PROCEDURES FOR ALL CONTAINER GROWN TREES & SHRUBS

A. CONTAINER REMOVAL

1. Remove the plant either by cutting or inverting the container.
2. For untreated plastic container-grown plants with circling roots, use a sharp knife to make 4-5 1" cuts the length of the rootball.
3. Plant shrub or tree a minimum of 1/8 of the height of the rootball above existing grade.
4. Apply a 2 to 3" thick layer of approved mulch.

5. Plants grown in root containment bags must have the bags removed during the planting operation. No additional slashing of the rootball is necessary.

3.12 PLANTING PROCEDURES FOR GROUND COVER, PERENNIALS & ANNUALS

A. PREPARING GROUND COVER, PERENNIAL & ANNUAL BEDS

1. The planting bed shall be loosened when the soil is moist prior to planting by tilling. Soil shall be loosened to a depth of 4 to 6-inches.
 - a. Organic matter shall be spread over the bed to a depth of 2" for peat moss or 1" deep for compost, i.e., not to exceed 4 cubic yards of compost/1000 square feet, after the soil has been loosened. The organic matter shall then be worked into the bed by tilling
 - b. Fertilizer shall be top dressed over bed area (except when compost is applied) based on soil test results. In the establishment stage, liquid fertilizer may be applied to annuals as directed by owner or Landscape Architect.
 - c. Mulch entire bed to a minimum depth of 1", 2" maximum, with approved mulch, such as pine fines, pine needles or unscreened compost.

3.13 PLANTING GROUND COVER, PERENNIALS & ANNUALS BEDS

- A. Before planting, biodegradable pots shall be split, and non-biodegradable pots shall be removed. Root systems of all potted plants shall be split or crumbled.
- B. Excavate all groundcover areas to a depth of 9- inches and replace with 6- inches of topsoil and 3- inches of mushroom manure or well rotted manure thoroughly worked into the total depth of topsoil.
- C. The plants, either potted or bare root, shall be installed so that the roots are by soil below the mulch. Potted plants shall be set so that the top of the pot is even with the existing grade. The roots of bare root plants shall be covered to the crown. (Ground cover and perennial excavation shall be minimally the depth of the container plus 8 inches)
- D. Spacing of plants shall be installed as noted on the landscape plan or contract.
- E. The entire planting bed shall be thoroughly watered.
- F. Treat the mulched and planted bed with a pre-emergent, soil-applied herbicide if directed by the owner or Landscape Architect. Apply the pre-emergent herbicide only when all foliage is dry to prevent foliar burn.

3.14 PLANTING PROCEDURES FOR BULBS

- A. The planting bed shall be loosened when the soil is moist prior to planting by tilling. Depth of loosening depends on bulb species.

- B. Spread Organic matter over the bed to a depth of 2-inches for peat moss or 1-inch deep for compost, i.e., not to exceed 4 cubic yards of compost/1,000 square feet, after the soil has been loosened. Work organic matter into the bed by tilling.
- C. Incorporate fertilizer into the soil, except when compost is used, to the planting depth of perennials and bulbs. The fertilizer rate will be based on the results of the soil test.
- D. Do not fertilize annual bulbs.
- E. Mulch entire bed to a minimum depth of 2-inches with approved mulch.

3.15 PLANTING BULBS

- A. Install bulbs by one of the following methods:
 - 1. When planting small quantities of bulbs or in crowded areas among other plants:
 - a. Dig the bulb planting hole through the mulch with a hand trowel, bulb planter or power auger.
 - 2. When planting large quantities of bulbs in one area:
 - a. Excavate to the recommended planting depth. Set out the bulbs and then cover the bulbs with soil.
 - 3. Bulbs used as a single season display may be planted at a lesser depth.
- B. Plant bulbs so that the basal plate faces down in the planting hole.
- C. Space bulbs as noted on the landscape plan or contract.
- D. Treat mulched and planted bed with a pre-emergent approved for bulbs.

3.16 OTHER MATERIALS

- A. All other materials not specifically described but required for complete and proper completion of the work of this section, shall be as selected by the Contractor subject to the approval of the Landscape Architect.
- B. Method:
 - 1. Prune in such a manner as to preserve the natural growth habit of each plant.
 - 2. Procedure and percentage of growth to be removed shall be subject to the approval of the Landscape Architect.
 - 3. All wound surfaces larger than one inch in diameter shall be treated with a commercial pruning compound.
- C. Deciduous Trees:
 - 1. Pruning shall consist of thinning the twigs or branches as indicated by the habit of growth of the species.
 - 2. Leader and terminal buds shall not be cut unless directed by the Landscape Architect.

