

Sonny Bowman Reading Garden

Shenandoah County Public Library
Edinburg, Virginia

PROJECT MANUAL

for re-bid

January 16, 2020

LPDA, Inc.

Land Planning & Design Associates, Inc.
1006 E. Jefferson St., Suite B
Charlottesville, VA 22902
Ph: 434-296-2108



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**County of Shenandoah
600 N. Main Street, Suite 102
Woodstock, Virginia 22664**

January 16, 2020

INVITATION TO BID

INVITATION TO BID NUMBER: 2020-001

PROPOSAL CLOSING DATE: Friday, February 7, 2020 – 2:30 p.m.

SUBJECT: Construction of the **Sonny Bowman Reading Garden** at the Shenandoah County Public Library, Edinburg, VA

To whom it may concern:

Sealed bids for the supply of the goods and services fully described in the enclosed Contract Specifications will be accepted until Friday, February 7, 2020 at 2:30 p.m. and publicly opened and read on Friday, February 7, 2020 at 2:30 p.m. Bids should be placed in a sealed envelope, marked clearly on the outside with “**Sonny Bowman Reading Garden**”, and delivered to:

600 N. Main Street, Suite 102
Woodstock, VA 22664

The Scope of Work includes, but is not limited to, clearing and grading, asphalt and concrete demolition, concrete and paver sidewalks, stone seat walls, custom furnishings and structures, stormwater improvements, ADA ramp, electrical work, planting, project cleanup, and related improvements.

Bids must be prepared in complete conformance with the enclosed Bid Information and Requirements form, which is hereby incorporated into this invitation. Failure to meet any standard set forth in the Bid Invitation and Requirements Form (“BIRF”) may result in rejection of the bid. The enclosed BIRF is hereby incorporated in and made a part of this invitation to bid.

Unless a greater percentage is specified elsewhere in the contract documents, up to five percent of any sum due may be retained by the County to assure faithful performance of the contract. All retainage will be paid to the contractor with the last payment. *If* the contract exceeds \$200,000 *and* it relates to the construction of highways, roads, streets, bridges, parking lots, demolition, clearing, grading excavating, paving, pile driving, miscellaneous drainage structures, or the installation of water, gas, sewer lines or pumping stations, the contractor may elect to have the retainage paid into an escrow account.

Bidders must provide a bid bond equal to 5% of the amount of their bid with their bids, in accordance with the BIRF which is enclosed. Alternatively, bidders may provide a certified check, cashier’s check, or cash escrow in the face amount required for the bond.

Successful bidders must provide a Performance Bond and a Labor and Material Payment Bond in accordance with the BIRF. Alternatively, bidders may provide a certified check, cashier's check, or cash escrow in the face amount required for the bond.

Any bidder, upon request, shall be afforded the opportunity to inspect bid records within a reasonable time after the opening of all bids but prior to award, except in the event that the County decides not to accept any of the bids and to reopen the contract.

Prices quoted in bids must be held firm for thirty (30) days after the date set for the opening of the bid to allow the County time to process and award contract(s).

All bidders are encouraged to attend an optional pre-bid meeting that is scheduled for Friday, January 24, 2020 at 12:00 p.m. at the site: County Library Building, 514 Stoney Creek Blvd., Edinburg, VA 22824. Bidders will meet in the Activity Room.

Contract Documents will be available for review or purchase beginning Thursday, January 16, 2020 at the following locations:

Shenandoah County Procurement Website: https://shenandoahcountyva.us/administration/invitations-to-bid/	LPDA 1006 E. Jefferson Street, Suite B Charlottesville, VA 22902 Ph: 434.296.2108 Contact: Tristan Cleveland tristan@lpda.net (purchase by e-mail request only)
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All inquiries for technical information should be submitted in writing (no phone calls please) either mailed or e-mailed, or to:

Tristan Cleveland, ASLA
Land Planning & Design Associates, Inc.
1006 E. Jefferson Street Suite B
Charlottesville, VA 22902
Phone: 434.296.2108
tristan@lpda.net

Very truly,

Evan L. Vass,
County Administrator

Enclosure

SECTION 0200

**BID INFORMATION AND REQUIREMENTS
SHENANDOAH COUNTY, VIRGINIA**

1. General:

- a. This document will form part of the contract between the successful bidder and the County. The terms of this document are subject to the Invitation to Bid ("ITB"), which shall control in the event of conflict.
- b. Sealed bids subject to the conditions, specifications, and instructions below and on the attached sheets hereto, will be received in person at the Administration Office, 600 North Main Street, Suite 102, Woodstock, 22664, until the time and date specified in the ITB. If the ITB so indicates, may also be transmitted by email.
- c. Bids concerning separate bid invitations must not be combined on the same or placed in the same envelope. Bids submitted in violation of this provision risk not being considered.

2. Contents of Bids:

- a. All bids must be signed in order to be considered. If the bidder is a firm corporation, the bidder should show the title of the individual executing the bid, and if the individual is not an officer of the firm or corporation, the bidder should submit proof that the individual has the authority to bind the firm or corporation.
- b. Unless the ITB or specifications expressly provide otherwise, where a brand or trade name appears in the specifications, it is understood that the brand or trade name referred to, or its equivalent, shall be furnished. If the bidder proposes equivalent but not identical items, the bidder must furnish descriptive literature and full particulars for review, so that the County may assure equivalence of item.
- c. Samples of items, if requested, shall be furnished by the bidder without charge. Upon request, within sixty days after the date set for opening the bids, the samples will be returned at the bidder's expense. Otherwise samples may be destroyed or consumed.
- d. Time of proposed delivery shall be stated in number of calendar days. General terms such as "stock," "immediately," and "as soon as possible," may be cause for rejection. Unless otherwise specified, quote the earliest delivery date as it may be considered a factor in making an award.

- e. All erasures, interpolations, and other changes in the bid should be signed or initialed by the bidder. Bids containing any conditions, omissions, erasures, alterations, or items not called for in the proposal, may be rejected by the County as being incomplete.
- f. Unless a lump sum price is specifically requested, unit and extended prices should also be given. Failure to do so may cause a bid not to be considered. In case of error in extension of prices in the bid, the unit price shall govern.
- g. Bids based on a firm price or those including a "downward escalator" clause may be given preference over lower ones bearing an "escalator" clause.
- h. Bidder shall submit with the bid descriptive literature of the commodities, equipment, materials, supplies or services which he or she proposes to furnish, if such articles are produced by a different manufacturer than those specified.
- t. The bid, the bid security, if any, and any other documents required, should be enclosed in a sealed opaque envelope.

3. **Bidder's Representations:**

- a. Each bidder, by submitting a bid in response to this invitation to bid, represents that the bidder has read and understands the contract specifications and has familiarized himself with all federal, state and local laws, ordinances, rules and regulations that in any manner may affect the cost, progress or performance of the work.
- b. The failure or omission of any bidder to receive or examine any form, instrument, addendum or other documents, or to acquaint himself with conditions existing at the site, shall in no way relieve any bidder from any obligations with respect to his bid or to the contract.

4. **Contractor's Registration:**

Construction contractors are referred to Chapter 11 of Title 54.1 of the Code of Virginia, concerning residency issues, licensing issues, and evidence of licensure. They shall submit proper evidence of their registration prior to the consideration of bids.

5. **Addenda:**

- a. If any party contemplating the submission of a bid on this invitation is in doubt as to the meaning of any part of the plans, specifications or other documents, he should submit a written request for an interpretation thereof to the County. Typically, an interpretation of the contract specifications will be made by addendum duly issued to each party receiving invitation to bid. Addenda will be available at the County offices for review by any interested party. **THE COUNTY SHALL NOT BE RESPONSIBLE FOR EXPLANATIONS OR**

INTERPRETATIONS OF CONTRACT SPECIFICATIONS, EXCEPT AS ISSUED BY ADDENDUM.

- b. Any changes to the ITB or contract specifications shall be in the form of a written addendum from the County which shall be signed by the County Administrator or any duly authorized representative.
- c. To the extent practicable, all addenda will be issued no later than four calendar days prior to the date set for the receipt of bids except an addendum extending the date for the receipt of bids or an addendum withdrawing the invitation to bid.
- d. Each bidder shall be responsible for determining that all addenda issued by the County for the ITB have been received before submitting a bid proposal for the work.
- e. Each bidder should acknowledge the receipt of each addendum in his bid.
- f. Unless otherwise instructed by a potential bidder, the County will issue addenda by email, wherever practicable. If the County does not know a potential bidder's email address, or if email transmission is impracticable, the County may use any other method of delivery reasonably calculated to result in timely delivery to potential bidders.

6. **Taxes:**

- a. The successful bidder shall pay all Town, County, State, and Federal taxes. Such taxes shall not be in addition to the contract price between the County and the successful bidder, as the taxes shall be an obligation of the successful bidder and not of the County, and the County shall be held harmless for same by the successful bidder.

7. **Building Inspection Fees:**

It is the responsibility of the successful bidder to secure all required permits to perform work in Shenandoah County. If a permit is required from the Shenandoah County Building Inspection Department as required by code, no fee will be assessed and it should not be included as an additional cost of this bid.

8. **Submission of Bids:**

- a. All bidders should use the form provided, if any, in submitting their bids.
- b. The envelope containing the bid should be sealed and marked in the lower

left-hand corner with the invitation to bid number, commodity, and due date of the bid. Additional copies of bids should be enclosed in the same envelope as the original bid.

- c. If a bid contains proprietary information or trade secrets, such information must be submitted in a separate sealed and resealable envelope, and clearly marked as such.
- d. Emailed bids are not permitted.

9. **Bid Security:**

- a. If the bidder is required to furnish a bid bond by the invitation to bid, or if the bid is for a construction contract in excess of \$500,000, bidder shall obtain a bid bond from a surety company authorized to do business in Virginia as a guarantee that if the contract is awarded to the bidder, the bidder will enter into the contract for the work described in the bid at the bid price. Alternatively, the bidder may provide a certified check, cashier's check, or cash escrow in the face amount required for the bond.

10. **Modification of Bid:**

- a. A bid may be modified or withdrawn by the bidder anytime prior to the time and date set for the receipt of bids. The bidder shall notify the County, in writing of his intentions.
- b. Modified and withdrawn bids may be resubmitted to the County up to the time and date set for the receipt of bids.
- c. No bid can be withdrawn after the time set for the receipt of bids and for sixty days thereafter.
- d. Bidders whose bids contain a numeric or clerical error (as opposed to a mistake in judgment) may withdraw such bids within two business days of the date and time of opening the bids by notifying the County Administrator of the decision to withdraw in writing. The bidder's original work papers shall be included with such notice.

11. **Expenses Incurred in Preparing Bid:**

Shenandoah County accepts no responsibility for any expense incurred in the bid preparation and presentation, such expenses to be borne exclusively by the bidder.

12. **Bidder Responsibility:**

Before submitting a bid, each bidder shall make all investigations and examinations necessary to ascertain all conditions and requirements affecting the full performance of the contract, and to verify any representations made by Shenandoah County that the

bidder will rely upon. No plea of ignorance of such conditions and requirements will relieve the successful bidder from its obligation to comply in every detail with all provisions and requirements of the contract documents; nor will it be accepted as a basis for any claim whatsoever for any monetary considerations on the part of the successful bidder.

13. **Opening of Bids:**

- a. All bids received on time will be opened and publicly read aloud.
- b. Any bidder, upon request, will be afforded the opportunity to inspect bid records within a reasonable time after the opening of all bids but prior to award, except in the event that the County decides not to accept any of the bids and to restart the procurement process. Otherwise, bid records shall be open to public inspection only after award of the contract.

14. **Insurance:**

- a. Unless expressly waived by the County, the successful bidder shall maintain insurance to protect themselves and the County from claims under the Workman's Compensation Act, and from any other claim for damages for personal injury, including death, and for damages to property which may arise from operations under this contract, whether such operations be by the bidder or by any subcontractor or anyone directly employed by either of them. Such insurance shall conform to the specifications of this section, or the requirements of applicable law, if greater.

The successful bidder shall carry public liability insurance at least in the amounts specified below, including the contractual liability assumed by the contractor, and shall deliver Certificates of Insurance from carriers acceptable to the County specifying such limits, with the County named as an additional insured. In addition, the insurer shall agree to give the County 30 days' notice of its decision to cancel coverage.

- Worker's Compensation and Employer's Liability
Coverage A – Statutory Requirements
Coverage B – \$100,000 Per Occurrence
Coverage C – \$100,000/\$100,000 Accident and/or Disease
All States Endorsement
- Automobile Liability, including Owned, Non-Owned and Hired Car Coverage
Bodily Injury - \$2,000,000 per person, \$2,000,000 each occurrence
- Comprehensive General Liability
Bodily Injury - \$2,000,000 per occurrence, \$2,000,000 annual aggregate
Property Damage - \$250,000 per occurrence, \$250,000 annual aggregate

Including Completed Operations/Products, Contractual Liability for Specified Agreement, Personal Injury, (XCU) Explosion, Collapse and Underground

Coverage, Broad Form Property Coverage.

15. **Award of Contract:**

- a. The Purchasing Agent reserves the right to waive any informality in bids and to reject any or all bids. Where doing so would not undermine the purposes of the County's procurement policy (in the sole judgment of the Purchasing Agent) the Purchasing Agent can, in its discretion, accept a bid which is non-conforming in one or more respects.
- b. The Purchasing Agent shall have the right, before awarding the contract, to require a bidder to submit such evidence of his qualifications as it may deem necessary and may consider any evidence available to it concerning the financial, technical, and other qualifications and abilities of a bidder.
- c. If the bid from the lowest responsible bidder exceeds available funds, the Purchasing Agent may negotiate with the apparent low bidder to obtain a contract within available funds. The Purchasing Agent or his or her designee shall advise the lowest responsible bidder, in writing, that the proposed purchase exceeds available funds. The Purchasing Agent shall further suggest a reduction in scope for the proposed purchase, and invite the lowest responsible bidder to amend its bid proposal based upon the proposed reduction in scope. Repetitive informal discussions with the lowest responsible bidder for purposes of obtaining a contract within available funds shall be permissible. The lowest responsible bidder shall submit an addendum to its bid, which addendum shall include: the change in scope for the proposed purchase, the reduction in price, and the new contract value. If the proposed addendum is acceptable to the Purchasing Agent, he or she may award a contract within funds available to the lowest responsible bidder based upon the amended bid proposal. **If** the Purchasing Agent and the lowest responsible bidder cannot negotiate a contract within available funds, all bids shall be rejected.
- d. The bidder to whom the contract is awarded shall, within twenty days after prescribed documents are presented for signature, execute and deliver to the Purchasing Agent the contract forms and any other forms or bonds required by the bid.
- e. The contract documents shall be subject to and governed by the laws of the Commonwealth of Virginia. Any dispute arising out of the contract documents, their performance, or their interpretation shall be litigated only in the state courts serving Shenandoah County, Virginia.
- f. The Purchasing Agent reserves the right to bid individual jobs as it deems necessary.
- g. Price is not the sole consideration in awarding a contract. Superior qualifications, life-cycle costing, value analysis, quality of workmanship, delivery cost and

timing, and suitability for the County's particular purpose may all be taken into effect.

16. **Bonds:**

If the successful bidder is required to furnish a Performance Bond and a Labor and Material Payment Bond by the invitation to bid, or if the bid is for a construction contract in excess of \$500,000, the successful bidder will be required to furnish a Performance Bond and a Labor and Material Payment Bond in accordance with the requirements of § 2.2-4337 of the Code of Virginia. Alternatively, the bidder may provide a certified check, cashier's check, or cash escrow in the face amount required for the bond.

17. **Contractor's Performance:**

- a. The successful bidder shall furnish all labor, materials and equipment necessary to fulfill the requirements of the contract in strict compliance with the terms, conditions, specifications and drawings of his bid and the contract documents.
- b. The successful bidder agrees and covenants that his agents and employees shall comply with all Town, County, State and Federal laws, and rules and regulations applicable to the business to be conducted under this contract.
- c. The successful bidder shall secure all necessary permits for the proper execution and completion of the work. All bids submitted shall include in price the cost of any business or professional licenses, permits or fees required by Shenandoah County, the Commonwealth of Virginia, or any other governmental entity. Do not include the cost of permits issued by the County in your bid price.
- d. The successful bidder shall ensure that his employees exercise all necessary caution and discretion so as to avoid injury to person or damage to property of any and all kinds.
- e. The successful bidder shall cooperate with County officials in performing the work so that interference with existing County operations will be held to a minimum.
- f. The successful bidder agrees and covenants that he or she shall indemnify and hold the County and its employees and agents harmless against and from all liability, claims, damages and costs, including attorneys' fees of every kind attributable to bodily injury, sickness, disease or death or to damage to or destruction of property resulting from or in any manner arising out of or in connection with the project and the performance of the work under the contract, whether or not also caused in part by a person or entity indemnified by this agreement.
- g. In case of any contractual default by the successful bidder, the Purchasing Agent, after due notice may procure the goods and/or services detailed in the contract

from other sources and hold the successful bidder responsible for all damages including, without limitation, attorneys' fees and any other excess cost occasioned thereby.

18. **Employment Discrimination by Contractor Prohibited:**

- a. During the performance of this contract, the successful bidder agrees as follows:
 - (1) The successful bidder will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, disability, or other basis prohibited by state law relating to discrimination in employment, except where there is a bona fide occupational qualification reasonably necessary to the normal operation of the contractor. The successful bidder agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.
 - (2) The successful bidder, in all solicitations or advertisements for employees placed by or on behalf of the successful bidder, will state that such contractor is an equal opportunity employer.
 - (3) Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting the requirements of this section.
- b. The successful bidder shall include the provisions of the foregoing paragraphs of this section in every subcontract or purchase order of over \$10,000 so that the provisions will be binding upon each subcontractor or vendor.

19. **Drug Free Workplace:**

During the performance of this contract, the contractor agrees to (i) provide a drug-free workplace for the contractor's employees; (ii) post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana is prohibited in the contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition; (iii) state in all solicitations or advertisements for employees placed by or on behalf of the contractor that the contractor maintains a drug-free workplace; and (iv) include the provisions of the foregoing clause in every subcontract or purchase order of over \$10,000, so that the provisions will be binding upon each subcontractor or vendor. For the purposes of this section, "drug-free workplace" means a site for the performance of work done in connection with a specific contract awarded to a contractor in accordance with these provisions, the employees of whom are prohibited from engaging in the unlawful manufacture, sale, distribution, dispensation, possession or use of any controlled substance or marijuana during the performance of the contract.

20. **Compensation:**

- a. The successful bidder shall be required to submit a complete itemized invoice on each delivery or service which he or she may perform under the contract.
- b. Payment shall be rendered to the successful bidder for satisfactory compliance with the terms, conditions and specifications of the contract and within forty-five (45) days after the receipt of the proper invoice.

21. **Successful Bidder's Obligation to Pay Subcontractors:**

- a. The successful bidder awarded the contract for this project shall take one of the two following actions within seven (7) days after the receipt of amounts paid to him by the County for work performed by his subcontractor(s) under the contract:
 - (1) Pay the subcontractor(s) for the proportionate share of the total payment received from the County attributable to the work performed by the subcontractor(s) under the contract; or
 - (2) Notify the County and subcontractor(s), in writing, of his intention to withhold all or a part of the subcontractor's payment with the reason for nonpayment.
- b. The successful bidder shall pay interest to the subcontractor(s) on all amounts owed by the contractor that remain unpaid after seven (7) days following receipt by the contractor of payment from the County for work performed by the subcontractor(s) under the contract, except for amounts withheld as allowed by paragraph (a)(2) above. Unless otherwise provided under the terms of this contract, interest shall accrue at the rate of one percent (1%) per month.
- c. The successful bidder shall include in each of its subcontracts a provision requiring each subcontractor to include or otherwise be subject to the same payment and interest requirements with respect to each lower-tier subcontractor(s).
- d. The successful bidder's obligation to pay an interest charge to a subcontractor(s) pursuant to the payment clause in this section shall not be construed to be an obligation of the County. A contract modification shall not be made for the purpose of providing reimbursement for such interest charge and a cost reimbursement claim shall not include any amount for reimbursement for such interest charge.
- e. The contractor agrees not to assign or subcontract any of the work or obligations required of him under this contract unless (i) the identities of all subcontractors are disclosed in the contractor's bid, along with the scope of work to be performed by such subcontractors; or (ii) the County approves the use of the subcontractor in writing.

22. **Cancellation:**

- a. The County reserves the right to terminate the contract immediately (i) in the event that the successful bidder discontinues or abandons operations; (ii) if adjudged bankrupt, or reorganized under any bankruptcy law; or (iii) fails to keep in force any required insurance policies or bonds.
- b. Failure of the successful bidder to comply with any section or part of the contract may be considered grounds for immediate cancellation of the contract by the County.
- c. If the cancellation clause is used by the County, the successful bidder will be paid by the County for all scheduled work completed satisfactorily by the successful bidder up to the termination date set in the written cancellation notice.

23. **Exceptions and Specifications:**

Bidders taking exception to any part or section of these specifications shall indicate such exceptions on their bid or proposal. Failure to indicate any exceptions shall be interpreted as the bidder's intent to fully comply with the specifications as written. Conditional or qualified bids are subject to rejection in whole or in part.

24. **Governing Documents:**

This procurement is subject to the terms of Chapter 43 of the Shenandoah County Code. Copies are available upon request.

25. **Claims and Appeals:**

All claims against the County and appeals of County decisions shall be made in strict accord with the County's Procurement Policy. Compliance with the policy is mandatory.

26. The County does not discriminate against faith-based organizations.

COMMONWEALTH OF VIRGINIA



GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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PLEASE NOTE: The CO-7, General Conditions of the Construction Contract, has been created specifically for the use of agencies of the Commonwealth of Virginia, which may not alter any provisions without the express written approval of the Virginia Department of General Services, Division of Engineering and Buildings. The General Conditions have significant legal implications and shall not be altered or modified. Nothing in the CO-7, General Conditions of the Construction Contract, shall be amended or deleted or its intent changed, except by an approved and properly issued Supplemental General Condition. The Commonwealth makes no representation as to their suitability for any other purpose. (Note: Political subdivisions intending to modify the General Conditions for their use should consult with their legal counsel.)

1. DEFINITIONS

Whenever used in these General Conditions of the Construction Contract ("General Conditions") or in the Contract Documents, the following terms have the meanings indicated, which are applicable to both the singular and plural and the male and female gender thereof:

Agency: The Agency, institution or department which is a party to the Contract. For purposes of the Contract, the term Owner shall include such Agency, whether or not the Agency owns the site or the building.

Architect, Engineer, Architect/Engineer or A/E: The term used to designate the Architect and/or the Engineer that contracts with the Owner to provide the Architectural and Engineering services for the Project. The A/E is a separate contractor and not an agent of the Owner. The term includes any associates or consultants employed by the A/E to assist in providing the A/E services.

Beneficial Occupancy: The condition after Substantial Completion but prior to Final Completion of the Project at which time the Project, or portion thereof, is sufficiently complete and systems operational such that the Owner could, after obtaining necessary approvals and certificates, occupy and utilize the space for its intended use. Guarantees and warranties applicable to that portion of the Work begin on the date the Owner accepts the Project, or a portion thereof, for such Beneficial Occupancy, unless otherwise specified in the Supplemental General Conditions or by separate agreement.

Change Order: A document (Form CO-11) issued on or after the effective date of the Contract Between Owner and Contractor (Form CO-9) which is agreed to by the Contractor and approved by the Owner, and which authorizes an addition, deletion or revision in the Work, including any adjustment in the Contract Price and/or the Contract Completion Date. The term Change Order shall also include written orders to proceed issued pursuant to Section 38 (a) (3). A Change Order, once signed by all parties, is incorporated into and becomes a part of the Contract.

Code of Virginia: 1950 *Code of Virginia* as amended. Sections of the Code referred to herein are noted by § xx-xx.

Construction: The term used to include new construction, reconstruction, renovation, restoration, major repair, demolition and all similar work upon buildings and ancillary facilities, including any draining, dredging, excavation, grading or similar work upon real property.

Contract: The Contract Between Owner and Contractor, Form CO-9, hereinafter referred to as the Contract.

Contract Completion Date: The date by which the Work must be substantially complete. The Contract Completion Date is customarily established in the Notice to Proceed, based on the Time for Completion. In some instances, however, the Contract contains a mandatory Contract Completion Date, which shall be stated in the Invitation for Bid or Request for Proposal, as applicable.

Contract Documents: The Contract between Owner and Contractor (Form CO-9) signed by the Owner and the Contractor and any documents expressly incorporated therein. Such incorporated documents customarily include the bid submitted by the Contractor, these General Conditions, any Supplemental General Conditions, any Special Conditions, the plans and the specifications, and all modifications, including addenda and subsequent Change Orders.

Contract Price: The total compensation payable to the Contractor for performing the Work, subject to modification by Change Order.

Contractor: The person with whom the Owner has entered into a contractual agreement to do the Work on this project.

Date of Commencement: the date as indicated in the written Notice to Proceed, the receipt of the earliest Building Permit, or a date mutually agreed to between the Owner and Contractor in writing, whichever is the latest.

Day(s): Calendar day(s) unless otherwise noted.

Defective: An adjective which, when modifying the word Work, refers to Work that is unsatisfactory, faulty, deficient, does not conform to the Contract Documents **or** does not meet the requirements of inspections, standards, tests or approvals required by the Contract Documents, or Work that has been damaged prior to the A/E's recommendation of Final Payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion or Beneficial Occupancy).

Drawing: A page or sheet of the Plans which presents a graphic representation, usually drawn to scale, showing the technical information, design, location, and dimensions of various elements of the Work. The graphic representations include, but are not limited to, plan views, elevations, transverse and longitudinal sections, large and small scale sections and details, isometrics, diagrams, schedules, tables and/or pictures.

DSBSD: Virginia Department of Small Business and Supplier Diversity

Emergency: Any unforeseen situation, combination of circumstances, or a resulting state that poses imminent danger to health, life or property.

Final Completion Date: The date of the Owner's acceptance of the Work from the Contractor upon confirmation from the Architect/Engineer and the Contractor that the Work is totally complete in accordance with Section 44(b).

Field Order: A written order issued by the A/E which clarifies or explains the plans or specifications, or any portion or detail thereof, without changing the design, the Contract Price, the Time for Completion or the Contract Completion Date.

Final Payment: The final payment that the Contractor receives pursuant to the applicable provisions of Section 36, except in the event no final payment is made due to termination of the Contract under either Sections 41 or 42. In the event of a termination for cause under Section 41, the Final Payment shall be when the termination became effective. In the event of a termination for convenience under Section 42, the Final Payment shall be either the payment of compensation for termination that the Contractor receives according to the provisions of Subsection 42, or the Owner's determination that no compensation for termination is due the Contractor under Subsection 42, as the case may be.

Float: The excess time included in a construction schedule to accommodate such items as inclement weather and associated delays, equipment failures, and other such unscheduled events. It is the contingency time associated with a path or chain of activities and represents the amount of time by which the early finish date of an activity may be delayed without impacting the critical path and delaying the overall completion of the Project. Any difference in time between the Contractor's approved early completion date and the Contract Completion Date shall be considered a part of the Project float.

Float, Free: The time (in days) by which an activity may be delayed or lengthened without impacting upon the start day of any activity following in the chain.

Float, Total: The difference (in days) between the maximum time available within which to perform an activity and the duration of an activity. It represents the time by which an activity may be delayed or lengthened without impacting the Time for Completion or the Contract Completion Date.

Notice: All written notices, including demands, instructions, claims, approvals and disapprovals, required or authorized under the Contract Documents. Any written notice by either party to the Contract shall be

sufficiently given by any one or combination of the following, whichever shall first occur: (1) delivered by hand to the last known business address of the person to whom the notice is due; (2) delivered by hand to the person's authorized agent, representative or officer wherever they may be found; or (3) enclosed in a postage prepaid envelope addressed to such last known business address and delivered to a United States Postal Service official or mailbox. Notice is effective upon such delivery. All notices to the Owner should be directed to the Project Manager.

If the Owner and the Contractor agree in writing that Notices transmitted by Facsimile (Fax) or e-mail are acceptable for the Project, such Notice shall be transmitted to the Fax number or e-mail address listed in the agreement and shall have a designated space for the Fax or e-mail Notice recipient to acknowledge his receipt by authorized signature and date. The Fax or e-mail Notice with authorized signature acknowledging receipt shall be Faxed or e-mailed back to the sender. The Faxed or e-mailed Notice shall be effective on the date it is acknowledged by authorized signature. All Faxed or e-mailed Notices shall also be sent by hard copy, which shall be effective upon delivery, as provided herein. Notice shall be effective upon the date of acknowledgment of the Faxed or e-mailed Notice or the date of delivery, whichever occurs first.

Notice to Proceed: A written notice given by the Owner to the Contractor (with a copy to A/E) fixing the date on which the Contract time will commence for the Contractor to begin the prosecution of the Work in accordance with the requirements of the Contract Documents. The Notice to Proceed will customarily identify a Contract Completion Date.

Owner: The public body with whom the Contractor has entered into a contractual agreement and for whom the Work or services is to be provided. The term "Owner", as used herein, shall also mean the Agency.

Person: This term includes any individual, corporation, partnership, association, company, business, trust, joint venture, or other legal entity.

Plans: The term used to describe the group or set of project-specific drawings which are included in the Contract Documents.

Project: The term used instead of the specific or proper assigned title of the entire undertaking which includes, but is not limited to, the "Work" described by the Contract Documents.

Project Inspector: One or more persons employed by the Owner to inspect the Work for the Owner and/or to document and maintain records of activities at the Site to the extent required by the Owner. The Owner shall notify the Contractor in writing of the appointment of such Project Inspector(s). The scope of the Project Inspector's authority with respect to the Contractor is limited to that indicated in Section 16 (e) and (f) and as supplemented by the Owner in writing to the Project Inspector and to the Contractor.

Project Manager: The Project Manager as used herein shall be the Owner's designated representative on the Project. The Project Manager shall be the person through whom the Owner generally conveys written decisions and notices. All notices due the Owner and all information required to be conveyed to the Owner shall be conveyed to the Project Manager. The scope of the Project Manager's authority is limited to that authorized by the Owner, who shall provide written information to the Contractor at the Preconstruction meeting defining those limits. Upon receipt of such information, the Contractor shall be on notice that it cannot rely on any decisions of the Project Manager outside the scope of his authority. Nothing herein shall be construed to prevent the Owner from issuing any notice directly to the Contractor. The Owner may change the Project Manager from time to time and may, in the event that the Project Manager is absent, disabled or otherwise temporarily unable to fulfill his duties, appoint an interim Project Manager.

Provide: Shall mean furnish and install ready for its intended use.

Schedule of Values: The schedule prepared by the Contractor and acceptable to the Owner which indicates the value of that portion of the Contract Price to be paid for each trade or major component of the Work.

Site: Shall mean the location at which the Work is performed or is to be performed.

Specifications: That part of the Contract Documents containing the written administrative requirements and the technical descriptions of materials, equipment, construction systems, standards, and workmanship which describe the proposed Work in sufficient detail and provide sufficient information for the Building Official to determine code compliance and for the Contractor to perform the Work. (The General Conditions, any Supplemental General Conditions, various bidding information and instructions, and blank copies of various forms to be used during the execution of the Work are usually bound with the Specifications.)

Subcontractor: A person having a direct contract with Contractor or with any other Subcontractor for the performance of the Work. Subcontractor includes any person who provides on-site labor but does not include any person who only furnishes or supplies materials for the Project.

Submittals: All shop, fabrication, setting and installation drawings, diagrams, illustrations, schedules, samples, and other data required by the Contract Documents which are specifically prepared by or for the Contractor to illustrate some portion of the Work and all illustrations, brochures, standard schedules, performance charts, instructions, diagrams and other information prepared by a Supplier and submitted by the Contractor to illustrate material or equipment conformance of some portion of the Work with the requirements of the Contract Documents.

Substantial Completion: The condition when the Owner agrees that the Work, or a specific portion thereof, is sufficiently complete, in accordance with the Contract Documents, so that it can be utilized by the Owner for the purposes for which it was intended. The Owner at its sole discretion may, after obtaining the necessary approvals and certificates, take Beneficial Occupancy at this time or choose to wait to occupy until after Final Completion is achieved.

Supplemental General Conditions: That part of the Contract Documents which amends or supplements the General Conditions.

Supplier: A manufacturer, fabricator, distributor, material-man or vendor who provides material for the Project but does not provide on-site labor.

Small Business Procurement Plan: The proposed percentage of small business participation in the Total Base Bid Amount submitted by the Contractor as part of its Bid.

Time for Completion: The number of consecutive calendar days following the Date of Commencement which the Contractor has to substantially complete all Work required by the Contract.

Underground Facilities: All pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels or other such facilities or attachments, and any encasements containing such facilities which are or have been installed underground to furnish any of the following services or materials: electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, sewage and drainage removal, traffic or other control systems or water.

Work: The services performed under this Contract including, but not limited to, furnishing labor, and furnishing and incorporating materials and equipment into the construction. The Work also includes the entire completed construction, or the various separately identifiable parts thereof, required to be provided under the Contract Documents or which may reasonably be expected to be provided as part of a complete, code compliant and functioning system for those systems depicted in the plans and specifications.

2. CONTRACT DOCUMENTS

- (a) The Contract Between Owner and Contractor (CO-9), the Workers' Compensation Certificate of Coverage (CO-9a), the Standard Performance Bond (CO-10), the Standard Labor and Material Payment Bond (CO-10.1), the Schedule of Values and Certificate for Payment (CO-12), the Affidavit of Payments of Claims (CO-13), the Contractor's Certificate of Substantial Completion (CO-13.2a), and the Contractor's Certificate of Completion (CO-13.2) issued by the Commonwealth of Virginia are forms incorporated in these General Conditions by reference and are made a part hereof to the same extent as though fully set forth herein. They must be used by the Contractor for their respective purposes.
- (b) All time limits stated in the Contract Documents, including but not limited to the Time for Completion of the Work, are of the essence of the Contract.
- (c) The Contract Between Owner and Contractor shall be signed by the Owner and the Contractor in as many original counterparts as may be mutually agreed upon, each of which shall be considered an original.
- (d) Anything called for by one of the Contract Documents and not called for by the others shall be of like effect as if required or called for by all, except that a provision clearly designed to negate or alter a provision contained in one or more of the other Contract Documents shall have the intended effect. In the event of conflicts among the Contract Documents, the Contract Documents shall take precedence in the following order: the Contract between Owner and Contractor; the Supplemental General Conditions; the General Conditions; the Special Conditions; the specifications with attachments; and the plans.
- (e) If any provision of this Contract shall be held invalid by any court of competent jurisdiction, such holding shall not invalidate any other provision.
- (f) All correspondence, invoices, memoranda, submittals and other documents related to this Project whether generated by the Owner, the A/E, the Contractor or others should be identified at the beginning of the document with the eleven digit (XXX-XXXXX-XXX) Project Code Number. Additional identification such as a job number, purchase order number or such may also be shown at the generator's option.

3. LAWS AND REGULATIONS

- (a) The Contractor shall comply with all laws, ordinances, rules, regulations and lawful orders of any public authority bearing on the performance of the Work and shall give all notices required thereby. The Contractor shall assure that all Subcontractors and tradesmen who perform Work on the project are properly licensed by the Department of Professional and Occupational Regulation as required by Title 54.1, Chapter 11, Articles 1 and 3 and by applicable regulations.
- (b) This Contract and all other contracts and subcontracts are subject to the provisions of Articles 3 and 5, Chapter 4, Title 40.1, *Code of Virginia*, relating to labor unions and the "right to work." The Contractor and its Subcontractors, whether residents or nonresidents of the Commonwealth, who perform any Work related to the Project shall comply with all of the said provisions.
- (c) IMMIGRATION REFORM AND CONTROL ACT OF 1986: By signing this Contract, the Contractor certifies that it does not and will not during the performance of this Contract violate the provisions of the Federal Immigration Reform and Control Act of 1986, which prohibits employment of illegal aliens.
- (d) E-VERIFY PROGRAM: Pursuant to *Code of Virginia*, § 2.2-4308.2, any employer with more than an average of 50 employees for the previous 12 months entering into a contract in excess of

\$50,000 with any agency of the Commonwealth to perform work or provide services pursuant to such contract shall register and participate in the E-Verify program to verify information and work authorization of its newly hired employees performing work pursuant to such public contract. Any such employer who fails to comply with these provisions may be debarred from contracting with any agency of the Commonwealth for a period up to one year. Such debarment may cease upon the employer's registration and participation in the E-Verify program. If requested, the employer shall present a copy of their Maintain Company page from E-Verify to prove that they are enrolled in E-Verify.

- (e) The provisions of all rules and regulations governing safety as adopted by the Safety Codes Commission of the Commonwealth of Virginia and as issued by the Department of Labor and Industry under Title 40.1 of the *Code of Virginia* shall apply to all Work under this Contract. Inspectors from the Department of Labor and Industry shall be granted access to the Work for inspection without first obtaining a search or administrative warrant.
- (f) Building Permit: Because this Project is on Commonwealth of Virginia property, codes or zoning ordinances of local political subdivisions do not apply to Work on the property. The Virginia Uniform Statewide Building Code applies to the Work and is administered by the Building Official for State-owned Buildings. The Building Permit will be obtained and paid for by the Owner. All other permits, local license fees, business fees, taxes, or similar assessments imposed by the appropriate political subdivision and the Department of Environmental Quality shall be obtained and paid for by the Contractor. See Section 25 for utility connection fees and services.
- (g) The Contractor shall include in each of its subcontracts a provision requiring each Subcontractor to include or otherwise be subject to the same payment and interest requirements in Subsections (a), (b), and (c) of Section 37 of these General Conditions with respect to each lower-tier Subcontractor and Supplier.
- (h) The Contractor, if not licensed as an asbestos abatement contractor in accordance with § 54.1-514, *Code of Virginia*, shall have all asbestos-related Work performed by subcontractors who are duly licensed as asbestos contractors for the Work required.
- (i) Lead Based Paint Activities: If the Contract Documents indicate that lead based paint is present on existing materials, components, or surfaces, the Contractor shall conform to the following:
 - (1) The requirements set forth in 59 Federal Register 45,872 (September 2, 1994) Proposed Rule) - Lead; Requirements for Lead based Paint Activities (Proposed Rules) in selecting and performing the means, methods and procedures for performing the Work. This includes, but is not limited to, training of personnel, lead abatement, encapsulation of lead containing materials, removal and handling of lead containing materials, and methods of disposal. When the Final Rule, to be codified at 40 CFR 745, supersedes the Proposed Rule, the Contractor shall be responsible for conforming to the Final Rule, as of the effective date set forth therein.
 - (2) The requirements for employee protection contained in 29 CFR Part 1926, Subpart D, and the requirements for record-keeping contained 29 CFR Part 1910.
 - (3) The Virginia Department of Labor and Industry's (DLI) Emergency Regulation published in the May 27, 1996 Virginia Register, requiring, among other things, that a permit be issued to the lead abatement contractor, or any subsequent regulation issued by DLI.
- (j) If the Contractor violates laws or regulations that govern the Project, the Contractor shall take prompt action to correct or abate such violation and shall indemnify and hold the Owner harmless against any fines, and/or penalties that result from such violation. To the extent that such violation is the result of negligence or other actionable conduct of the Contractor, the Contractor shall

indemnify and hold the Owner harmless against any third party claims, suits, awards, actions, causes of action or judgments, including but not limited to attorney's fees and costs incurred thereunder, that arise or result from such violation.

- (k) If the Work includes any land disturbing activities, the Contractor shall have on-site an individual certified by the Department of Environmental Quality as a Responsible Land Disturber in accordance with § 10.1-563, *Code of Virginia*.
- (l) The Contractor is neither required nor prohibited from entering into or adhering to agreements with one or more labor organizations, or otherwise discriminating against subcontractors for becoming or refusing to become, or remaining signatories to or otherwise adhering to, agreements with one or more labor organizations. This section does not prohibit contractors or subcontractors from voluntarily entering into agreements with one or more labor organizations. Both the agency and contractor are entitled to injunctive relief to prevent any violation of this section.

This section does not apply to any public-private agreement for any construction in which the private body, as a condition of its investment or partnership with the state agency, requires that the private body have the right to control its labor relations policy and perform all work associated with such investment or partnership in compliance with all collective bargaining agreements to which the private party is a signatory and is thus legally bound with its own employees and the employees of its contractors and subcontractors in any manner permitted by the National Labor Relations Act, 29 U.S.C. § 151 et seq., or the Railway Labor Act, 45 U.S.C. § 151 et seq.

This section does not prohibit an employer or any other person covered by the National Labor Relations Act or the Railway Labor Act from entering into agreements or engaging in any other activity protected by law.

This section shall not be interpreted to interfere with the labor relations of persons covered by the National Labor Relations Act or the Railway Labor Act.

4. NONDISCRIMINATION

- (a) § 2.2-4311 of the *Code of Virginia* shall be applicable. It provides as follows:
 - 1. During the performance of this Contract, the Contractor agrees as follows:
 - a. The Contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, disability, or other basis prohibited by state law relating to discrimination in employment, except where there is a bona fide occupational qualification reasonably necessary to the normal operation of the contractor. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.
 - b. The Contractor, in all solicitations or advertisements for employees placed by or on behalf of the contractor, will state that such Contractor is an equal opportunity employer.
 - c. Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting the requirements of this section.
 - 2. The Contractor will include the provisions of the foregoing paragraphs a, b and c in every subcontract or purchase order of over \$10,000, so that the provisions will be binding upon each subcontractor or vendor.”

- (b) Where applicable, the Virginians with Disabilities Act and the federal Americans with Disabilities Act shall apply to the Contractor and all Subcontractors.

5. PROHIBITION OF ALCOHOL AND OTHER DRUGS

- (a) § 2.2-4312 of the *Code of Virginia* shall be applicable. It provides as follows:
“During the performance of this contract, the contractor agrees to (i) provide a drug-free workplace for the contractor's employees; (ii) post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana is prohibited in the contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition; (iii) state in all solicitations or advertisements for employees placed by or on behalf of the contractor that the contractor maintains a drug-free workplace; and (iv) include the provisions of the foregoing clauses in every subcontract or purchase order of over \$10,000, so that the provisions will be binding upon each subcontractor or vendor. For the purposes of this section, "drug-free workplace" means a site for the performance of work done in connection with a specific contract awarded to a contractor in accordance with this chapter, the employees of whom are prohibited from engaging in the unlawful manufacture, sale, distribution, dispensation, possession or use of any controlled substance or marijuana during the performance of the contract.”
- (b) The Contractor shall also establish, maintain and enforce policies which prohibit the following acts by all Contractor, Subcontractor and Supplier personnel at the Site:
 - (1) The manufacture, distribution, dispensation, possession, or use of alcohol, marijuana or other drugs, except possession and medically prescribed use of prescription drugs; and
 - (2) The impairment of judgment or physical abilities due to the use of alcohol, marijuana or other drugs, including impairment from prescription drugs.