D. Deciduous Shrubs:

1. Cut back rapid growing or suckering shrubs 1/3.
2. Prune slow-growing shrubs the same manner as deciduous trees.

E. Evergreens

1. Do not prune evergreens except to remove broken branches.

3.17 MAINTENANCE, CLEAN UP AND ACCEPTANCE

A. Maintenance of Trees, Shrubs, and Groundcovers:

1. Maintenance shall begin immediately upon completion of all planting and shall continue for sixty (60) days during the period of May 1st to November 1st, weather depending. If subsequent months prove to be warm dry months, the contractor shall continue to water the plant material to ensure proper establishment. Maintenance periods that are incomplete on November 1st shall be completed the following maintenance year unless approved by the Landscape Architect – weather permitting.
2. During the maintenance period, the Contractor shall water, cultivate, weed, reset, upright, and straighten all plants as required for healthy growth.
3. The Contractor shall water the plants to receive a 1 (one) inch of water per week. A rain gauge should be placed in the planting to catch both rainfall and irrigation water to verify the amount of application. Provide sufficient water to saturate root system.
4. The Contractor shall maintain the planting area free from competing weeds. Apply herbicides in accordance with manufactures instructions. Replace plants damaged from use of herbicides.
5. The Contractor shall regularly inspect the planting for insects and diseases, notifying the Landscape Architect of any noted occurrences. Apply pesticides in accordance with manufacturer instructions. Replace plants damaged from lack of pesticides.
6. Trimming and pruning of dead or broken branches, treatment of pruned areas or other wounds, and removal of all debris.
7. After the acceptance of the planting, the Contractor is responsible for settling of the planting beds.
8. Furnish and apply all sprays necessary to correct and protect against disease and insect infestation.
9. Protect all plantings against trespassing, damage, and theft.
10. Protect landscaping from damage due to landscape operations, by other contractors and trades, and trespassers. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged landscape work as directed.
11. Maintain by pruning, cultivating, and weeding as required for healthy growth. Restore planting saucers. Tighten and repair stake and guy supports and rest plants to proper grades or vertical position as required. Restore or replace damaged wrappings. Spray as required to keep trees and shrubs free of insects and disease.
12. Maintain all plants until final acceptance following the warranty period.
13. The owner will be responsible for all maintenance requirements for new plantings after this required sixty (60) day period and preliminary acceptance by the owner.

B. Clean Up:

1. Remove from the site, all debris resulting from the work herein specified.
2. All pavements and walks shall be left broom clean.

C. Preliminary Acceptance:

1. There should be a verification of performance for work by contract documents to be conducted by the Landscape Architect or owner's representative on-site and in the presence of the Landscape Contractor, for the purpose of acceptance.
2. Preliminary acceptance shall be given with regard to the completed planting operations for the purpose of the owner assuming the responsibility for maintenance of the project. This preliminary acceptance will be given only after the Contractor has completed all of the requirements as herein specified, but will not release the Contractor of his/her responsibilities.
3. The Contractor shall make his/her written notification request for an inspection to determine preliminary acceptance to the Landscape Architect five (5) days in advance.
4. During inspection for initial acceptance, the Landscape Contractor shall have an acceptance form to be signed by the owner or owner's representative.
5. Initial Acceptance: There should be an approval of the work inspected. Acceptance can be on partially completed work under the contract, if approved by the Landscape Architect or owner. If, for reasons beyond the Landscape Contractor's control, work has stopped, inspection shall be made on partially completed work. Warranty shall begin after landscape inspection and acceptance. Maintenance after initial inspection and acceptance shall be the responsibility of the owner, unless an optional maintenance contract has been specified.

D. Final Inspection and Acceptance:

1. Upon completion of the guarantee period and all necessary replacement plantings, the Contractor will make their request for final inspection in writing giving a minimum of ten (10) days notice.
2. Upon completion of the final inspection and the Landscape Architect's approval of the findings, the Landscape Architect will certify to the owner that the project should receive Final Acceptance.

END OF SECTION