6. TIME FOR COMPLETION

- (a) The Time for Completion shall be designated by the Owner on the Invitation for Bids, Request for Proposals, or other prebid/proposal documents. In some instances, the Time for Completion may be stated on the Invitation for Bids, Request for Proposals, or other prebid/pre-proposal document in the form of a Contract Completion Date. The Work must be substantially completed by the Time for Completion or the Contract Completion Date. Unless otherwise specified, the Contractor shall achieve Final Completion within thirty (30) days after the date of Substantial Completion.
- (b) The Time for Completion shall be stated in the Contract between Owner and Contractor and shall become a binding part of the Contract upon which the Owner may rely in planning the use of the facilities to be constructed and for all other purposes. If the Contractor fails to substantially complete the Work within the Time for Completion or Contract Completion Date, as set forth in the Contract, he shall be subject to payment of actual damages incurred by the Owner or liquidated damages, if provided for in the Contract.
- (c) The Contractor, in submitting his bid or proposal, acknowledges that he has taken into consideration normal weather conditions. Normal weather does not mean statistically average weather, but rather means a range of weather patterns which might be anticipated based on weather data for the past ten (10) years, (i.e., conditions which are not extremely unusual). Normal weather conditions shall be determined from the public historical records available, including the U.S. Department of Commerce, Local Climatological Data Sheets, National Oceanic and Atmospheric Administration / Environmental Data and Information Service, National Climatic Center and National Weather Service. The data sheets to be used shall be those for the locality or localities closest to the site of the work. No additional compensation will be paid to the Contractor because of adverse weather conditions; however, an extension of time for abnormal weather will

be considered by the Owner under the following conditions, all of which must be strictly complied with by the contractor:

- (1) The request for additional time shall be further substantiated by weather data collected during the period of delay at the Site. Said data must demonstrate that an actual departure from normal weather occurred at the Site during the dates in question.
 - (2) The extension requested must be supported by a delay in completion of the entire Project shown on the critical path of the accepted CPM Schedule or the approved bar graph schedule required for the Project. Extensions will be granted only for delays in completion of the Project, not for that portion of any delay which consumes only "float" time.
 - (3) A request for extension of time based on abnormal weather must be made in writing within fourteen (14) calendar days of the completion of the calendar month during which abnormal weather is claimed at the Site.
 - (4) All of the evidence and data supporting the request (including both historical data and the recordings at the Site during the time of delay) must be furnished to the Owner before any consideration will be given to the request. That supporting data shall be submitted by the end of the calendar month following the month for which the request is made.
- (d) The failure by the Contractor to comply with any and all of the conditions in (c) above shall constitute a waiver of claims for the extension of time for abnormal weather.
- (e) The Contractor represents and agrees that he has taken into account in his bid the requirements of the bid documents, the Contract Documents, local conditions, availability of materials, equipment, and labor, and any other factors which may affect the performance of the Work. The Contractor agrees and warrants that he will achieve Substantial Completion of the Work to allow the Owner to have Beneficial Occupancy not later than the Time for Completion or Contract Completion Date. The Contractor agrees and warrants that he will achieve Final Completion of the Work (the entire completion of all Work, including "punch list" items), not later than thirty (30) days after achieving Substantial Completion.

7. CONDITIONS AT SITE

- (a) The Contractor shall have visited the Site prior to bidding or submitting its proposal and is totally responsible for having ascertained pertinent local conditions such as location, accessibility and general character of the Site, and the character and extent of existing conditions, improvements and work within or adjacent to the Site. Claims, which result from the Contractor's failure to do so, will be deemed waived.
- (b) If, in the performance of the Contract, hidden physical conditions of a building being modified are exposed revealing unusual or materially different conditions from those ordinarily encountered or inherent in work of this nature, or if subsurface or latent conditions at the Site are found which are materially different from those frequently present in the locality or from those indicated in the Contract Documents, the Contractor must report such conditions to the Owner and to the Architect/Engineer before the conditions are disturbed. Upon such notice, or upon his own observation of such conditions, the Architect/Engineer shall promptly propose such changes in the Contract Documents as he finds necessary to conform to the different conditions. Any change in the cost of the Work or additional time needed for completion must be requested pursuant to Sections 38, 39 and/or 43 of these General Conditions.
- (c) If the Contractor, during the course of the Work, observes the existence of any material which he knows, should know, or has reason to believe is hazardous to human health, the Contractor shall

promptly notify the Owner. The Owner will provide the Contractor with instructions regarding the disposition of the material. The Contractor shall not perform any Work involving the material or any Work causing the material to be less accessible prior to receipt of special instructions from the Owner.

8. CONTRACT SECURITY

- (a) For contracts with a value exceeding five hundred thousand dollars (\$500,000), the Contractor shall deliver to the Owner or its designated representative, a Commonwealth of Virginia Standard Performance Bond, DGS-30-084 (Form CO-10) and a Commonwealth of Virginia Standard Labor and Material Payment Bond, DGS-30-088 (Form CO-10.1) each fully executed by the Contractor and one or more surety companies legally licensed to do business in Virginia and each in an amount equal to one hundred percent (100%) of the accepted bid or proposal. If more than one Surety executes a bond, each shall be jointly and severally liable to the Owner for the entire amount of the bond. Sureties shall be selected by the Contractor, subject to approval by the Owner. No payment on the Contract shall be due and payable to the Contractor until the bonds have been approved by the Owner and the Office of the Attorney General of Virginia. In order to facilitate review of the bonds by the Office of the Attorney General, the power of attorney from the surety company to its agent who executes the bond shall be attached to the bond, or, if not so attached, prior to the execution of the bonds by the surety, recorded in the Office of the Clerk of Court for the City of Richmond, Virginia, at the John Marshall Court Building, 400 North Ninth Street, except when the Owner is one of the following, in which case the power of attorney must be recorded with the Clerk of Court in the place shown:

<u>OWNER</u>	<u>PLACE OF RECORDATION</u>
University of Virginia	City of Charlottesville
Old Dominion University	City of Norfolk
Norfolk State University	City of Norfolk
Christopher Newport University	City of Newport News
Virginia Polytechnic Institute and State University	County of Montgomery

- (b) For the purposes of all Standard Labor and Material Payment Bonds entered into, the term "subcontractors" as used in § 2.2-4337(A)(2) of the *Code of Virginia* is interpreted to mean any contractors who participated in the prosecution of the Work undertaken by the Contractor (referred to in § 2.2-4337(A)(2) of the *Code of Virginia* as the "prime contractor"), whether such contractor had a direct contract with the Contractor (prime contractor) or whether there were one or more other intervening Subcontractors contractually positioned between it and the Contractor (prime contractor).
- (c) See § 2.2-4338 of the *Code of Virginia*, for alternative forms of security for payment and/or performance bonds.
- (d) For contracts with a value of less than five hundred thousand dollars (\$500,000), the Contractor will not be required to provide a Standard Performance Bond and a Standard Labor and Material Payment Bond as described above unless the Invitation for Bid or Request for Proposal states that such bonds will be required.

9. SUBCONTRACTS

- (a) The Contractor shall, as soon as practicable after the signing of the Contract, notify the Owner and Architect/Engineer in writing of the names of all Subcontractors proposed for the principal parts of the Work and of such others as the Architect/Engineer may direct. Where the specifications establish qualifications or criteria for Subcontractors, manufacturers, or individuals performing Work on the Project, the Contractor shall be responsible for ascertaining that those proposed meet the criteria or qualifications. The Contractor shall not employ any Subcontractor that the Owner may, within a reasonable time, object to as unsuitable. Neither the Owner nor the Architect/Engineer shall direct the Contractor to contract with any particular Subcontractor unless provided in the specifications or Invitation for Bids or Request for Proposal.
- (b) The Owner may select a particular Subcontractor for a certain part of the Work and designate on the Invitation for Bids or Request for Proposal that the Subcontractor shall be used for the part of the Work indicated and that the Subcontractor has agreed to perform the Work for the subcontract amount stipulated on the bid or Proposal form. The Contractor shall include the stipulated amount plus his Contractor markups in the bid or Proposal. In such case, the Contractor shall be responsible for that Subcontractor and its work and the Subcontractor shall be responsible to the Contractor for its work just as if the Contractor had selected the Subcontractor. If the Contractor has a reasonable objection to the Subcontractor being assigned, then the Contractor shall note the exception in his bid or proposal and the reason for the exception and maintain appropriate provisions for coordinating the work of the Subcontractor. The Owner, at its sole discretion, may accept the Contractor's bid or proposal with the exception noted and contract separately with the Subcontractor under the provisions Section 10 of the contract or assign a different Subcontractor.
- (c) The Owner shall, on request, furnish to any Subcontractor, if practicable, the amounts of payments made to the Contractor, the Schedule of Values and Requests for Payment submitted by the Contractor and any other documentation submitted by the Contractor which would tend to show what amounts are due and payable by the Contractor to the Subcontractor.
- (d) The Contractor shall be fully responsible to the Owner for all acts and omissions of his agents and employees and all succeeding tiers of Subcontractors and Suppliers performing or furnishing any of the Work. Nothing in the Contract Documents shall create any contractual relationship between Owner or Architect/Engineer and any such Subcontractor, Supplier or other person or organization, nor shall it create any obligation on the part of Owner or Architect/Engineer to pay for or to see to the payment of any moneys due any such Subcontractor, Supplier or other person or organization, except as may otherwise be required by law.
- (e) The Contractor shall be fully responsible for his invitees at the Site and for those of his Subcontractors, Suppliers, and their employees, including any acts or omissions of such invitees.
- (f) The Contractor agrees that he alone is responsible for all dealings with his Subcontractors and Suppliers, and their subcontractors, employees and invitees, including, but not limited to, the Subcontractors' or Suppliers' claims, demands, actions, disputes and similar matters unless specifically provided otherwise by the Contract or by statute.

10. SEPARATE CONTRACTS

- (a) The Owner reserves the right to let other contracts in connection with the Project, the Work under which may proceed simultaneously with the execution of this Contract. The Contractor shall afford other separate contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work. The Contractor shall cooperate with them and shall take all reasonable action to coordinate his Work with theirs. If the Owner has listed other separate contracts in the Invitation for Bids or Requests for Proposal which it expects to proceed simultaneously with the Work of the Contractor, and has included the estimated timing of such

other Contracts in the Invitation for Bids or Requests for Proposal, the Contractor shall integrate the schedule of those separate contracts into his scheduling. The Contractor shall make every reasonable effort to assist the Owner in maintaining the schedule for all separate contracts. If the work performed by the separate contractor is defective or performed so as to prevent or threaten to prevent the Contractor from carrying out his Work according to the Contract, the Contractor shall immediately notify the Owner and the Architect/Engineer upon discovering such conditions.

- (b) If a dispute arises between the Contractor and any separate contractor(s) as to their responsibility for cleaning up as required by Sections 31 (c) and 31 (d) of these General Conditions, the Owner may clean up and charge the cost thereof to the respective contractors in proportion to their responsibility. If a Contractor disputes the Owner's apportionment of clean-up costs, it shall be that contractor's burden to demonstrate and prove the correct apportionment.

11. CONTRACTOR'S AND SUBCONTRACTOR'S INSURANCE

- (a) The Contractor shall not commence Work under this Contract until he has obtained all the insurance required hereunder from an insurer authorized to do business in Virginia and such insurance has been approved by the Owner; nor shall the Contractor allow any Subcontractor to commence Work on his subcontract until the same types of insurance in an appropriate amount have been obtained by the Subcontractor and approved by the Contractor. Approval of insurance by the Owner shall not relieve or decrease the liability of the Contractor hereunder.
- (b) The Contractor shall take out, and shall maintain in force at all times during the performance of the Work, Workers' Compensation and Employers' Liability Insurance for all of his employees engaged in the Work in an amount not less than the minimum required by § 2.2-4332 and § 65.2-100 et seq. of the *Code of Virginia*. In case any of the Work is sublet, the Contractor shall require each Subcontractor similarly to provide Workers' Compensation and Employers' Liability Insurance for all of the latter's employees to be engaged in the Work. Prior to award of the Contract, the Contractor shall submit, on the form provided by the Owner, a Certificate of Coverage verifying Workers' Compensation. The Contractor shall likewise obtain a Certificate of Coverage for Workers' Compensation coverage from each subcontractor prior to awarding the subcontract and shall provide a copy to the Owner.
- (c) During the performance of the Work under this Contract, the Contractor shall maintain commercial general liability insurance to include Premises / Operations Liability, Products and Completed Operations Coverage, Independent Contractor's Liability, Owner's and Contractor's Protective Liability, and Personal Injury Liability, which shall insure him against claims of personal injury, including death, as well as against claims for property damage, which may arise from operations under this Contract, whether such operations be by himself or by any Subcontractor, or by anyone directly or indirectly employed by either of them. The amounts of general liability insurance shall be not less than **\$1,000,000** per occurrence and **\$2,000,000** aggregate combined limit. The Commonwealth of Virginia, its officers, employees and agents, shall be named as an additional insured with respect to the Work being procured. The Supplemental General Conditions may require the Contractor to provide an Umbrella insurance policy in a specified amount for the Project.
- (d) During the performance of the Work under this Contract, the Contractor shall maintain automobile liability insurance which shall insure him against claims of personal injury, including death, as well as against claims for property damage, which may arise from operations under this Contract, whether such operations be by himself or by any Subcontractor, or by anyone directly or indirectly employed by either of them. The amounts of automobile insurance shall be not less than **\$1,000,000** combined limit for bodily injury and property damage per occurrence.
- (e) The Asbestos Contractor or Subcontractor, as the case may be, shall provide occurrence-based liability insurance with asbestos coverages in an amount not less than **\$1,000,000** and shall name

the following as additional insureds: The Commonwealth of Virginia, its officers, its employees and its agents; the Architect/Engineer (if not the Asbestos Project Designer); and the Contractor (where the asbestos work is being performed by the Asbestos Subcontractor).

12. "ALL RISK" BUILDER'S RISK INSURANCE

- (a) **Contractor Controlled During Construction:** The Contractor, at his cost, shall obtain and maintain in the names of the Owner and the Contractor "all-risk" builder's risk insurance (or fire, extended coverage, vandalism and malicious mischief insurance, if approved by the Owner and the Director, Division of Engineering and Buildings) upon the entire structure or structures on which the Work of this Contract is to be done and upon all material in or adjacent thereto which is intended for use thereon, to one hundred percent (100%) of the insurable value thereof (i.e. construction costs, soft costs, FF&E, and the residual value of the existing structure to remain). Such insurance may include a deductible provision if the Owner so provides in the Supplemental General Conditions, in which case the Contractor will be liable for such deductions, whenever a claim arises. The loss, if any, is to be made adjustable with and payable to the Owner, in accordance with its interests, as they may appear. The Owner, its officers, employees and its agents, shall be named as an additional insured in any policy of insurance issued. Written evidence of the insurance shall be filed with the Owner no later than thirty (30) days following the award of the Contract. In the event of cancellation of this insurance, not less than thirty (30) days prior written notice must be sent to the Owner. A copy of the policy of insurance shall be given to the Owner upon demand.
- (b) **Owner Controlled During Construction:** The Owner maintains insurance coverage on its buildings. On re-roofing, renovation, and interior modifications of existing building projects where the Owner continues to occupy the building, or a portion thereof, while the Work is being performed, the Contractor shall provide "all risk" builders risk insurance, as described above, in an amount equal to one hundred percent (100%) of the cost of the Work (i.e. construction costs, soft costs, and FF&E costs). In those instances, the Contract between the Owner and Contractor for the project shall expressly exclude the project from the requirements of Subsection 12(a). The Contractor is responsible for providing any desired coverage for Contractor's or Subcontractors' buildings, equipment, materials, tools or supplies that are on-site.
- (c) The value of the builder's risk insurance shall exclude the costs of excavations, backfills, foundations, underground utilities and sitework.
- (d) Any insurance provided through the Department of Treasury, Division of Risk Management, on buildings, construction, additions or renovations will not extend to Contractor's nor Subcontractors' buildings, equipment, materials, tools or supplies unless these items are to become property of the Owner upon completion of the Project and the Owner has assumed responsibility for such items at the time of the loss.

13. TAXES, FEES AND ASSESSMENTS

The Contractor shall, without additional expense to the Owner, pay all applicable federal, state, and local taxes, fees, and assessments except the taxes, fees and assessments on the real property comprising the Site of the project. If the State Building Official elects to have the local building official inspect the Work as provided by § 36-98.1 of the *Code of Virginia*, the Owner shall pay the resulting fees to the local building official.

14. PATENTS

The Contractor shall obtain all licenses necessary to use any invention, article, appliance, process or technique of whatever kind and shall pay all royalties and license fees. The Contractor shall hold the Owner, its officers, agents and employees, harmless against any loss or liability for or on account of the

infringement of any patent rights in connection with any invention, process, technique, article or appliance manufactured or used in the performance of the Contract, including its use by the Owner, unless such invention, process, technique, article or appliance is specifically named in the specifications or plans as acceptable for use in carrying out the Work. If, before using any invention, process, technique, article or appliance specifically named in the specifications or plans as acceptable for use in carrying out the Work, the Contractor has or acquires information that the same is covered by letters of patent making it necessary to secure the permission of the patentee, or other, for the use of the same, he shall promptly advise the Owner and the Architect/Engineer. The Owner may direct that some other invention, process, technique, article or appliance be used. Should the Contractor have reason to believe that the invention, process, technique, article or appliance so specified is an infringement of a patent, and fail to inform the Owner and the Architect/Engineer, he shall be responsible for any loss or liability due to the infringement.

15. ARCHITECT/ENGINEER'S STATUS

- (a) The Architect/Engineer shall have authority to endeavor to secure the faithful performance by Owner and Contractor of the Work under the Contract. He shall review the Contractor's Submittals for conformance to the requirements of the Contract Documents and return copies to the Contractor with appropriate notations. He shall interpret the requirements of the plans and specifications and issue Field Orders to the Contractor as may be required. He shall recommend to the Owner suspension of the Work (in whole or in part) whenever such suspension may be necessary to ensure the proper execution of the Contract. He shall have authority to reject, in writing, Work, including material, installation or workmanship, which does not conform to the requirements of the plans and specifications. He shall determine the progress and quality of the Work, subject to the right of the Owner to make an overriding decision to the contrary. Upon request by the Contractor, the Architect/Engineer shall confirm, in writing within fourteen (14) days, any oral order or determination made by him.
- (b) The Architect/Engineer shall have no authority to approve or order changes in the Work which alter the design concept or which call for an extension of time or a change in the Contract Price.
- (c) Although the Owner is bound by the terms of the Contract with the Contractor, including the plans and specifications, the Owner shall have the right, but not the duty, to countermand any decision of the Architect/Engineer and to follow or reject the advice of the Architect/Engineer, including but not limited to acceptance of the Work, as it deems best. In those instances where the Architect/Engineer has been given authority to act, the Architect/Engineer shall promptly do so, but in the case of disagreement between the Architect/Engineer and the Owner, the decision of the Owner shall be final. The Contractor shall not be bound by any determination, interpretation or decision of the Architect/Engineer, if it is later determined that the same is not in accord with the Contract Documents. The party taking issue with the determination, interpretation or decision of the Architect/Engineer shall give the other party written notice of such fact within fourteen (14) days after the determination, interpretation or decision is communicated by the Architect/Engineer. In the actual performance of the Work, however, the Contractor shall, in the first instance, proceed in accordance with instructions given by the Architect/Engineer unless the Owner and the Contractor mutually agree that the Contractor shall proceed otherwise.
- (d) All orders from the Owner to the Contractor shall either be transmitted through the Architect/Engineer or communicated directly to the Contractor and the Architect/Engineer by the Owner.
- (e) Should the Owner choose to employ another or different Architect/Engineer, the status of the Architect/Engineer so employed shall be the same as that of the former Architect/Engineer.
- (f) The Architect/Engineer will provide to the Owner and the Contractor after each visit to the Site, a written report indicating the date, time of day, weather conditions and the names of the persons representing the Architect/Engineer who participated in the visit. The report will advise the Owner

of any problems that were noted and shall compare the Architect/Engineer's observations of the actual progress of the Work with that reported by the Contractor. On the basis of his on-Site observations as Architect/Engineer, he will make every reasonable effort to guard the Owner against defects and deficiencies in the Work of the Contractor. He shall have the authority to inspect the Work, to note and report Defective Work and deviations from the Contract Documents to the Owner, to reject same, and to recommend to the Owner the suspension of the Work when necessary to prevent Defective Work from proceeding or being covered.

- (g) The Architect/Engineer shall not be responsible for construction means, methods, techniques, sequences or procedures (other than those expressly specified in Contract Documents), or for safety precautions and programs in connection with the Work, and he shall not be responsible for the Contractor's failure to carry out the Contractor's own responsibilities.
- (h) The Architect/Engineer generally conveys written decisions and notices to the Contractor through the Project Manager and shall generally receive information and Notices from the Contractor through the Project Manager unless otherwise agreed. The Owner may delegate from the Architect/Engineer to the Project Manager certain inspection, verification, acceptance, rejection, and administrative duties and authority, but any such delegation shall be in writing and a copy thereof provided to the Contractor.
- (i) The provisions of this section are included as information only to describe the relationship between the Owner, A/E, and Contractor. No failure of the A/E to act in accordance with this section shall relieve the Contractor from his obligations under the Contract or create any rights in favor of the Contractor.

16. INSPECTION

- (a) All material and workmanship shall be subject to inspection, examination and testing by the Owner, the Architect/Engineer, the Project Inspector, authorized inspectors and authorized independent testing entities at any and all times during manufacture and/or construction. The Architect/Engineer and the Owner shall have authority to reject defective material and workmanship and require its correction. Rejected workmanship shall be satisfactorily corrected and rejected material shall be satisfactorily replaced with proper material without charge therefor, and the Contractor shall promptly segregate and remove the rejected material from the Site. If the Contractor fails to proceed at once with replacement of rejected material and/or the correction of defective workmanship, the Owner may, by contract or otherwise, replace such material and/or correct such workmanship and charge the cost to the Contractor, or may terminate the right of the Contractor to proceed as provided in Section 41 of these General Conditions, the Contractor and surety being liable for any damage to the same extent as provided in Section 41 for termination thereunder.
- (b) Site inspections, tests conducted on Site or tests of materials gathered on Site, which the Contract requires to be performed by independent testing entities, shall be contracted and paid for by the Owner. Examples of such tests are the testing of cast-in-place concrete, foundation materials, soil compaction, pile installations, caisson bearings and steel framing connections. The Contractor shall promptly furnish, without additional charge, all reasonable facilities, labor and materials necessary and convenient for making such tests. Except as provided in (d) below, whenever such examination and testing finds defective materials, equipment or workmanship, the Contractor shall reimburse the Owner for the cost of reexamination and retesting. Although conducted by independent testing entities, the Owner will not contract and pay for tests or certifications of materials, manufactured products or assemblies which the Contract, codes, standards, etc., require to be tested and/or certified for compliance with industry standards such as Underwriters Laboratories, Factory Mutual or ASTM. If fees are charged for such tests and certifications, they shall be paid by the Contractor. The Contractor shall also pay for all inspections, tests, and certifications which the Contract specifically requires him to perform or to pay, together with any

inspections and tests which he chooses to perform for his own purposes, but are not required by the Contract.

- (c) Where Work is related to or dependent on the Defective Work, the Contractor shall stop such related or dependent Work until the Defective Work or deficiency is corrected or an alternative solution is presented that is satisfactory to the Owner. Where Work is rejected because of defective material or workmanship, the Contractor shall stop like Work in other areas or locations on the Project until the matter is resolved and the Owner has approved corrective measures.
- (d) Should it be considered necessary or advisable by Owner or the Architect/Engineer at any time before final acceptance of the entire Work to make an examination of any part of the Work already completed, by removing or tearing out portions of the Work, the Contractor shall on request promptly furnish all necessary facilities, labor and material to expose the Work to be tested to the extent required. If such Work is found to be defective in any respect, due to the fault of the Contractor or his Subcontractors, the Contractor shall bear all the expenses of uncovering the Work, of examination and testing, and of satisfactory reconstruction. If, however, such Work is found to meet the requirements of the Contract, the actual cost of the Contractor's labor and material necessarily involved in uncovering the Work, the cost of examination and testing, and Contractor's cost of material and labor necessary for replacement including a markup of fifteen (15%) percent for overhead and profit shall be paid to the Contractor and he shall, in addition, if completion of the Work has been delayed thereby, be granted a suitable extension of time. Notwithstanding the foregoing, the Contractor shall be responsible for all costs and expenses in removing and replacing the Work if the Contractor had covered the Work prior to any inspection or test contrary to the instructions of the A/E, Owner or Project Inspector.
- (e) The Project Inspector has the authority to recommend to the Architect/Engineer and the Owner that the Work be suspended when in his judgment the Contract Documents are not being followed. Any such suspension shall be continued only until the matter in question is resolved to the satisfaction of the Owner. The cost of any such Work stoppage shall be borne by the Contractor unless it is later determined that no fault existed in the Contractor's Work.
- (f) The Project Inspector has the right and the authority to:
 - (1) Inspect all construction materials, equipment, and supplies for quality and for compliance with the Contract Documents and/or approved shop drawings and Submittals.
 - (2) Inspect workmanship for compliance with the standards described in the Contract Documents.
 - (3) Observe and report on all tests and inspections performed by the Contractor.
 - (4) Recommend rejection of Work which does not conform to requirements of the Contract Documents.
 - (5) Keep a record of construction activities, tests, inspections, and reports.
 - (6) Attend all joint Site construction meetings and inspections held by the Owner and/or the A/E with the Contractor.
 - (7) Check materials and equipment, together with documentation related thereto, delivered for conformance with approved Submittals and the Contract.
 - (8) Check installations for proper workmanship and conformance with shop drawing and installation instructions.

- (9) Assist in the review and verification of the CO-12, Schedule of Values & Certificate for Payment, submitted by the Contractor each month.
- (10) Do all things for or on behalf of the Owner as the Owner may subsequently direct in writing.
- (g) The Project Inspector has no authority to:
 - (1) Authorize deviations from the Contract Documents;
 - (2) Enter into the area of responsibility of the Contractor's superintendent;
 - (3) Issue directions relative to any aspect of construction means, methods, techniques, sequences or procedures, or in regard to safety precautions and programs in connection with the Work;
 - (4) Authorize or suggest that the Owner occupy the Project, in whole or in part; or
 - (5) Issue a certificate for payment.
- (h) The duties of the Project Inspector are for the benefit of the Owner only and not for the Contractor. The Contractor may not rely upon any act, statement, or failure to act on the part of the Project Inspector, nor shall the failure of the Project Inspector to properly perform his duties in any way excuse Defective Work or otherwise improper performance of the Contract by the Contractor.

17. SUPERINTENDENCE BY CONTRACTOR

- (a) The Contractor shall have a competent foreman or superintendent, satisfactory to the Architect/Engineer and the Owner, on the Site at all times during the progress of the Work. The superintendent or foreman shall be familiar with and be able to read and understand the plans and specifications, and be capable of communicating orally and in writing with the Owner's inspectors and the Contractor's workers. The Contractor shall be responsible for all construction means, methods, techniques, sequences and procedures, for coordinating all portions of the Work under the Contract except where otherwise specified in the Contract Documents, and for all safety and worker health programs and practices. The Contractor shall notify the Owner, in writing, of any proposed change in superintendent, including the reason therefor, prior to making such change.
- (b) The Contractor shall, at all times, enforce strict discipline and good order among the workers on the Project, and shall not employ on the Work, or contract with, any unfit person, anyone not skilled in the Work assigned to him, or anyone who will not work in harmony with those employed by the Contractor, the Subcontractors, the Owner or the Owner's separate contractors and their subcontractors.
- (c) The Owner may, in writing, require the Contractor to remove from the Site any employee or Subcontractor's employee the Owner deems to be incompetent, careless, not working in harmony with others on the Site, or otherwise objectionable, but the Owner shall have no obligation to do so.

18. CONSTRUCTION SUPERVISION, METHODS AND PROCEDURES

- (a) The Contractor shall be solely responsible for supervising and directing the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract. The Contractor shall be solely responsible for the means, methods, techniques, sequences and procedures of construction and for coordinating all portions of the Work under the Contract, except where otherwise specified in the

Contract Documents. However, the Contractor shall not be responsible for the negligence of others in the design or selection of a specific means, method, technique, sequence or procedure of construction which is indicated in and required by the Contract. The Contractor is solely responsible to the Owner that the finished Work complies with the Contract Documents.

The Contractor shall be solely responsible for health and safety precautions and programs for workers and others in connection with the Work. No inspection by, knowledge on the part of, or acquiescence by the Architect or Engineer, the Project Inspector, the Owner, the Owner's employees and agents, or any other entity whatever shall relieve the Contractor from its sole responsibility for compliance with the requirements of the Contract or its sole responsibility for health and safety programs and precautions.

- (b) If a specific means, method, technique, sequence or procedure of construction is indicated in or required by the Contract Documents, the Contractor may furnish or utilize a substitute means, method, sequence, technique or procedure of construction acceptable to Architect/Engineer, subject to the Owner's right to disapprove. The Contractor must submit its written request for the substitution to the Architect/Engineer with sufficient information to allow the Architect/Engineer to determine that the substitute proposed is equivalent to that indicated or required by the Contract.
- (c) The divisions and sections of the Specifications and the identification of any drawings shall not control the Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

19. SCHEDULE OF THE WORK

- (a) **General:** The Contractor is responsible for the scheduling and sequencing of the Work, for coordinating the Work, for monitoring the progress of the Work, and for taking appropriate action to keep the Work on schedule. The Contractor may attempt to achieve Substantial Completion on or before the Time for Completion or the Contract Completion Date established by the Contract and receive payment in accordance with Section 36 for the Work completed each period. However, the date established by the Contract Documents as the deadline for achieving Substantial Completion must be used in all schedules as the date on which Substantial Completion will be achieved. The time (in days) between the Contractor's planned early completion and the contracted Time for Completion is part of the Project "Total Float" time and will be used as such. Extensions of time pursuant to Sections 38, 39, and 43, damages for delay, and all other matters between the Owner and the Contractor will be determined using the contractually required Substantial Completion date, not an early Substantial Completion date planned by the Contractor.

Within two (2) weeks after the Contractor signs the Contract Between Owner and Contractor, unless otherwise extended by the Owner at the time of the signing, the Contractor shall prepare and submit to the Owner, with a copy to the Architect/Engineer, a preliminary bar graph schedule for accomplishing the Work based upon the Time for Completion stated in the Contract. The preliminary schedule shall be in sufficient detail to show the sequencing of the various trades for each floor level, wing or work area. The Owner will notify the Contractor of its acceptance of or objections to the preliminary schedule within fifteen (15) days of receipt by the Owner. A fully complete Project schedule for accomplishing the Work must be submitted in like manner no later than sixty (60) days after the Contract is signed by the Owner.

The Owner's failure to reject or its acceptance of any schedule, graph, chart, recovery schedule, updated schedule, plan of action, etc. shall not constitute a representation or warranty by the Owner, including but not limited to a representation or warranty that the schedule is feasible or practical nor shall any such acceptance or failure to reject relieve the Contractor from sole responsibility for completing the Work within the time allowed.

No progress payments will be payable to the Contractor until after it has submitted a preliminary schedule which is acceptable to the Owner. Neither the second progress payment nor any subsequent payment shall be payable to the Contractor until it has submitted a fully complete Project schedule accepted by the Owner. Nor shall subsequent progress payments be payable to the Contractor unless and until he submits the monthly bar graphs or status reports required by Section 19(d) herein or unless and until he provides any recovery schedule pursuant to Section 19(e) herein.

Failure to provide a satisfactory preliminary or fully complete Project schedule within the time limits stated above shall be a breach of contract for which the Owner may terminate the Contract in the manner provided in Section 41 of these General Conditions.

The fully complete Project schedule for accomplishing the Work shall be of the type set forth in subparagraph (1) or (2) below, as appropriate:

- (1) For Contracts with a price of \$1,500,000 or less, a bar graph schedule will satisfy the above requirement. The schedule shall indicate the estimated starting and completion dates for each major element of the work. See (b) below.
- (2) For Contracts with a price over \$1,500,000, a Critical Path Method (CPM) schedule shall be utilized to control the planning and scheduling of the Work. The CPM schedule shall be the responsibility of the Contractor and shall be paid for by the Contractor. See (c) below.

- (b) **Bar Graph Schedule:** Where a bar graph schedule is required, it shall be time-scaled in weekly increments, shall indicate the estimated starting and completion dates for each major element of the Work by trade and by area, level, or zone, and shall schedule dates for all salient features, including but not limited to the placing of orders for materials, submission of shop drawings and other Submittals for approval, approval of shop drawings by Architect/Engineer, the manufacture and delivery of material, the testing and the installation of materials, supplies and equipment, and all Work activities to be performed by the Contractor.

The Contractor shall allow sufficient time in his schedule for the A/E to conduct whatever associated reviews or inspections as may be required under the A/E's contract with the Owner. If the A/E and the Contractor are unable to agree as to what constitutes sufficient time, the Owner shall determine the appropriate duration for such Architect/Engineer activities. Each Work activity will be assigned a time estimate by the Contractor. One day shall be the smallest time unit used.

It is the Contractor's responsibility to submit a schedule that shows Substantial Completion of the Work by the Contract Time for Completion or the Contract Completion Date and any interim deadlines established by the Contract.

- (c) **CPM Schedule:** Where a CPM schedule is required, it shall be in the time-scaled precedence format using the Contractor's logic and time estimates. The CPM schedule shall be drawn or plotted with activities grouped or zoned by Work area or subcontract as opposed to a random (or scattered) format.

The CPM schedule shall be time-scaled on a weekly basis and shall be drawn or plotted at a level of detail and logic which will schedule all salient features of the Work, including not only the actual construction Work for each trade, but also the submission of shop drawings and other Submittals for approval, approval of shop drawings by Architect/Engineer, placing of orders for materials, the manufacture and delivery of materials, the testing and installation of materials and equipment, and all Work activities to be performed by the Contractor. Failure to include any element of Work required for the performance of this Contract shall not excuse the Contractor

from completing all Work required within the Time for Completion, Contract Completion Date and any interim deadlines established by the Contract.

The Contractor shall allow sufficient time in his schedule for the A/E to conduct whatever associated reviews or inspections as may be required under the A/E's contract with the Owner. If the A/E and the Contractor are unable to agree as to what constitutes sufficient time, the Owner shall determine the appropriate duration for such Architect/Engineer activities. Each Work activity will be assigned a time estimate by the Contractor. One day shall be the smallest time unit used.

It is the Contractor's responsibility to submit a schedule that shows Substantial Completion of the Work by the Contract Time for Completion or the Contract Completion Date and any interim deadlines established by the Contract.

When completed, the CPM schedule shall be submitted to the Architect/Engineer and the Owner for review. The CPM schedule will identify and describe each activity, state the duration of each activity, the calendar dates for the early and late start and the early and late finish of each activity, and clearly highlight all activities on the critical path. "Total float" and "free float" shall be indicated for all activities. Float time, whether "free float" or "total float" as defined in Section 1, shall not be considered for the exclusive use or benefit of either the Owner or the Contractor, but must be allocated in the best interest of completing the Work within the Time for Completion or the Contract Completion Date. Extensions to the Time for Completion or the Contract Completion Date, when granted by Change Order, will be granted only when equitable time adjustment exceeds the Total Float in the activity or path of activities affected by the change provided that the Owner has reasonably provided information necessary to allow for the orderly progression of the Work. On contracts with a price over \$5,000,000, the CPM schedule shall also show what part of the Contract Price (expressed in U.S. dollars) is attributable to each activity on the schedule and shall be in agreement with the schedule of values, the sum of which for all activities shall equal the total Contract Price. The CPM schedule shall have no line-item activities longer than thirty (30) days in duration, and activities shall be included to provide sufficient detail for effectively managing the sequence of the Work. When acceptable to the Owner and Architect/Engineer as to compliance with the requirements of this Section, the schedule shall become the CPM schedule for the Project. Acceptance of the schedule by the Owner does not indicate agreement with, nor responsibility for the proposed or actual duration of any activity or logic shown on the accepted schedule.

- (d) **Monthly Project Reports:** The Contractor shall review progress not less than each month, but as often as necessary to properly manage the Project and stay on schedule. The Contractor shall collect and preserve information on Change Orders, including extensions of time. The Contractor shall evaluate this information and update the latest accepted schedule as often as necessary to finish within the Contract Time for Completion or before the Contract Completion Date. The Contractor shall submit to the A/E along with his monthly request for payment a copy of the bar graph schedule annotated to show the current progress. For projects requiring a CPM schedule, the Contractor shall submit a monthly report of the status of all activities. The bar graph schedule or monthly status report submitted with each periodic request for payment shall show the Work completed to date in comparison with the Work scheduled for completion, including but not limited to the dates for the beginning and completion of the placing of orders; the manufacture, testing and installation of materials, supplies and equipment. The form shall be approved by the A/E and the Owner; however, a bar graph or a CPM schedule marked, colored or annotated to reflect the above will usually satisfy this requirement. If any elements of the Work are behind schedule, regardless of whether they may prevent the Work from being completed on time, the Contractor must indicate in writing in the report what measures he is taking and plans to take to bring each such element back on schedule and to ensure that the Time for Completion or Contract Completion Date is not exceeded.

- (e) **Progress Delay:** Should any of the following conditions exist, the Owner may require the Contractor to prepare, at no extra cost to the Owner, a plan of action and a recovery schedule for completing the Work by the Contract Time for Completion or the Contract Completion Date:
- (1) The Contractor's monthly project report indicates delays that are, in the opinion of the A/E or the Owner, of sufficient magnitude that the Contractor's ability to complete the Work by the scheduled Time for Completion or the Contract Completion Date is brought into question;
 - (2) The CPM schedule sorted by early finish shows the Contractor to be thirty (30) or more days behind the critical path schedule at any time during construction up to thirty (30) days prior to scheduled Substantial Completion date;
 - (3) The Contractor desires to make changes in the logic (sequencing of Work) or the planned duration of future activities of the CPM schedule which, in the opinion of the Architect/Engineer or the Owner, are of a major nature.

The plan of action and recovery schedule, when required, shall explain and display how the Contractor intends to regain compliance with the current accepted, fully completed, Project CPM schedule, as updated by approved change orders.

The plan of action, when required, shall be submitted to the Owner for review within two (2) business days of the Contractor receiving the Owner's written demand. The recovery schedule, when required, shall be submitted to the Owner within five (5) calendar days of the Contractor's receiving the Owner's written demand.

- (f) **Early Completion of Project:** The Contractor may attempt to achieve Substantial Completion on or before the Time for Completion or the Contract Completion Date. However, such planned early completion shall be for the Contractor's convenience only and shall not create any additional rights of the Contractor or obligations of the Owner under this Contract, nor shall it change the Time for Completion or the Contract Completion Date. The Contractor shall not be required to pay damages to the Owner because of its failure to achieve Substantial Completion by its planned earlier date. Likewise, the Owner shall not pay the Contractor any additional compensation for achieving Substantial Completion early nor will the Owner owe the Contractor any compensation should the Owner, its officers, employees, or agents cause the Contractor not to achieve Substantial Completion earlier than the date required by the Contract Documents.

If the Contractor seeks to change the Time for Completion or the Contract Completion Date to reflect an earlier completion date, he may request or propose such a change. The Owner may, but is not required to, accept such proposal. However, a change in the Time for Completion or the Contract Completion Date shall be accomplished only by Change Order. If the Contractor's proposal to change the Time for Completion or the Contract Completion Date is accepted, a Change Order will be issued stating that all references in the Contract, including these General Conditions, to the Time for Completion or the Contract Completion Date shall thereafter refer to the date as modified, and all rights and obligations, including the Contractor's liability for actual damages, delay damages and/or liquidated damages, shall be determined in relation to the date, as modified.

20. SCHEDULE OF VALUES AND CERTIFICATE FOR PAYMENT

- (a) Before submittal of the first partial payment request under the Contract, the Contractor shall prepare for review and approval of the Architect/Engineer and the Owner, a schedule of the estimated values listed by trades or by specification sections of the Work, totaling the Contract Price. Where the total project has multiple parts or phases, the Contractor shall prepare appropriate schedules of values to facilitate reviews and justifications for payments.

All requests for payment shall be made in the ASTM Unifomat II structure on the Schedule of Values and Certificate for Payment (Form CO-12) pages 1 and 2. Succeeding pages may be on the Form CO-12 continuation sheets or a computerized spreadsheet which is in the same format and which contains the same information. Where a computerized spreadsheet is used, one copy of the entire Schedule of Values shall be provided to the Owner in an agreed electronic format (e.g. EXCEL) with the initial request for payment.

- (b) If the Contractor requests, or intends to request, payment for materials stored in an approved and secure manner, the Schedule of Values must indicate the amount for labor and the amount for materials, and in a supplement thereto must include an itemized list of materials for that trade or Work section. The material breakdown shall be in sufficient detail to allow verification of the quantities required for the Project, the quantities delivered, the Work completed, and the quantities stored on or off Site.
- (c) The "Value of Work Completed" portion of the Form CO-12 shall be completed, the Contractor's certification completed and signed, and the appropriate substantiating material attached to each Certificate for Payment (CO-12). Such substantiating material includes, but is not limited to, invoices for materials, delivery tickets, time sheets, payroll records, daily job logs/records, and similar materials which, in the opinion of the Owner and the A/E, are necessary or sufficient to justify payment of the amount requested.
- (d) The labor progress for any task or activity shall be calculated based upon the percentage of Work complete up to fifty percent (50%) of the completion of the task or activity. Thereafter, the evaluation of labor progress will be based upon the effort required to complete that task or activity. The material progress shall be calculated as the invoiced dollar cost of materials used in relationship to the amount estimated as necessary to complete a particular element of Work. When calculating material progress, credit shall be given for installed material as well as that stored on the Site and any material stored off Site which has been certified by the Architect/Engineer in accordance with Section 36 of these General Conditions.
- (e) Should Work included in previous Form CO-12 submittals, and for which payment has been made, subsequently be identified, by tests, inspection, or other means, as not acceptable or not conforming to Contract requirements, the "Value of Work Completed" portion of the first Form CO-12 submitted after such identification shall be modified to reduce the "completed" value of that Work by deleting the value of that which has been identified as not acceptable or nonconforming.

21. ACCESS TO WORK

The Architect/Engineer, the Owner, the Project Manager, the Owner's inspectors and other testing personnel, inspectors from the Department of Labor and Industry, and others authorized by the Owner, shall have access to the Work at all times. The Contractor shall provide proper facilities for access and inspection.

22. SURVEYS AND LAYOUT

- (a) The Owner shall furnish the Contractor all necessary documents showing property lines and the location of existing buildings and improvements. The Contractor shall provide competent surveying and engineering services to execute the Work in accordance with the Contract and shall be responsible for the accuracy of these surveying and engineering services.
- (b) The Owner shall provide such general reference points and benchmarks on the Site as will enable the Contractor to proceed with the Work will be established in the plans and specifications. If the

Contractor finds that any previously established reference points have been lost or destroyed, he shall promptly notify the Architect/Engineer.

- (c) The Contractor shall protect and preserve the established benchmarks and monuments and shall make no changes in locations without written notice to the Architect/Engineer and the written approval from the Owner. Any of these which may be lost or destroyed or which require shifting because of necessary changes in grades or locations shall, subject to prior written approval of the Owner, be replaced and accurately located by the Contractor.

23. PLANS AND SPECIFICATIONS

- (a) The general character and scope of the Work are illustrated by the plans and the specifications. If the Contractor deems additional detail or information to be needed, he shall request the same in writing from the Architect/Engineer. His request shall precisely state the detail or information needed and shall explain why it is needed. The Contractor shall also indicate a date when the requested information is required. The Architect/Engineer shall provide by Field Order such further detail and information as is necessary by the date required so long as the date indicated is reasonable. Any additional drawings and instructions supplied to the Contractor shall be consistent with the Contract Documents, shall be true developments thereof, and shall be so prepared that they can be reasonably interpreted as a part thereof. The Contractor shall carry out the Work in accordance with the additional detail drawings and instructions at no additional cost or time to the Owner.
- (b) If the Contractor finds a conflict, error, omission, or other discrepancy in the plans or specifications, he shall notify the Architect/Engineer in writing as soon as possible, but before proceeding with the affected Work. The Architect/Engineer shall issue a clarification by Field Order to the Contractor stating the correct requirements. If the Contractor deems the Field Order requires additional Work, he shall notify the A/E of such prior to proceeding with that Work and he shall submit a request for Change Order along with a detailed substantiating cost proposal through the A/E to the Owner within fourteen (14) calendar days. If such conflict, error, omission or other discrepancy in plans or specifications was reasonably apparent or with reasonable diligence should have been apparent to the Contractor prior to submitting its bid or Proposal, and the Contractor failed to submit questions to the A/E in the time and manner required by the Instructions to Bidders or Request for Proposal, then any claims shall be deemed waived and the Contractor shall not be entitled to additional compensation or time, or entitled to sue the Owner based on such conflict, error, omission or other discrepancy. If the Contractor performs any Work, or is delayed in performing any Work, where such Work involves a conflict, error, omission, or other discrepancy in the plans and specifications that the Contractor knew about, or with reasonable diligence should have known about, and fails to notify the A/E and Owner as required, the Contractor shall assume full responsibility for such performance or delay and shall bear all costs attributable to correcting any Work requiring correction or to any delay, and such conflict, error, omission, or other discrepancy shall not be the basis for a claim, cause of action or right to sue the Owner.
- (c) In case of differences between small and large scale drawings, the large scale drawings shall govern. Where on any of the drawings a portion of the Work is drawn out and the remainder is indicated in outline, the parts drawn out shall apply also to all other like portions of the Work.
- (d) Where the word "similar" appears on the drawings, it shall be interpreted in its general sense and not as meaning identical, and all details shall be worked out in relation to their location and their connection with other parts of the Work.
- (e) The specifications are divided into several parts, or sections, for convenience only, since the entire specifications must be considered as a whole. The divisions of the specifications are not intended to control the Contractor in dividing the Work among Subcontractors or to limit the Work

performed by any trade. The Contractor shall be solely responsible for the coordination of the trades, Subcontractors and vendors engaged in the Work and for the compensation of the trades, Subcontractors and vendors for the Work performed.

- (f) Measurements or dimensions shown on the drawings for Site features, utilities and structures shall be verified at the Site by the Contractor before commencing the Work. The Contractor shall not scale measurements or dimensions from the drawings. If there are discrepancies, the Architect/Engineer shall be consulted. If new Work is to connect to, match with or be provided in existing Work, the Contractor shall verify the actual existing conditions and necessary dimensions prior to ordering or fabrication.
- (g) **As-Built Drawings:** The Contractor shall maintain at the Site for the Owner one copy of all drawings, specifications, addenda, approved shop or setting drawings, Change Orders and other modifications (collectively referred to herein as "As-Built Drawings") in good order and marked to record all changes as they occur during construction. These shall be available to the Architect/Engineer, the Owner, the Project Inspector, the Owner's other inspectors and to the Owner's testing personnel. The drawings shall be neatly and clearly marked in color during construction to record all variations made during construction. The representation of such variations shall include such supplementary notes, symbols, legends, and details as may be necessary to clearly show the as-built construction.
- (h) **Record Drawings:** Upon completion of the Work and prior to the final inspection, the Contractor shall deliver to the Architect/Engineer, for preparation of the Record Drawings, one complete set of "As-Built Drawings" referred to in the preceding subsection.

24. SUBMITTALS

- (a) The Contractor shall submit a listing of all Submittals required by the Architect/Engineer or which the Contractor identifies as necessary, fixing the dates for the submission of shop or setting drawings, samples and product data. The listing shall be in a format acceptable to the Architect/Engineer. The Contractor shall identify all Submittals with the Owner's Project Code Number as required by Section 2(f).
- (b) Submittals shall be forwarded to the Architect/Engineer for approval if required by the specifications or if requested by the Architect/Engineer or the Owner. No part of the Work dealt with by a Submittal shall be ordered, fabricated or installed by the Contractor, save at his own risk, until such approval has been given.

Working drawings, shop drawings and/or submittals for fire protection, fire alarm, fire detection and security systems shall be submitted to, and approved by, the Building Official prior to ordering, fabricating or installing such systems. The Contractor shall be solely responsible for obtaining such approval. No part of the Work involving such systems shall be ordered, fabricated or installed by the Contractor until such approval has been obtained.

- (c) The Contractor shall furnish to the Architect/Engineer for approval the name of the manufacturer, the model number, and other identifying data and information respecting the performance, capacity, nature and rating of the machinery and mechanical and other equipment which the Contractor contemplates incorporating in the Work. When Submittals are required by this Contract for materials, the Contractor shall furnish full information concerning the material or articles which he contemplates incorporating in the Work. When required, samples shall be submitted for approval at the Contractor's expense, with all shipping charges prepaid. Machinery, equipment, material and articles installed or used without required approval shall be at the risk of subsequent rejection.

- (d) Unless otherwise indicated or required elsewhere in the specifications, shop drawings shall be submitted in the form of one reproducible tracing and three blue line or black line prints. Catalog cuts, product data and other non-reproducible literature, except certificates, shall be submitted in six (6) copies minimum, of which three (3) will be retained by the Architect/Engineer and the remainder will be returned to the Contractor. As is mutually agreeable to the Owner, Architect/Engineer, and Contractor, Submittals may be provided in electronic format in lieu of hardcopy format.
- (e) Submittals shall be accompanied by a letter of transmittal which shall list the Project Code Number, the Submittals included, the specification section number applicable to each, and the date shown on each Submittal. Submittals shall be complete in every respect and bound in sets. Each Submittal shall be clearly marked to show each item, component and/or optional feature proposed to be incorporated into the Project. Cross reference to the plans or specifications as needed to identify the use for which the item or component is intended.
- (f) The Contractor shall check the Submittals for compliance with the requirements of the Contract Documents. The Contractor shall clearly note in writing any and all items which deviate from the requirements of the Contract Documents. Reasons for deviation shall be included with the Submittal. The Contractor shall be solely responsible for checking all dimensions and coordinating all materials and trades to ensure that the components or products proposed, individually or in combination, will fit in the space available and that they will be compatible with other components or products provided.
- (g) After checking each submittal, the Contractor shall stamp each sheet of the Submittal with the Contractor's review stamp. Data submitted in a bound volume or on one sheet printed on two sides, may be stamped on the front of the first sheet only. The Contractor's review stamp shall be worded as follows:

The equipment and material shown and marked in this submittal is that proposed to be incorporated into this Project, is in compliance with the Contract drawings and specifications unless otherwise shown in bold face type or lettering and listed on a page or pages headed "DEPARTURES FROM DRAWINGS AND SPECIFICATIONS", and can be installed in the allocated spaces.

Reviewed by _____ Date _____

The person signing the review stamp shall be the person designated in writing by the Contractor as having that authority. (A copy of such designation shall be forwarded to the A/E prior to or with the first Submittal.) The signature on the stamped review statement shall be handwritten in ink, or in the case of electronic submittals, electronically signed in accordance with § 59.1-479 et seq. of the *Code of Virginia*. Stamped signatures are not acceptable.

- (h) The Contractor shall forward all Submittals sufficiently in advance of construction requirements to allow reasonable time for checking, correcting, resubmitting and rechecking.
- (i) If a Submittal indicates a departure from the Contract requirements, the Architect/Engineer may reject the Submittal or, if he deems it to have merit, may recommend it to the Owner, who shall approve or reject it as the Owner, in its sole discretion, sees fit. The departure from the Contract requirements shall be further authorized by a Change Order, if a reduction or increase in the Contract Price is appropriate.
- (j) The Architect/Engineer is responsible to the Owner, but not to the Contractor, to verify that the Submittals conform to the design concept and functional requirements of the plans and specifications, that the detailed design portrayed in shop drawings and proposed equipment and

materials shown in Submittals are of the quality specified and will function properly, and that the Submittals comply with the Contract Documents.

- (k) The Work shall be in accordance with approved Submittals. Approval of the Contractor's Submittals by the A/E does not relieve the Contractor from responsibility of complying with the Contract and all drawings and specifications, except as changed by Change Order.
- (l) The plans and/or specifications may indicate that the Architect/Engineer designed or detailed a portion of the plans around a particular product (most commonly a piece of equipment). Should a different product be proposed by the Contractor and accepted, all modifications, rerouting, relocations and variations required for proper installation and coordination to comply with the design concept and requirements of the Contract Documents shall be the responsibility of the Contractor and shall be made at no extra cost to the Owner. If the plans were noted as designed or detailed around a particular product and/or if a product is named when a "brand name or equal" specification has been used, this is not intended to favor or preclude the use of other products pursuant to Section 26 of these General Conditions. Rather such design merely acknowledges the reality that in many instances the Architect/Engineer must have a basis to design and detail around for dimensions and characteristics of a product or system.
- (m) Additional Submittal requirements are shown in the specifications.

25. FEES, SERVICES AND FACILITIES

- (a) The Contractor shall obtain all permits, except the Building Permit, and pay for all fees and charges necessary for temporary access and public right-of-way blockage or use, for temporary connections to utilities and for the use of property (other than the Site) for storage of materials and other purposes unless otherwise specifically stated in the Contract Documents.
- (b) Certain projects such as renovations and interior modifications of existing buildings will usually have water and electric service to the building. In those instances, water and electric power, if required for the Work under the Contract, will be furnished by the Owner subject to reasonable use by the Contractor, only to the extent and capacity of present services. The Contractor shall be responsible for providing required connections, temporary wiring, piping, etc. to these services in a safe manner and in accordance with applicable codes. All temporary wire, pipe, etc. shall be removed before the Substantial Completion inspection. Acceptance by the Contractor of the use of Owner's water and electricity constitutes a release to the Owner of all claims and of all liability to the Contractor for whatever damages which may result from power and water outages or voltage variations.
- (c) The Owner shall pay any connection charges for permanent utility connections directly to the utility Supplier. The Contractor shall coordinate such connections with the utility Supplier.
- (d) It is understood that, except as otherwise specifically stated in the Contract Documents, the Contractor, either directly or through his Subcontractors, shall provide and pay for all material, labor, tools, equipment, water, light, power, telephone and other services or facilities of every nature whatsoever necessary to execute completely and deliver the Work within the Contract Time for Completion or before the Contract Completion Date.
- (e) The Contractor shall provide temporary facilities including Contractor's office space, Owner's Project Inspector office space (if required by the specifications), toilet facilities, and storage space, as required for the operations and the protection of the material and work. Number, sizes and locations shall be subject to approval of the Owner. Sanitary facilities shall be plumbed into an approved waste treatment system or shall be an approved type of chemical toilet and shall be regularly serviced.

26. EQUALS

- (a) **Brand names:** Unless otherwise stated in the specifications, the name of a certain brand, make or manufacturer denotes the characteristics, quality, workmanship, economy of operation and suitability for the intended purpose of the article desired, but does not restrict the Contractor to the specific brand, make, or manufacturer; it is set forth to convey to the Contractor the general style, type, character and quality of the article specified.
- (b) **Equal materials, equipment or assemblies:** Whenever in these Contract Documents, a particular brand, make of material, device or equipment is shown or specified, such brand, make of material, device or equipment shall be regarded merely as a standard. Any other brand, make or manufacturer of a product, assembly or equipment which in the opinion of the Architect/Engineer is the equal of that specified, considering quality, capabilities, workmanship, configuration, economy of operation, useful life, compatibility with design of the Work, and suitability for the intended purpose, will be accepted unless rejected by the Owner as not being equal.
- (c) **Substitute materials, equipment or assemblies:** The Contractor may propose to substitute a material, product, equipment, or assembly which deviates from the requirements of the Contract Documents but which the Contractor deems will perform the same function and have equal capabilities, service life, economy of operations, and suitability for the intended purpose. The proposal must include any cost differentials proposed. The Owner will have the A/E provide an initial evaluation of such proposed substitutes and provide a recommendation on acceptability and indicate the A/E's redesign fee to incorporate the substitution in the design. If the proposed substitute is acceptable to the Owner, a Change Order will be proposed to the Contractor to accept the substitute and to deduct the cost of the A/E redesign fee and the proposed cost savings from the Contract Price. The Owner shall have the right to limit or reject substitutions at its sole discretion.
- (d) The Contractor shall be responsible for making all changes in the Work necessary to adapt and accommodate any equal or substitute product which it uses. The necessary changes shall be made at the Contractor's expense.

27. AVAILABILITY OF MATERIALS

If a brand name, product, or model number included in the Contract Documents is not available on the present market, alternate equal products or model numbers may be proposed by the Contractor through the Architect/Engineer for approval by the Owner.

28. CONTRACTOR'S TITLE TO MATERIALS

No materials or supplies for the Work shall be purchased by the Contractor, or by any Subcontractor or Supplier, subject to any security interest, installment or sales contract or any other agreement or lien by which an interest is retained by the seller or is given to a secured party. The Contractor warrants that he has clear and good title to all materials and supplies which he uses in the Work or for which he accepts payment in whole or in part.

29. STANDARDS FOR MATERIALS INSTALLATION & WORKMANSHIP

- (a) Unless otherwise specifically provided in the Contract, all equipment, material, and accessories incorporated in the Work are to be new and in first class condition.
- (b) Unless specifically approved by the Owner or required by the Contract, the Contractor shall not incorporate into the Work any materials containing asbestos or any material known by the industry to be hazardous to the health of building construction workers, maintenance workers, or occupants. If the Contractor becomes aware that a material required by the Contract contains

asbestos or other hazardous materials, he shall notify the Owner and the Architect/Engineer immediately and shall take no further steps to acquire or install any such material without first obtaining Owner approval.

- (c) All workmanship shall be of the highest quality found in the building industry in every respect. All items of Work shall be done by craftsmen or tradesmen skilled in the particular task or activity to which they are assigned. In the acceptance or rejection of Work, no allowance will be made for lack of skill on the part of workmen. Poor or inferior workmanship (as determined by the Architect/Engineer, the Owner or other inspecting authorities) shall be removed and replaced at Contractor's expense such that the Work conforms to the highest quality standards of the trades concerned, or otherwise corrected to the satisfaction of the Architect/Engineer, the Owner, or other inspecting authority, as applicable.
- (d) Under the various sections of the plans or specifications, where specified items are supplied with the manufacturer's printed instructions, recommendations, or directions for installation, or where such instructions, recommendations, or directions are available, installation of the specified items shall be in strict accordance with the manufacturer's printed instructions unless those instructions contradict the plans or specifications, in which case the Architect/Engineer will be notified for an interpretation and decision.
- (e) Under the various sections of the plans or specifications, where reference is made to specific codes or standards governing the installation of specified items, installation shall in all cases be in strict accordance with the referenced codes and standards. Where no reference is made to specific codes or standards, installation shall conform to the generally recognized applicable standards for first-class installation of the specific item to be installed. Contractors are expected to be proficient and skilled in their respective trades and knowledgeable of the Codes and Standards of the National Fire Protection Association (NFPA), National Electric Code (NEC), Occupational Safety and Health Act (OSHA) and other codes and standards applicable to installations and associated work by his trade.
- (f) Where the manufacturer's printed instructions are not available for installation of specific items, where specific codes or standards are not referenced to govern the installation or specific items, or where there is uncertainty on the part of the Contractor concerning the installation procedures to be followed or the quality of workmanship to be maintained in the installation of specific items, the Contractor shall consult the Architect/Engineer for approval of the installation procedures or the specific standards governing the quality of workmanship the Contractor proposes to follow or maintain during the installation of the items in question.
- (g) During and/or at the completion of installation of any items, the tests designated in the plans or specifications necessary to assure proper and satisfactory functioning for its intended purpose shall be performed by the Contractor or by its Subcontractor responsible for the completed installation. All costs for such testing are to be included in the Contract Price. If required by the Contract Documents, the Contractor shall furnish prior to final inspection the manufacturers' certificates evidencing that products meet or exceed applicable performance, warranty and other requirements, and certificates that products have been properly installed and tested.

30. WARRANTY OF MATERIALS AND WORKMANSHIP

- (a) The Contractor warrants that, unless otherwise specified, all materials and equipment incorporated in the Work under the Contract shall be new, in first class condition, and in accordance with the Contract Documents. The Contractor further warrants that all workmanship shall be of the highest quality and in accordance with the Contract Documents and shall be performed by persons qualified at their respective trades.
- (b) Work not conforming to these warranties shall be considered defective.

- (c) This warranty of materials and workmanship is separate and independent from and in addition to any of the Contractor's other guarantees or obligations in the Contract or under Virginia law.

31. USE OF SITE AND REMOVAL OF DEBRIS

- (a) The Contractor shall:
 - (1) Perform the Work in such a manner as not to interrupt or interfere with the operation of any existing activity on, or in proximity to, the Site or with the Work of any other separate contractor;
 - (2) Store his apparatus, materials, supplies and equipment in such orderly fashion at the Site of the Work as will not unduly interfere with the progress of his Work or the work of any other separate contractor; and
 - (3) Place upon the Work or any part thereof only such loads as are consistent with the safety of that portion of the Work.
- (b) The Contractor expressly undertakes, either directly or through his Subcontractor(s), to effect all cutting, filling or patching of the Work required to make the same conform to the plans and specifications, and, except with the consent of the Architect/Engineer, not to cut or otherwise alter the Work of any other separate contractor. The Contractor shall not damage or endanger any portion of the Work or Site, including existing improvements, unless called for by the Contract.
- (c) The Contractor expressly undertakes, either directly or through his Subcontractor(s), to clean up frequently all refuse, rubbish, scrap materials and debris caused by his operations, to the end that at all times the Site shall present a neat, orderly and workmanlike appearance. No such refuse, rubbish, scrap material and debris shall be left within the completed Work nor buried on the building Site, but shall be removed from the Site and properly disposed of in a licensed landfill or otherwise as required by law.
- (d) The Contractor expressly undertakes, either directly or through his Subcontractor(s), before Final Payment or such prior time as the Owner may require, to remove all surplus material, false Work, temporary structures, including foundations thereof, plants of any description and debris of every nature resulting from his operations and to put the Site in a neat, orderly condition; to thoroughly clean and leave reasonably dust free all finished surfaces including all equipment, piping, etc., on the interior of all buildings included in the Contract; and to clean thoroughly all glass installed under the Contract, including the removal of all paint and mortar splatters and other defacements.

If the Contractor fails to clean up at the time required herein, the Owner may do so and charge the costs incurred thereby to the Contractor in accordance with Section 10 (b) of these General Conditions.

- (e) The Contractor shall have, On-Site, an employee certified by the Department of Environmental Quality as a Responsible Land Disturber who shall be responsible for the installation, inspection and maintenance of erosion control and stormwater management measures and devices. The Contractor shall prevent Site soil erosion, the runoff of silt and/or debris carrying water from the Site, and the blowing of debris off the Site in accordance with the applicable requirements and standards of the Contract and the Virginia Department of Environmental Quality's Erosion and Sediment Control Regulations and the Virginia Stormwater Management Regulations.

32. TEMPORARY ROADS

Temporary roads, if required, shall be established and maintained until permanent roads are accepted, then removed and the area restored to the conditions required by the Contract Documents. Crushed rock, paving and other road materials from temporary roads shall not be left on the Site unless permission is received from the Owner to bury the same at a location and depth approved by the Owner.

33. SIGNS

The Contractor may, at his option and without cost to the Owner, erect signs acceptable to the Owner on the Site for the purpose of identifying and giving directions to the job. No signs shall be erected without prior approval of the Owner as to design and location.

34. PROTECTION OF PERSONS AND PROPERTY

- (a) The Contractor expressly undertakes, both directly and through his Subcontractors, to take every reasonable precaution at all times for the protection of all persons and property which may come on the Site or be affected by the Contractor's Work.
- (b) The Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Any violation of these requirements or duties or any potential safety hazard that is brought to the attention of the Contractor by the Architect/Engineer, the Owner, or any other persons shall be immediately abated.
- (c) The provisions of all rules and regulations governing health and safety as adopted by the Safety Codes Commission of the Commonwealth of Virginia, issued by the Department of Labor and Industry under Title 40.1 of the *Code of Virginia*, shall apply to all Work under this Contract.
- (d) The Contractor shall continuously maintain adequate protection of all his Work from damage and shall protect the Owner's property from injury or loss arising in connection with this Contract. He shall make good any such damage, injury or loss, except as may be directly and solely due to errors in the Contract Documents or caused by agents or employees of the Owner. The Contractor shall adequately protect adjacent property to prevent any damage to it or loss of use and enjoyment by its owners. The Contractor shall provide and maintain all passageways, guard fences, lights and other facilities for protection as required by public authority, local conditions, or the Contract.
- (e) In an emergency affecting the health, safety or life of persons or of the Work, or of the adjoining property, the Contractor, without special instruction or authorization from the Architect/Engineer or the Owner, shall act, at his discretion, to prevent such threatened loss or injury. Also, should he, to prevent threatened loss or injury, be instructed or authorized to act by the Architect/Engineer or the Owner, he shall so act immediately, without appeal. Any additional compensation or extension of time claimed by the Contractor on account of any emergency work shall be determined as provided by Section 38 of these General Conditions.
- (f) When necessary for the proper protection of the Work, temporary heating of a type approved by the Architect/Engineer must be provided by the Contractor, at the Contractor's expense, unless otherwise specified.

35. CLIMATIC CONDITIONS

The Contractor shall suspend activity on and protect any portion of the Work that may be subject to damage by climatic conditions.

36. PAYMENTS TO CONTRACTOR

(a) Unless otherwise provided in the Contract, the Owner will make partial payments to the Contractor on the basis of a duly certified and approved Schedule of Values and Certificate for Payment, Form CO-12, showing the estimate of the Work performed during the preceding calendar month or work period, as recommended by the Architect/Engineer. When evaluating the Contractor's Form CO-12, the Architect/Engineer will consider the value of the Work in place, the value of approved and properly stored materials, the status of the Work on the critical path with regard to the Time for Completion, and the estimated value of the Work necessary to achieve Final Completion. The Architect/Engineer will schedule a monthly pay meeting to occur no earlier than the 25th day of the month represented by the payment request or not later than the 5th day of the following month. The Contractor shall submit his monthly estimate of Work completed on Form CO-12 in accordance with the Contract between the Owner and Contractor so that it is received by the Architect/Engineer and the Owner's Project Manager at least one work day prior to the date scheduled by the Architect/Engineer for the monthly pay meeting. The Owner will review the estimate with the Architect/Engineer and the Contractor at the monthly pay meeting, which shall be considered the receipt date, and may approve any or all of the estimate of Work for payment. In preparing estimates, the material delivered to the Site and preparatory Work done shall be taken into consideration, if properly documented as required by Section 20 of these General Conditions, or as may be required by the Architect/Engineer so that quantities may be verified. In addition to material delivered to the Site, material such as large pieces of equipment and items purchased specifically for the Project, but stored off the Site within the Commonwealth of Virginia, may be considered for payment, provided all of the following are accomplished prior to the submission of the monthly payment request in which payment for such materials is requested:

- (1) The Contractor must notify the Owner in writing, at least ten (10) days prior to the submission of the payment request, through the Architect/Engineer, that specific items will be stored off Site in a designated, secured place within the Commonwealth of Virginia. The Schedule of Values must be detailed to indicate separately both the value of the material and the labor/installation for trades requesting payment for stored materials. By giving such notification and by requesting payment for material stored off Site, the Contractor warrants that the storage location is safe and suitable for the type of material stored and that the materials are identified as being the property of the Contractor, and agrees that loss of materials stored off the Site shall not relieve the Contractor of the obligation to timely furnish these types and quantities of materials for the Project and meet the Time for Completion or Contract Completion Date, subject to Section 43 (b) of these General Conditions. If the storage location is more than 20 miles from the Site, the Contractor may be required to reimburse the Owner for the cost incurred for travel to the storage location to verify the Contractor's request for payment for materials stored off Site. A Supplementary Agreement shall be required for payment by the Owner to the Contractor for materials or equipment that is stored offsite at a location that is not within the Commonwealth of Virginia.
- (2) Such notification, as well as the payment request, shall:
 - (a) Itemize the quantity of such materials and document with invoices showing the cost of said materials;
 - (b) Indicate the identification markings used on the materials, which shall clearly reference the materials to the particular project;
 - (c) Identify the specific location of the materials, which must be within reasonable proximity to the Site and within the Commonwealth of Virginia;

- (d) Include a letter from the Contractor's Surety which confirms that the Surety on the Performance Bond and the Labor and Material Payment Bond has been notified of the request for payment of materials stored off the Site and agrees that the materials are covered by the bond; and
 - (e) Include a certificate of all-risk builder's risk insurance in an amount not less than the fair market value of the materials, which shall name the Owner and the Contractor as co-insureds.
- (3) The Architect/Engineer shall indicate, in writing, to the Owner that Submittals for such materials have been reviewed and meet the requirements of the Contract Documents, that the stored materials meet the requirement of the plans and specifications, and that such materials conform to the approved Submittals. Should the A/E deem it necessary to visit the storage site to make such review, the Contractor shall bear the costs incurred therewith.
- (4) The Owner, through the Architect/Engineer, shall notify the Contractor in writing of its agreement to prepayment for such materials.
- (5) The Contractor shall notify the Owner in writing, through the Architect/Engineer, when the materials are to be transferred to the Site and when the materials are received at the Site.
- (b) Payment will not be made for materials or equipment stored on or off the Site which are not scheduled for incorporation into the Work within the six months next following submission of the request for payment, unless the Contractor has the prior consent of the Owner, which consent may be granted or withheld by the Owner in its discretion if, in the opinion of the Owner, it is not necessary to procure the materials more than six months in advance of use to assure their availability when needed.
- (c) No payment shall be made to the Contractor until:
- (1) The Contractor furnishes to the Owner its Social Security Number (SSN) if an individual, or its Federal Employer Identification Number (FEIN) if a proprietorship, partnership, corporation or other legal entity.
 - (2) Certificates of Insurance or other satisfactory evidence of compliance by the Contractor with all the requirements of Section 11 (and Section 12 if applicable) of these General Conditions have been delivered to the Owner.
 - (3) Copies of any certificates of insurance required of a Subcontractor under Section 11 have been delivered to the Owner for payments based on Work performed by a Subcontractor.
 - (4) The Contractor has (i) submitted a preliminary schedule which is acceptable to the Owner in accordance with Section 19(a), (ii) submitted a fully complete Project schedule accepted by the Owner in accordance with Section 19(a), (iii) maintained the monthly bar graphs or status reports required by Section 19(d), or (iv) provided a recovery schedule pursuant to Section 19(e), as each of them may be required.
- (d) In making such partial payments, five percent (5%) of each payment to the Contractor shall be retained until Final Completion and acceptance of all Work covered by the Contract, unless otherwise provided by any law, regulation or program of the federal government. Such retainage shall be held to assure faithful performance of the Contract and may also be used as a fund to deduct amounts due to or claimed by the Owner, including, but not limited to, payment to the Owner of all moneys due for deductive change orders, credits, uncorrected Defective Work,

interest, damages, and the like. (§ 2.2-4333 of the *Code of Virginia*) The Owner may, at its sole discretion, agree on an item by item basis to release the retainage on items which are fully 100% complete and which have accepted by the Owner as being tested and complete and on which no further action or work will be required. Retainage which is released by the Owner shall be distributed by the Contractor in conformance with Section 37 of these General Conditions.

- (e) All material and Work for which partial payments are made shall thereupon become the sole property of the Owner, but this provision shall not relieve the Contractor from the sole responsibility for all materials and Work, including those for which payment has been made, or for the restoration of any damaged materials or Work. Nor shall this provision serve as a waiver of the right of the Owner to require the fulfillment of all of the terms and conditions of the Contract.
- (f) The Final Payment, which shall include the retainage, less any amounts due to or claimed by the Owner, shall not become due until the Architect/Engineer and the Owner agree that Final Completion has been achieved and until the Contractor shall deliver to the Owner through the Architect/Engineer a Certificate of Completion by the Contractor (Form CO-13.2) and an Affidavit of Payment of Claims (Form CO-13), stating that all Subcontractors and Suppliers of either labor or materials have been paid all sums claimed by them for Work performed or materials furnished in connection with this Project less retainage. Amounts due the Owner which may be withheld from the Final Payment may include, but are not limited to, amounts due pursuant to Section 3(i), Section 16(a)-(d), Section 31(d), costs incurred to repair or replace Defective Work, costs incurred as a result of the Contractor's negligent acts or omissions or omissions of those for whom the Contractor is responsible, delay damages under Section 43(h), and any liquidated or actual damages. If all Subcontractors and Suppliers of labor and materials have not been paid the full amount claimed by them, the Contractor shall list each to which an agreed amount of money is due or which has a claim in dispute. With respect to all such Subcontractors and Suppliers, the Contractor shall provide to the Owner, along with the Affidavit of Payment of Claims (Form CO-13), an affidavit from each such Subcontractor and Supplier stating the amount of their subcontract or supply contract, the percentage of completion, the amounts paid to them by the Contractor and the dates of payment, the amount of money still due if any, any interest due the Subcontractor or Supplier pursuant to Section 37(b) below, and whether satisfactory arrangements have been made for the payment of said amounts. If no agreement can be reached between the Contractor and one or more Subcontractors or Suppliers as to the amounts owed to the Subcontractors or Suppliers, the Owner may, in its discretion, pay such portion of the moneys due to the Contractor which is claimed by the Subcontractor or Supplier into a Virginia Court or Federal Court sitting in Virginia, in the manner provided by law. Said payment into court shall be deemed a payment to the Contractor. Nothing in this Section shall be construed as creating any obligation or contractual relationship between the Owner and any Subcontractor or Supplier, and the Owner shall not be liable to any Subcontractor or Supplier on account of any failure or delay of the Owner in complying with the terms hereof.

Before Final Payment is made, the Owner shall confirm that the Contractor has certified compliance with the contract's small business procurement plan by providing a report in accordance with DSBSD's requirements. If there are variances between the Contractor's required small business procurement plan and the actual participation, the Contractor shall provide a written explanation which shall be kept with the contract file and made available upon request. The Owner, in its sole discretion, may withhold the Final Payment until the Contractor is in compliance with its small business procurement plan.

- (g) Upon successful completion of the final inspection and all Work required by the Contract, including but not limited to the delivery of As-Built drawings, equipment manuals, written warranties, acceptance of the Work by the Owner and the delivery of the affidavits required in Section 36(f) of these General Conditions, the Architect/Engineer shall deliver the written Certificate of Completion by the Architect/Engineer (Form CO-13.1) to the Owner, with a copy to the Contractor, stating the entire amount of Work performed and compensation earned by the

Contractor, including extra work and compensation therefor. The Owner may accept the Work for occupancy or use while asserting claims against the Contractor; disputing the amount of compensation due to the Contractor; disputing the quality of the Work, its completion, or its compliance with the Contract Documents; or any other reason.

- (h) Unless there is a dispute about the compensation due to the Contractor, Defective Work, quality of the Work, compliance with the Contract Documents, completion itself, claims by the Owner, other matters in contention between the parties, or unless monies are withheld pursuant to the Comptroller's Debt Setoff Program, within thirty (30) days after receipt and acceptance of the Schedule of Values and Certificate for Payment (Form CO-12) in proper form by the Architect/Engineer at the monthly pay meeting, which shall be considered the receipt date, the Owner shall pay to the Contractor the amount approved by the Architect/Engineer, less all prior payments and advances whatsoever to or for the account of the Contractor. In the case of Final Payment, the completed Affidavit of Payment of Claims (Form CO-13), the Certificate of Completion by the Contractor (Form CO-13.2) and the Certificate of Completion by the Architect/Engineer (Form CO-13.1) shall accompany the final Schedule of Values and Certificate for Payment (Form CO-12) which is forwarded to the Owner for payment. The date on which payment is due shall be referred to as the Payment Date. In the event of disputes, payment shall be mailed on or before the Payment Date for amounts and Work not in dispute, subject to any set offs claimed by the Owner; provided, however in instances where further appropriations are required by the General Assembly or where the issuance of further bonds is required, in which case, payment shall be made within thirty (30) days after the effective date of such appropriation or within thirty (30) days after the receipt of bond proceeds by the Owner. All prior estimates and payments including those relating to extra Work may be corrected and adjusted in any payment and shall be corrected and adjusted in the Final Payment. In the event that any request for payment (CO-12) by the Contractor contains a defect or impropriety, the Owner shall notify the Contractor of any defect or impropriety which would prevent payment by the Payment Date, within five (5) days after receipt of the Schedule of Values and Certificate for Payment (Form CO-12) by the Owner from the Architect/Engineer.
- (i) Interest shall accrue on all amounts owed by the Owner to the Contractor which remain unpaid seven (7) days following the Payment Date. Said interest shall accrue at the discounted ninety-day U.S. Treasury bill rate as established by the Weekly Auction and as reported in the publication entitled *The Wall Street Journal* on the weekday following each such Weekly Auction. During the period of time when the amounts due to the Contractor remain unpaid following the seventh (7) day after the Payment Date, the interest accruing shall fluctuate on a weekly basis and shall be that established by the immediately prior Weekly Auction. It shall be the responsibility of the Contractor to gather and substantiate the applicable weekly interest rates to the satisfaction of the Owner and to calculate to the satisfaction of the Owner the interest due. In no event shall the rate of interest charge exceed the rate of interest charged pursuant to § 58.1-1812 of the *Code of Virginia*. No interest shall accrue on retainage or when payment is delayed because of disagreement between the Owner and the Contractor regarding the quantity, quality or timeliness of the Work, including, but not limited to, compliance with Contract Documents or the accuracy of any Request for Payment received. This exception to the accrual of interest stated in the preceding sentence shall apply only to that portion of a delayed payment which is actually the subject of such a disagreement and shall apply only for the duration of such disagreement. Nothing contained herein shall be interpreted, however, to prevent the withholding of retainage to assure faithful performance of the Contract. These same provisions relating to payment of interest to the Contractor shall apply also to the computation and accrual of interest on any amounts due from the Contractor to the Owner for deductive change orders and to amounts due on any claims by the Owner. The date of mailing of any payment by the U.S. Mail is deemed to be the date of payment to the addressee.
- (j) The acceptance by the Contractor of the Final Payment shall be and operate as a release to the Owner of all claims by the Contractor, its Subcontractors and Suppliers, and of all liability to the

Contractor whatever, including liability for all things done or furnished in connection with this Work, except for things done or furnished which are the subject of unresolved claims for which the Contractor has filed a timely written notice of intent, provided a claim is submitted no later than sixty (60) days after Final Payment. Acceptance of any interest payment by the Contractor shall be a release of the Owner from claims by the Contractor for late payment.

- (k) No certificate for payment issued by the Architect/Engineer, and no payment, final or otherwise, no certificate of completion, nor partial or entire use or occupancy of the Work by the Owner, shall be an acceptance of any Work or materials not in accordance with the Contract, nor shall the same relieve the Contractor of responsibility for faulty materials or Defective Work or operate to release the Contractor or his Surety from any obligation under the Contract, the Standard Performance Bond and the Standard Labor and Material Payment Bond.

37. PAYMENTS BY CONTRACTOR (§ 2.2-4354, Code of Virginia)

Under § 2.2-4354, *Code of Virginia*, the Contractor is obligated to:

- (a) Within seven (7) days after receipt of amounts paid to the Contractor by the Owner for Work performed by the Subcontractor or Supplier under this Contract,
 - (1) Pay the Subcontractor or Supplier for the proportionate share of the total payment received from the Owner attributable to the Work performed by the Subcontractor or the materials furnished by the Supplier under this Contract; or
 - (2) Notify the Subcontractor or Supplier, in writing, of his intention to withhold all or a part of the Subcontractor or Supplier's payment with the reason for nonpayment;
- (b) Pay interest to the Subcontractor or Supplier on all amounts owed by the Contractor that remain unpaid after seven (7) days following receipt by the Contractor of payment from the Owner for Work performed by the Subcontractor or materials furnished by the Supplier under this contract, except for amounts withheld as allowed under subsection (a) (2) of this Section.
- (c) Include in each of his subcontracts a provision requiring each Subcontractor to include in each of its subcontracts a provision requiring each subcontractor to include or otherwise be subject to the same payment and interest requirements with respect to each lower tier subcontractor. Each Subcontractor shall include with its invoice to, or request for payment from, the Contractor, a certification that that Subcontractor has paid each of its suppliers and lower tier subcontractors their proportionate share of previous payments received from the Contractor attributable to the Work performed or the materials furnished by it under this Contract.

The Contractor's obligation to pay interest to the Subcontractor or Supplier pursuant to subsection (b) of this Section is not an obligation of the Owner. A modification to this Contract shall not be made for the purpose of providing reimbursement for such interest charge. A Contractor's cost reimbursement claim shall not include any amount for reimbursement of such interest charge.

38. CHANGES IN THE WORK

- (a) The Owner may at any time, by written order utilizing the Commonwealth of Virginia Change Order Form CO-11 and without notice to the sureties, make changes in the Work which are within the general scope of the Contract, except that no change will be made which will increase the total Contract Price to an amount more than twenty percent (20%) in excess of the original Contract Price without notice to sureties. At the time of the Preconstruction Meeting described in Section 50(b), the Contractor and the Owner shall advise each other in writing of their designees authorized to accept and/or approve changes to the Contract Price and of any limits to each designee's authority. Should any designee or limits of authority change during the time this

Contract is in effect, the Contractor or Owner with such a change shall give written notice to the other within seven (7) calendar days, utilizing the procedures set forth in these General Conditions. The Contractor agrees and understands that the authority of the Owner's designee is limited by Virginia Code §2.2-4309 and any other applicable statute.

In making any change, the charge or credit for the change shall be determined by one of the following methods as selected by the Owner:

- (1) **Fixed Price:** By a mutually agreed fixed amount change to the Contract Price and/or time allowed for completion of the Work. The Change Order shall be substantiated by documentation itemizing the estimated quantities and costs of all labor, materials, and equipment required as well as any mark-up used. The price change shall include the Contractor's reasonable overhead and profit, including overhead for any unreasonable delay arising from or related to the Change Order and/or the change in the Work. See Subsections (d), (e) and (f), below.
- (2) **Unit Price:** By using unit prices and calculating the number of net units of Work in each part of the Work which is changed, either as the Work progresses or before Work on the change commences, and by then multiplying the calculated number of units by the applicable unit price set forth in the Contract or multiplying by a mutually agreed unit price if none was provided in the Contract. No additional percentage markup for overhead or profit shall be added to the unit prices.
- (3) **Cost Reimbursement:** By ordering the Contractor to perform the changed Work on a cost reimbursement basis by issuing two Change Orders citing this Subsection, an initiating Change Order, authorizing the changed Work, and a confirming Change Order approving the additional cost and time for the changed Work. The initiating Change Order shall:
 - (i) Describe the scope or parameters of the change in the Work;
 - (ii) Describe the cost items to be itemized and verified for payment and the method of measuring the quantity of work performed;
 - (iii) Address the impact on the schedule for Substantial Completion;
 - (iv) Order the Contractor to proceed with the change to the Work;
 - (v) Order the Contractor to keep in a form acceptable to the Owner, an accurate, itemized account of the actual cost of the change in the Work, including, but not limited to, the actual costs of labor, materials, equipment, and supplies;
 - (vi) Order the Contractor to annotate a copy of the Project schedule to accurately show the status of the Work at the time this first Change Order is issued, to show the start and finish dates of the changed Work, and the status of the Work when the changed Work is completed; and
 - (vii) State that a confirming Change Order will be issued to incorporate the cost of the ordered change in the Work into the Contract Price and any change in the Contract Time for Completion or Contract Completion Date.

The Contractor shall sign the initiating Change Order acknowledging he has been ordered to proceed with the change in the Work. The Contractor's signature on each initiating Change Order citing this Subsection 38(a)(3) as the method for determining the cost of

the Work shall not constitute the Contractor's agreement on the cost or time impact of the ordered Work.

Except as otherwise may be agreed to in writing by the Owner, such costs shall not exceed those prevailing for the trades or crafts (based upon rates established by the US Department of Labor, Bureau of Labor Statistics, or other generally recognized cost data publication), materials, and equipment in the locality of the Project, may include only those items listed as allowable in Subsection 38(e), and shall not include any of the costs listed as not allowable in Subsection 38(f). The Owner shall be permitted, on a daily basis, to verify such records and may require such additional records as are necessary to determine the cost of the change to the Work.

Within fourteen (14) days after the conclusion of such ordered Work, the Contractor and the Owner shall reach agreement on (i) a cost for the ordered Work, based on the records kept and the Contractor's allowance for overhead and profit determined in accordance with the provisions set forth in Subsections 38(d), (e), and (f) below; and (ii) the change in the Contract Time for Completion or Contract Completion Date, if necessary, as a result of the ordered Work. Such costs and time shall be incorporated into a confirming Change Order which references the initiating Change Order. If agreement on the cost and time of the changed Work cannot be reached within the fourteen (14) days allotted, the Contractor may submit a claim for the disputed cost or time as provided for in Section 47.

- (4) By issuing a unilateral change order in the amount deemed appropriate by the Owner for the Work. If the Contractor objects to the amount or scope of the change order then the Contractor may within the 14 days of the date of the change order file a claim for the disputed amount as provided for in section 47.
- (b) The Contractor shall review any Owner requested or directed change and shall respond in writing within fourteen (14) calendar days after receipt of the proposed change (or such other reasonable time as the Owner may direct), stating the effect of the proposed change upon his Work, including any increase or decrease in the Contract time and price. The Contractor shall furnish to the Owner an itemized breakdown of the quantities and prices used in computing the proposed change in Contract Price.

The Owner shall review the Contractor's proposal and respond to the Contractor within thirty (30) days of receipt. If a change to the Contract Price and Time for Completion or Contract Completion Date are agreed upon, both parties shall sign the Change Order. If the Contract Price and Time for Completion or Contract Completion Date are not agreed upon, the Owner may direct the Contractor to proceed under Subsection 38(a)(3), above. Change Orders shall be effective when signed by both parties, unless approval by the Governor or his designee is required, in which event the Change Order shall be effective when signed by the Governor or his designee.

- (c) In figuring changes, any instructions for measurement of quantities set forth in the Contract shall be followed.
- (d) Overhead and profit for both additive and deductive changes in the Work (other than changes covered by unit prices) shall be paid by applying the specified percentage markups only on the net cost of the changed Work (i.e. difference in cost between original and changed Work excluding overhead and profit). Said percentages for overhead and profit shall reasonably approximate the Contractor's overhead and profit, but shall not exceed the percentages for each category listed below:
 - (1) If a Subcontractor does all or part of the changed Work, the Subcontractor's mark-up for overhead and profit on the Work it performs shall be a maximum of fifteen percent

- (15%). The Contractor's mark-up for overhead and profit on the Subcontractor's price shall be a maximum of ten percent (10%).
- (2) If the Contractor does all or part of the changed Work, its markup for overhead and profit on the changed Work it performs shall be a maximum of fifteen percent (15%).
 - (3) If a Sub-subcontractor at any tier does all or part of the changed Work, the Sub-subcontractor's markup on that Work shall be a maximum of fifteen percent (15%). The markup for overhead and profit on a sub-subcontractor's Work by the Contractor and all intervening tiers of Subcontractors shall not exceed a total of ten percent (10%).
 - (4) Where Work is deleted from the Contract prior to commencement of that Work without substitution of other similar Work, one hundred percent (100%) of the Contract Price attributable to that Work shall be deducted from the Contract Price. However, in the event that material Submittals have been approved and orders placed for said materials, a lesser amount, but in no case less than eighty percent (80%) of the Contract Price attributable to that Work, shall be deducted from the Contract Price. The credit to the Owner for reduced premiums on labor and material bonds and performance bonds shall in all cases be one hundred percent (100%).
- (e) Allowable costs for changes in the Work may include but are not limited to the following:
- (1) Labor costs for employees directly employed in the change in the Work, including salaries and wages plus the cost of payroll charges and fringe benefits and overtime premiums, if such premiums are explicitly authorized by the Owner.
 - (2) Materials incorporated into the change to the Work, including costs of transportation and storage, if applicable. If applicable, all cash discounts shall accrue to the Contractor, unless the Owner deposits funds with the Contractor to make such payments, and all trade discounts, rebates, refunds, and returns from the sale of surplus materials shall accrue to the Owner.
 - (3) Equipment incorporated in the changed Work or equipment used directly in accomplishing the Work. If rented expressly for accomplishing the change in the Work, the cost shall be the rental rate according to the terms of the rental agreement, which the Owner shall have the right to approve. If owned by the Contractor, the costs shall be a reasonable price based upon the life expectancy of the equipment and the purchase price of the equipment. If applicable, transportation costs may be included.
 - (4) Costs of increases in premiums for the Standard Labor and Material Payment Bond and the Standard Performance Bond, provided coverage for the cost of the change in the Work results in such increased costs. At the Owner's request, the Contractor shall provide proof of his notification to the Surety of the change in the Work and of the Surety's agreement to include such change in its coverage. The cost of the increase in premium shall be an allowable cost but shall not be marked up.
 - (5) Contractor and Subcontractor overhead costs as set forth in Subsection (d) markups above.
 - (6) **Agreed Compensation for Overhead for Changes to Time for Completion or Contract Completion Date for Changes to the Work:** If the change in the Work also changes the Time for Completion or the Contract Completion Date by adding days to complete the Work, an itemized accounting of the following direct Site overhead and home office overhead and other indirect overhead expenses set forth in subparagraphs (i) and (ii) below may be considered as allowable costs for compensation in addition to those shown above:

(i) **Direct Site Overhead Expenses:**

The Contractor's per diem expenses, as shown by the itemized accounting, for the following allowable direct Site overhead expenses: The Site superintendent's pro-rata salary, temporary Site office trailer, and temporary Site utilities including basic telephone service, electricity, heat, water, and sanitary / toilet facilities for each day added. All other direct expenses are covered by and included in the Subsection 38(d) markups above.

(ii) **Home Office and Other Indirect Overhead Expenses:**

A five percent (5%) markup on the above direct Site overhead expenses will be allowed as compensation for the Contractor's home office overhead and all other direct or indirect overhead expenses for days added to the Time for Completion or the Contract Completion Date for a change in the Work. All other overhead and other direct or indirect overhead expenses are covered by and included in this markup and the Subsection (d) markups above.

(7) Any other costs directly attributable to the change in the Work with the exception of those set forth in Subsection 38(f) below.

(f) Allowable costs for changes in the Work shall not include the following:

(1) Costs due to the negligence of the Contractor, any Subcontractor, Supplier, their employees, or other persons for whom the Contractor is responsible, including, but not limited to, costs for the correction of Defective Work, for improper disposal of material, for equipment wrongly supplied, for delay in performing the Work, or for delay in obtaining materials or equipment.

(2) Home office expenses including payroll costs for the Contractor's officers, executives, administrators, accountants, counsel, timekeepers, clerks, and other similar administrative personnel employed by the Contractor, whether at the Site or in the Contractor's principal or branch office for general administration of the Work. These costs are deemed overhead included in the percentage markups allowable in Subsections 38(d) above.

(3) Home and field office expenses not itemized in Subsection 38(e)(6) above. Such items include, but are not limited to, expenses of Contractor's home and branch offices, Contractor's capital expenses, interest on Contractor's capital used for the Work, charges for delinquent payments, small tools, incidental job costs, rent, utilities, telephone and office equipment, and other general overhead expenses.

(4) Other items reasonably determined by the Owner to not be allowed.

(g) All Change Orders, except the "initial" Change Orders authorizing work citing Subsection 38(a)(3) procedures, must state that the Contract Time for Completion or Contract Completion Date is not changed or is either increased or decreased by a specific number of days. The old Time for Completion and, if changed, the new Time for Completion must be stated.

If the Contractor requests an extension to the Time for Completion or a later Contract Completion Date, he must provide written justification for the extension to the Architect/Engineer and to the Owner. The written justification must demonstrate an anticipated actual increase in the time required to complete the Work beyond that allowed by the Contract as adjusted by prior change orders or amendments to the Contract, not just an increase or decrease in the time needed to complete some portion of the total Work. When a CPM schedule is required by the Contract, no

extension to the Time for Completion or Contract Completion Date shall be allowed unless, and then only to the extent that, the additional or changed Work increases the length of the critical path beyond the Time for Completion or Contract Completion Date. If approved, the increase in time required to complete the Work shall be added to the Time for Completion or Contract Completion Date.

The Owner may decrease, by Change Order, the Time for Completion or Contract Completion Date when an Owner-requested deletion from the Work results in a decrease in the actual time required to complete the Work as demonstrable on the Bar Graph Schedule or on the CPM Schedule, whichever is appropriate. The Contractor may submit a request to decrease, by Change Order, the Time for Completion or Contract Completion Date under the procedures and subject to the considerations set forth in Section 19(f). No request for such decrease shall be considered for approval unless the proposed shorter schedule is otherwise acceptable under Sections 19(b) or (c), whichever is applicable. The Change Order decreasing the Time for Completion or changing the Contract Completion Date must be signed by both the Owner and the Contractor.

With the exception of Change Orders under Subsection 38(a)(3), which shall arrive at a change to the Contract Price and any change to time using the procedures set forth therein, each Change Order shall include all time and monetary impacts of the change, whether the Change Order is considered alone or with all other changes during the course of the Project. Failure to include a change to time and changes in the Contract Price attributable to the change in time under Subsections 38(a)(1) or (2) shall waive any change to the time and Contract Price unless the parties mutually agree in writing to postpone a determination of the time related impacts of the change. Such a determination may be postponed not more than forty-five (45) days to give the Contractor an opportunity to demonstrate a change in the time and price needed to complete the Work. During any such postponement, the Work shall proceed, unless the Owner agrees otherwise.

If at any time there is a delay in the critical path of the Work due to postponement, due to the Contractor's efforts to justify an extension of the time or an increase in the Contract Price, or due to the Contractor's refusal to proceed with any of the Work, pending agreement on a change in time or price, such delay and any Contractor costs resulting from it shall not serve as the basis for the extension of the Time for Completion or Contract Completion Date or for an increase in the Contract Price.

- (h) The acceptance by the Contractor of any payment made by the Owner under a Change Order shall be and operate as a release to the Owner of all claims by the Contractor and of all liability owing to the Contractor for all things done or furnished in connection with the Work described in the Change Order. The execution of any Change Order by the Owner shall not be an acceptance of any Work or materials not in accordance with the Contract Documents, nor shall it relieve the Contractor of responsibility for faulty materials or workmanship or operate to release the Contractor or his surety from any obligation arising under the Contract, the Standard Performance Bond, or the Standard Labor and Material Payment Bond.
- (i) Payments will not be made for any Work, labor, or materials performed on a unit price or a Subsection 38(a)(3) basis until the Contractor has furnished the Owner documents, certified as true and correct by an authorized officer or agent of the Contractor, evidencing the cost of such Work, labor, and materials. The Owner may require any or all of the following documentation to be provided by the Contractor.

For Work performed on a Unit Price basis:

- (1) Certified measurements of authorized and approved excavations, over-excavations, fills and/or backfills, and similar work; and/or

- (2) Certified measurements of piling installed, caissons installed, and similar work; and/or
- (3) Daily records of waste materials removed from the Site and/or fill materials imported to the Site.

For Work performed on a Subsection 38(a)(3) basis:

- (1) Certified payroll records showing the name, classification, date, daily hours, total hours, rate, and extension for each laborer, foreman, supervisor, or other worker; and/or
- (2) Equipment type & model, dates, daily hours, total hours, rental rate, or other specified rate, and extension for each unit of equipment;
- (3) Invoices for materials showing quantities, prices, and extensions;
- (4) Daily records of waste materials removed from the Site and/or fill materials imported to the Site;
- (5) Certified measurements of over-excavations, piling installed and similar work; and/or
- (6) Transportation records for materials, including prices, loads, and extensions.

Requests for payment shall be accompanied and supported by invoices for all materials used and for all transportation charges claimed. If materials come from the Contractor's own stock, then an affidavit may be furnished, in lieu of invoices, certifying quantities, prices, etc. to support the actual cost.

39. EXTRAS

If the Contractor claims that any instructions given to him by the Architect/Engineer or by the Owner, by drawings or otherwise, involve extra Work which increases the scope of the Contract, then, except in emergencies endangering life or property, he shall give the Architect/Engineer and the Owner written notice thereof before proceeding to execute the Work. Said notice shall be given promptly enough to avoid delaying the Work and in no instance later than fourteen (14) days after the receipt of such instructions. Should it not be immediately clear to the Contractor that the change involves extra Work outside the scope of the Contract, written notice shall be sufficient if given as soon as possible after such realization, but in no event later than fourteen (14) days after the start of such Work. If the Owner agrees, a Change Order shall be issued as provided in Section 38 of these General Conditions, and any additional compensation shall be determined by one of the three (3) methods provided in Subsection 38(a), as selected by the Owner. If the Owner does not agree, then any claims for compensation for the extra Work shall be filed in accordance with Section 47.

40. CONTRACTOR'S RIGHT TO STOP WORK OR TERMINATE THE CONTRACT

If the Work should be stopped under an order of any court or other public authority for a period of ninety (90) days through no fault of the Contractor or anyone employed by him, or if the Owner should fail to pay to the Contractor within thirty (30) days any sum certified by the Architect/Engineer when no dispute exists as to the sum due or any provision of the Contract, then the Contractor may, upon ten (10) calendar days written notice to the Owner and the Architect/Engineer, stop Work or terminate the Contract and recover from the Owner payment for the cost of the Work actually performed, together with overhead and profit thereon, but profit on the Work performed shall be recovered only to the extent that the Contractor can demonstrate that he would have had profit on the entire Contract if he had completed the Work. The Contractor may not receive profit or any other type of compensation for parts of the Work not performed. The Contractor may recover the reasonable cost of physically closing down the Site, but no other costs of termination. The Owner may offset any claims it may have against the Contractor against the amounts due

to the Contractor. In no event shall termination of the Contract by the Contractor terminate the obligations of the Contractor's surety on its payment and performance bonds.

41. OWNER'S RIGHT TO TERMINATE THE CONTRACT FOR CAUSE

- (a) If the Contractor should be adjudged as bankrupt, or if he should make a general assignment for the benefit of his creditors, or if a receiver should be appointed on account of his insolvency, the Owner may terminate the Contract. If the Contractor should refuse or should repeatedly fail, except in cases for which extension of time is provided, to supply enough properly skilled workmen or proper materials and equipment, or if he should fail to perform the Work in a diligent, efficient, workmanlike, skillful, and careful manner, or if he should fail or refuse to perform the Work in accordance with the Contract Documents, or if he should fail to make prompt payment to Subcontractors or Suppliers of material or labor, or if he should disregard laws, ordinances or the written instructions of the Architect/Engineer or the Owner, or otherwise be in substantial violation of any provision of the Contract, then the Owner may terminate the Contract.
- (b) Prior to termination of the Contract, the Owner shall give the Contractor and his surety ten (10) days written notice of such termination in the manner provided in Section 1 (definition of "Notice") of these General Conditions and allow ten (10) days during which the Contractor and/or his surety may rectify the basis for the notice. If rectified to the satisfaction of the Owner within said ten (10) days, the Owner may rescind its notice of termination. If not, the termination for cause shall become effective at the end of the ten (10) day notice period without further notice to the Contractor. In the alternative, the Owner may, in writing, postpone the effective date of the termination for cause, at its sole discretion, if it should receive reassurances from the Contractor and/or its surety that the basis for the termination will be remedied in a time and manner which the Owner finds acceptable. If at any time after such postponement, the Owner determines that Contractor and/or its surety has not or is not likely to rectify the causes of termination in an acceptable manner or within the time allowed, then the Owner may immediately terminate the Contract for cause, without the necessity of further ten (10) day notice, by notifying the Contractor and his surety in writing of the termination. In no event shall termination for cause terminate the obligations of the Contractor's surety on its payment and performance bonds.
- (c) Upon termination of the Contract becoming effective, the Owner shall take possession of the Site and of all materials, tools and equipment thereon and shall proceed as follows:
 - (1) **No Security Provided:** If no security has been provided pursuant to Section 8 herein, the Owner shall finish the Work by whatever method he may deem expedient. If the expense of finishing the Work, including compensation for additional managerial and administrative services, shall exceed the unpaid balance of the Contract Price, the Contractor shall pay the difference to the Owner, together with any other expenses of terminating the Contract and having it completed by others.
 - (2) **Security Provided:** If security has been provided pursuant to Section 8 herein, the Owner shall provide Notice to the Surety that termination of the Contract became effective and proceed as set forth in the Standard Performance Bond, CO-10, Form DGS-30-084, and the Terms and Conditions therein. If the expense of finishing the Work, including compensation for additional managerial and administrative services, shall exceed the unpaid balance of the Contract Price and the penal amount of the Standard Performance Bond, the Contractor shall pay the difference to the Owner, together with any other expenses of terminating the Contract and having it completed by others.
- (d) If it should be judicially determined that the Owner improperly terminated this Contract for cause, then the termination shall be deemed to be a termination for the convenience of the Owner and the Contractor's rights and remedies shall be solely limited to those provided by Section 42 of these General Conditions.

- (e) Termination of the Contract under this Section is in addition to and without prejudice to any other right or remedy of the Owner. Any actions by the Owner permitted herein shall not be deemed a waiver of any other right or remedy of the Owner under the Contract or under the law. The Owner may offset any claims it may have against the Contractor against the amounts due to the Contractor. The provisions of this Section shall survive termination of the Contract.

42. TERMINATION BY OWNER FOR CONVENIENCE

- (a) The Owner may terminate this Contract, in whole or in part, at any time without cause upon giving the Contractor written notice of such termination in the manner provided in Section 1 (definition of "Notice") of these General Conditions. Upon such termination, the Contractor shall immediately cease Work and remove from the Site all of its labor forces, equipment and such of its materials as Owner elects not to purchase or to assume in the manner hereinafter provided. Upon such termination, the Contractor shall take such steps as Owner may require to assign to the Owner the Contractor's interest in all Subcontracts and purchase orders designated by Owner. After all such steps have been taken to Owner's satisfaction, the Contractor shall receive as full compensation for termination and assignment the following:
 - (1) Amounts due for Work performed in accordance with the Contract subsequent to the latest approved Schedule of Values and Certificate for Payment (Form CO-12) through the date of termination; and
 - (2) All amounts then otherwise due under the terms of this Contract associated with the Work performed prior to the date of termination; and
 - (3) Reasonable compensation for the actual cost of demobilization incurred by the Contractor as a direct result of such termination.

The Contractor shall not be entitled to any compensation or damages for lost profits or for any other type of contractual compensation or damages other than those provided in Subsection 42(a). The Owner may offset any claims it may have against the Contractor against the amounts due to the Contractor. Upon payment of the foregoing, Owner shall have no further obligations to Contractor of any nature. The Contractor agrees to waive all claims against the Owner for any consequential damages that may arise from or relate to the Owner's termination of the Contract including, but not limited to, damages for loss of revenue, income, profit, business, reputation, or bonding capacity.

- (b) In no event shall termination for the convenience of the Owner terminate the obligations of the Contractor's surety on its payment and performance bonds.
- (c) Any actions by the Owner permitted herein shall not be deemed a waiver of any other right or remedy of the Owner under the Contract or under the law. The provisions of this Section shall survive termination of the Contract.

43. DAMAGES FOR DELAYS; EXTENSION OF TIME

- (a) **Excusable Non-Compensable Delays:** If and to the extent that the Contractor is delayed at any time in the progress of the Work by strikes, fires, unusual delays in transportation or unavoidable casualties, or other causes outside the control of the Owner or the Contractor, with the exception of delays caused by weather provided for in Section 6, for which the Contractor intends to request an extension of either the Time for Completion or the Contract Completion Date, as the case may be, then the Contractor shall give the Owner and Architect/Engineer written notice of the delay within fourteen (14) days of the inception of the delay. The Contractor shall also give written notice to the Owner and Architect/Engineer of the termination of the delay not more than fourteen

(14) days after such termination. If the Owner agrees with the existence and the impact of the delay, the Owner shall extend the Time for Completion, the Contract Completion Date or Final Completion Date, as the case may be, for the length of time that the date for Substantial Completion or Final Completion was actually delayed thereby, and the Contractor shall not be charged with liquidated or actual damages for delay during the period of such extension nor shall the Contractor be due compensation or damages of any kind, under any theory of law, as a result of such delay, the impact of such delay, or acceleration of Work as a result of such delay. In the event a CPM schedule is required by the Contract, no extension of the Time for Completion or Contract Completion Date shall be granted unless the Contractor demonstrates a delay in the critical path of the approved CPM schedule or approved bar graph schedule.

- (b) **Excusable Compensable Delays:** If and to the extent that the Contractor is unreasonably delayed at any time in the progress of the Work by any acts or omissions of the Owner, its agents, or employees due to causes within the Owner's control, and the Contractor intends to request an extension of either the Time for Completion or the Contract Completion Date, as the case may be, and/or additional compensation for damages, if any, caused by the delay, then the Contractor shall notify the Owner and the Architect/Engineer immediately at the time of the occurrence giving rise to the delay by the fastest means available and shall give written notice no later than two (2) working days after inception of the delay. The Contractor's written notice shall specify the nature of the delay claimed by the Contractor, the cause of the delay, and the impact of the delay on the Contractor's Work schedule. The Owner shall then have three (3) working days to respond to the Contractor's notice with a resolution, remedy, direction to alleviate the delay, or rejection of the Contractor's notice of delay. The Owner's failure to respond within the time required shall be deemed to be a rejection of the Contractor's notice. The Contractor shall also give written notice to the Owner and Architect/Engineer of the termination of the delay not more than fourteen (14) days after such termination. If and to the extent that a delay is caused by or due to the Owner or A/E taking any actions permitted or required by the Contract, the Contractor shall be entitled to an extension of time or additional compensation only for the portion of the delay that is unreasonable, if any.
- (c) **Non-Excusable Non-Compensable Delays:** The Contractor shall not be entitled to an extension of the Time for Completion or Contract Completion Date or to any additional compensation for delays if and to the extent they are (1) caused by acts, omissions, fault, or negligence of the Contractor or his Subcontractors, agents or employees or due to foreseeable causes within their control, including, but not limited to, delays resulting from Defective Work including workmanship and/or materials, from rejected work which must be corrected before dependent work can proceed, from Defective Work or rejected work for which corrective action must be determined before like work can proceed, from incomplete, incorrect, or unacceptable Submittals or samples, or from the failure to furnish enough properly skilled workers, proper materials or necessary equipment to diligently perform the work in a timely manner in accordance with the Project schedule; or (2) due to causes that would entitle the Owner to recover delay costs or damages.
- (d) No extension of time or additional compensation, if applicable, will be granted for any delay unless the claimed delay directly affects the critical path of the approved CPM schedule or the schedule shown on the approved bar graph schedule, whichever is applicable, and any float has been consumed. No extension of time or additional compensation shall be given for a delay if the Contractor failed to give notice in the manner and within the time prescribed in Subsections 43(a) or (b) above, whichever applies. Furthermore, no extension of time or additional compensation shall be given for any delay unless a written request therefor is made in writing to the Owner, with a copy to the Architect/Engineer, within twenty (20) days of the end of the delay. The request shall state the cause of the delay, the number of days of extension requested, and any additional compensation requested by the Contractor. Failure to give written notice of either the inception or the termination of the cause of delay or failure to present a claim for extension of time and/or

monetary compensation within the times prescribed shall constitute a waiver of any claim for extension or additional compensation based upon that cause.

- (e) Requests for extensions of time and/or compensation for delays pursuant to Subsection 43(b) above must be substantiated by itemized data and records clearly showing that the Work delayed was on the critical path of the approved CPM schedule or on the sequence of Work on the approved bar graph schedule, as modified, whichever applies, and that the additional time and/or costs incurred by the Contractor are directly attributable to the delay in the Work claimed. Furthermore, compensation for delay shall be calculated from the contractual Time for Completion or Contract Completion Date, as adjusted by Change Order, and shall not be calculated based on any early completion planned or scheduled by the Contractor, unless a Change Order has been executed pursuant to Section 19(f) changing the Time for Completion or the Contract Completion Date to reflect such early completion. See Section 19 for procedures for the Contractor to follow if he plans early completion of the Work and wishes to request a Change Order reflecting the early completion date.

Agreed Compensation/Liquidated Damages for Owner Delay:

If and to the extent that the Contractor is entitled to an extension in the Time for Completion or the Contract Completion Date and additional compensation purely as a result of delay under Subsection 43(b) and not as a result of a change in the Work under Section 38, the agreed compensation and liquidated damages due the Contractor for days added to the Time for Completion or the Contract Completion Date for each day of such delay shall be the per diem expenses as determined from an itemized accounting of the direct Site overhead expenses and home office and other indirect overhead expenses only as specified in Subsections 38(e)(6)(i) and (ii). These expenses shall exclude any and all expenses specified in Subsection 38(f).

- (f) If the Contractor submits a claim for delay damages pursuant to Subsection 43(b) above, the Contractor shall be liable to the Owner for a percentage of all costs incurred by the Owner in investigating, analyzing, negotiating, and litigating or arbitrating the claim, which percentage shall be equal to the percentage of the Contractor's total delay claim which is determined through litigation or arbitration to be false or to have no basis in law or in fact. (§ 2.2-4335, *Code of Virginia*)
- (g) Any change in the Contract Time for Completion or Contract Completion Date shall be accomplished only by issuance of a Change Order.
- (h) **Agreed Compensation/Liquidated Damages for Contractor Delay:** If the Contractor fails to complete the Work within the Time for Completion or the Contract Completion Date, the Contractor shall be liable to the Owner in the amounts set forth in the Supplemental General Conditions, if any, not as a penalty, but as fixed, agreed, and liquidated damages for delay until the Work is substantially or finally completed as the case may be. If liquidated damages are not so fixed in the Supplemental General Conditions, the Contractor shall be liable for any and all actual damages sustained as a result of delay. In addition to damages for delay, whether liquidated or actual, the Contractor shall also be liable for any and all actual damages sustained by the Owner as a result of any other breach of the Contract, including, but not limited to, Defective Work and abandonment of the Contract.
- (i) If liquidated damages are provided by the Supplemental General Conditions, the following provisions apply:
 - (1) If the Work is not substantially complete by the Time for Completion or Contract Completion Date, the Contractor shall owe to the Owner, not as a penalty but as Step One liquidated damages, the sum stated in the Supplemental General Conditions for Step One

liquidated damages for each and every partial or total calendar day of delay in Substantial Completion.

- (2) Once the Work is substantially complete, the accrual of Step One liquidated damages shall cease and the Contractor shall have thirty (30) calendar days in which to achieve Final Completion of the Work.
 - (3) If Final Completion of the Work is not achieved on or before the thirtieth (30th) calendar day after Substantial Completion, and if the Owner has not granted any extension of time, the Contractor shall owe to the Owner, not as a penalty but as Step Two liquidated damages, the sum stated in the Supplemental General Conditions as Step Two liquidated damages for each and every partial or total calendar day of delay in Final Completion.
- (j) The Contractor waives any and all defenses as to the validity of any liquidated damage provisions in the General Conditions or other Contract Documents, or of any liquidated damages assessed against the Contractor, on the grounds that such damages are void as penalties or are not reasonably related to actual damages.

44. INSPECTION FOR SUBSTANTIAL COMPLETION & FINAL COMPLETION

- (a) The Contractor shall notify the Owner, in writing on the Certificate of Partial or Substantial Completion by the Contractor (Form CO-13.2a), of the date when the Work or designated portion thereof, will be, in his opinion, substantially complete and ready for inspection and testing to determine if it has reached Substantial Completion. The notice shall be given at least ten (10) days in advance of said date and shall be forwarded through the Architect/Engineer, who will attach his written endorsement as to whether or not he concurs with the Contractor's statement that the Work will be ready for inspection and testing on the date given. The Architect/Engineer's endorsement is a convenience to the Owner only and shall not relieve the Contractor of his responsibility in the matter nor shall the Architect/Engineer's endorsement be deemed to be evidence that the Work was substantially complete and ready for inspection and testing. Inspection and testing shall take place at a time(s) mutually agreeable to the Contractor, Owner and Architect/Engineer.

The inspection shall include a demonstration by the Contractor that all equipment, systems and operable components of the project function properly and in accordance with the Contract Documents. The Contractor shall furnish access for the inspection and testing as provided in Section 21 of these General Conditions. The inspection and testing shall determine whether Substantial Completion has been accomplished and shall result in a written list of unfinished Work and Defective Work, commonly referred to as a "punch list", which must be finished and corrected to obtain Final Completion.

After successful completion of the testing and the Architect / Engineer determines that, in its opinion, the Work, either in whole or in part, is substantially complete, the Architect / Engineer shall notify the Owner, in writing on the Certificate of Partial or Substantial Completion by the Architect/Engineer (Form CO-13.1a), that the Work, or a specified portion thereof, is recommended to be declared substantially complete. The Owner shall notify the Contractor, in writing, of the date the Owner accepts the Work, or the specified portion thereof, as substantially complete or the Owner shall notify the Contractor of the deficiencies to be corrected or completed before such Work will be accepted as substantially complete.

- (b) The Contractor shall notify the Owner, in writing on the Certificate of Completion by the Contractor (form CO-13.2), of the date when the Work has reached or will reach Final Completion and will be ready for final inspection and testing. The notice shall be given at least five (5) days in advance of said date and shall be forwarded through the Architect/Engineer, who will attach his endorsement as to whether or not he concurs in the Contractor's statement that the Work will be ready for inspection and testing on the date given. That inspection and any necessary testing shall be conducted in the same manner as the inspection for Substantial Completion. When the Work is

finally and totally complete, including the elimination of all defects, the Work shall be finally accepted by the Owner and Final Payment shall be made in accordance with Section 36 of these General Conditions.

- (c) The Architect/Engineer shall conduct the inspections. The Owner may elect to have other persons of its choosing also participate in the inspections. If one or more Substantial or Final Completion re-inspections are required, the Contractor shall reimburse the Owner for all costs of re-inspection or, at the Owner's option, the costs may be deducted from payments due to the Contractor.
- (d) A representative of the State Fire Marshal's Office will either be present at the Substantial and Final Completion inspections or otherwise inspect the completed Work and advise the Owner whether the Work meets the fire safety requirements of the applicable building code.
- (e) Approval of Work at or as a result of any inspection required herein shall not release the Contractor or his surety from responsibility for complying with the Contract.

45. GUARANTEE OF WORK

- (a) Except as otherwise specified, all Work shall be, and is hereby, guaranteed by the Contractor against defects resulting from the use of materials, equipment or workmanship, which are defective, inferior, or not in accordance with the terms of the Contract, for one (1) year from the date of Final Completion of the entire Project by the Owner. Equipment and facilities which have seasonal limitations on their operation (e.g. heating or air conditioning units) shall be guaranteed for one (1) full year from the date of seasonally appropriate tests and acceptance, in writing, by the Owner. Where the Owner agrees to take Beneficial Occupancy of a portion or phase of the Work which has been determined to be substantially complete before the entire Work is finally completed, the guarantees for the materials, equipment and workmanship in that portion or phase shall begin on the date that the Owner takes Beneficial Occupancy, unless otherwise specified in the Supplemental General Conditions, Special Conditions, or by separate agreement. At six (6) months and eleven (11) months after substantial completion, the Contractor shall meet with the Owner to review the status of and assign value to any unresolved warranty, guarantee, and punch list items.
- (b) If, within any guarantee period, Work which is not in accordance with the Contract, Defective Work, or inferior material, equipment or workmanship is noted by the Owner or Architect/Engineer which requires or renders necessary repairs or changes in connection with the guaranteed Work, the Contractor shall, promptly upon receipt of notice from the Owner, such notice being given not later than two weeks after the guarantee period expires, and without expense to the Owner:
 - (1) Place in satisfactory condition in every particular all of such guaranteed Work and correct all defects, inferior materials, equipment or workmanship therein;
 - (2) Make good all damage to the structure or Site or equipment or contents thereof, which, in the opinion of the Owner or the Architect/Engineer, is the result of the use of materials, equipment or workmanship which are inferior, defective or not in accordance with the terms of the Contract; and
 - (3) Make good any Work or materials or the equipment and contents of structures and/or Site disturbance that results from fulfilling the provisions of this Section.
- (c) In any case, when in fulfilling the requirements of the Contract and this guarantee or any other guaranty or warranty, the Contractor disturbs any work performed by a separate contractor, he shall restore such work to a condition satisfactory to the Architect/Engineer and Owner and guarantee such restored work to the same extent as if it was guaranteed under this Contract.

- (d) If the Contractor, after notice, fails to proceed promptly to comply with the terms of the guarantee as set forth in this Section, the Owner may have the defects or inferior materials, equipment or workmanship corrected and the Contractor and his surety shall be liable for all expense incurred.
- (e) All special warranties and guarantees applicable to definite parts of the Work that may be stipulated in or required by the Contract Documents shall be subject to the terms of this Section during the first year of the life of such special warranty or guarantee.
- (f) The guarantee of this Section shall be in addition to and not in lieu of all other warranties, express or implied, applicable to or arising from this Contract or by law.
- (g) Nothing contained in this Section shall be construed to establish a period of limitation with respect to any other obligation which the Contractor might have under the Contract Documents, including liability for Defective Work under Section 30. This Section relates only to the specific obligation of the Contractor as set forth in this Section to correct the Work and does not limit the time within which his obligation to comply with the Contract Documents may be sought to be enforced, nor the time within which proceedings may be commenced to establish the Contractor's liability with respect to his other obligations under the Contract Documents.
- (h) In the event the Work of the Contractor is to be modified by another contractor, either before or after the Final Inspection provided by Section 44 of the General Conditions, the first Contractor shall remain responsible in all respects under this Section's Guarantee of Work and under any other warranties or guarantees, express or implied, applicable to or arising from this Contract or by law. However, the Contractor shall not be responsible for any defects in material or workmanship introduced by the contractor modifying his Work. The first Contractor and the contractor making the modifications shall each be solely responsible for his respective work. The contractor modifying the earlier Work shall be responsible for any damage to or defect introduced into the Work by his modification. If the first contractor claims that a subsequent contractor has introduced defects of materials and/or workmanship into his Work, it shall be the burden of the contractor making the claim to demonstrate clearly the nature and extent of such introduced defects and the other contractor's responsibility for those defects. Any contractor modifying the work of another shall have the same burden if he asserts that defects in his work were caused by the contractor whose work he is modifying.
- (i) The Contractor shall indemnify and hold harmless the Commonwealth of Virginia, the Owner and the Owner's consultants, representatives, agents and employees from and against any and all claims, causes of action, losses, costs, expenses or damages, including but not limited to attorney's fees, of any kind or nature whatsoever, arising from or relating to any bodily injury, including sickness, disease or death, or any property damage, that result from or arise out of the work performed by the Contractor, or by or in consequence of any neglect in safeguarding the Work, through the use of unacceptable materials in the Work, or resulting from any act, omission, negligence, or misconduct of the Contractor, any of his subcontractors, anyone directly or indirectly employed by them or anyone for whose acts they may be liable. The Owner may retain as much of the moneys due the Contractor under the Contract as the Owner considers necessary to ensure that a fund will be available to pay a settlement or judgment of such suits, actions, or claims. If insufficient monies are or will become due, the Contractor's surety and/or insurers will not be released from liability until all such claims and actions have been settled and suitable evidence to that effect has been furnished the Owner.

46. ASSIGNMENTS

Neither party to the Contract shall assign the Contract in whole or any part without the written consent of the other, nor shall the Contractor assign any moneys due or to become due to him hereunder, without the prior written consent of the Owner. Consent to assignment shall not be unreasonably withheld. No assignment shall relieve any party from its obligations under the Contract.

47. **CONTRACTUAL DISPUTES (§ 2.2-4363, *Code of Virginia*)**

- (a) Contractual claims, whether for money or for other relief, shall be submitted, in writing, no later than sixty (60) days after Final Payment; however, written notice of the Contractor's intention to file such claim must be given within fourteen (14) days of the time of the occurrence or beginning of the Work upon which the claim is based. Such notice shall state that it is a "notice of intent to file a claim" and include a written statement describing the act or omission of the Owner or its agents that allegedly caused or may cause damage to the Contractor and the nature of the claimed damage. The submission of a timely notice is a prerequisite to recovery under this Section. Failure to submit such notice of intent within the time and in the manner required shall be a conclusive waiver of the claim by the Contractor. Oral notice, the Owner's actual knowledge, or a written notice given after the expiration of fourteen (14) days of time of the occurrence or beginning of the Work upon which the claim is based, shall not be sufficient to satisfy the requirements of this Section. Although the Contractor may be required to submit certain classes of claims prior to Final Payment, and the Contractor is not prevented from submitting claims during the pendency of the Work, the Owner shall not be obligated to render a final written decision on any claim until after Final Payment. All claims shall state that they are "claims" pursuant to this Section, be submitted along with all practically available supporting evidence and documentation and the certification required by Subsection 47(f), and request a final decision. Certificates for payment, applications for payment, vouchers, invoices and similar requests for payment submitted for work done by the Contractor in accordance with the expected contract performance are routine submissions and shall not be considered claims under this Section. Proposed or requested change orders, demands for money compensation or other relief, and correspondence and e-mails to the Owner or its representatives, which do not strictly comply with the requirements of this Section, shall not be considered claims under this Section.
- (b) No written decision denying a claim or addressing issues related to the claim shall be considered a denial pursuant to this Section unless the written decision makes express reference to this Section and is signed by the Agency head or his designee. The Contractor may not institute legal action prior to receipt of the Owner's final written decision on the claim unless the Owner fails to render such a decision within ninety (90) days of submission of the claim, at which time the claim shall be deemed denied.
- (c) The decision of the agency head or other signatory on the Contract shall be final and conclusive unless the Contractor within six (6) months of the date of the final decision on a claim, initiates legal action as provided in § 2.2-4364 of the *Code of Virginia*. Failure of the Owner to render a decision within 90 days shall not result in the Contractor being awarded the relief claimed nor shall it result in any other relief or penalty. The sole result of the Owner's failure to render a decision within 90 days shall be the Contractor's right to immediately institute legal action. No administrative appeals procedure pursuant to § 2.2-4365 of the *Code of Virginia* has been established for contractual claims under this Contract.
- (d) Pursuant to § 2.2-4366, Alternative Dispute Resolution, of the *Code of Virginia*, the Owner may enter into an agreement with the Contractor to submit disputes arising from the performance of this Contract to arbitration and utilize mediation and other alternative dispute resolution procedures. **However**, such procedures entered into by the Owner, the Commonwealth, or any department, institution, division, commission, board or bureau thereof, shall be non-binding and subject to § 2.2-514, as applicable.
- (e) In the event that a dispute, claim or controversy between the Owner and the Contractor arises regarding the requirements of the Contract, the performance of the Work, payment due the Contractor, the terms of any Change Order, or otherwise, the Contractor shall not stop, suspend or delay the Work or any part of the Work to be performed under the Contract, or under any Change Order, or as ordered by the Owner. The Contractor shall continue to diligently prosecute the Work to completion, including work required in any Change Order or as directed by the Owner.

- (f) Along with a claim submitted under this Section, the Contractor shall submit a Claim Certification Form (DGS-30-234) certifying that the claim is a true and accurate representation of the claim. Claims submitted without the Claim Certification Form shall not constitute a proper claim and, if not submitted with the certification within the time required, shall be deemed to be waived.
- (g) The remedies provided in these General Conditions, including costs, expenses, damages or extensions of time, shall be the Contractor's sole remedies for the acts, omissions or breaches of the Owner, which shall survive termination or breach of the Contract.

48. ASBESTOS

- (a) This subsection applies to projects involving existing buildings where asbestos abatement is not a part of the Work, when the scope of the project has been reviewed and a comprehensive survey conducted by an individual licensed by the Virginia Department of Professional and Occupational Regulation to conduct building inspections for asbestos containing materials in buildings, and where the Owner has attempted to remove or encapsulate all asbestos containing material that may become friable or damaged during this Project.

Prior to commencement of Work, the results of the comprehensive survey or any other asbestos survey shall be made available to the Contractor, who shall be responsible for performing his Work so as not to disturb any remaining asbestos, encapsulated or otherwise, identified in such survey or surveys.

If the Contractor discovers or inadvertently disturbs any material that he knows, should have known or has reason to believe, may contain asbestos that has not been previously identified, was overlooked during the removal, was deemed not to be friable or was encapsulated, the Contractor shall stop Work in the area containing or suspected to contain the asbestos, secure the area, and notify the Owner and the Architect/Engineer immediately by telephone or in person with written notice as soon as possible. The Owner will have the suspect material sampled.

If the sample is positive and must be disturbed in the course of the Work, the Owner shall have the material repaired or removed and shall pay for the bulk sample analysis.

Except as provided in § 11-4.1 of the *Code of Virginia*, if the material disturbed is not within the Contractor's authorized Work and/or Work area or under this Contract, the Contractor shall pay for all associated sampling and abatement costs.

- (b) If asbestos abatement is included as a part of the Work, the Contractor shall assure that the asbestos abatement work is accomplished by those duly licensed as described in Section 3 of these General Conditions and in accordance with the specific requirements of the Contract and all applicable laws and regulations.
- (c) If asbestos abatement is included as part of the Work, the licensed asbestos Subcontractor shall obtain the insurance required under Section 11 (e) of these General Conditions.

49. TRAINING, OPERATION AND MAINTENANCE OF EQUIPMENT

- (a) As a part of the Work, the Contractor in conjunction with his Subcontractors and Suppliers shall provide the Owner's operations and maintenance personnel with adequate instruction and training in the proper operation and maintenance of any equipment, systems, and related controls provided or altered in the Work. The training requirements may be further defined in the specifications.
- (b) The Contractor shall provide the Owner with a minimum of two (2) copies of operating, maintenance and parts manuals for all equipment and systems provided in the Work. Further specific requirements may be indicated in the specifications.

50. PROJECT MEETINGS

- (a) The intention of this Section is that the Contractor, the Owner and the A/E have timely exchange of information and cooperate to accomplish the Work as required by the Contract Documents. The Contractor is responsible for managing the Work, obtaining approvals and requesting clarifications on a timely, reasonable basis. The Owner and its A/E are responsible for making a reasonable effort to provide timely responses to the Contractor.

(b) **Preconstruction Meeting:**

Prior to the start of construction and no later than 15 calendar days after the Notice to Proceed, a "Preconstruction" meeting shall be held with attendees to include the Owner's Project Manager and Project Inspector, the Architect/Engineer's project manager and representatives of each design discipline involved in the Project, the Regional Fire Marshal, the Contractor's project manager and superintendent (and scheduler, if Contractor desires), and representatives of the Contractor's major Subcontractors. The purpose of the meeting is to clarify and discuss the specifics related to, but not limited to, the following:

- (1) Persons involved from each entity and their chain of authority including the names of persons authorized to sign Change Orders and any limits to their authority. Name of Contractor's on-site certified Responsible Land Disturber.
- (2) Names, addresses, telephone numbers and FAX numbers to be used for Requests for Information (RFI), Requests for Clarification (RFC), Requests for Proposals (RFP), shop drawings, Submittals, and notices.
- (3) Contractor's proposed construction schedule and Owner's sequencing requirements, if any.
- (4) Schedule of Values and Certificate for Payment (Form CO-12) requirements and procedures.
- (5) Procedures for shop drawings, product data and Submittals.
- (6) Procedures for handling Field Orders and Change Order Form CO-11.
- (7) Procedures for Contractor's request for time extension, if any.
- (8) Construction Site requirements, procedures and clarifications to include:
 - Manner of conducting the Work
 - Site specialties such as dust and erosion control, stormwater management, project signs, clean up and housekeeping, temporary facilities, utilities, security, and traffic
 - Safety
 - Layout of the Work
 - Quality control, testing, inspections, and notices required
 - Site visits by the A/E and others
 - Owner's Project Inspector duties
 - Running Punch List
 - As-Built Drawings
- (9) Procedures and documentation of differing or unforeseen Site conditions
- (10) Monthly Pay Meeting
- (11) Assignment of responsibility for generation of meeting minutes of all project meetings.
- (12) Project Close-Out requirements and procedures
- (13) Project records

(c) **Monthly Pay Meeting:**

Section 36 establishes the requirement for a monthly pay meeting which will usually be held at or near the Site. In addition to Owner, A/E and Contractor representatives, the following representatives, at a minimum, should be available to attend portions of the meeting, as applicable or necessary:

- Owner's Project Inspector
- Contractor's project superintendent
- A/E representative of each discipline where Work was performed for the current pay request or where Work is projected to be performed in the coming month.
- A representative of each subcontractor who performed work included in the current pay request.
- A representative of each subcontractor who is projected to perform work in the coming month.

The following topics should be included, as a minimum, in the monthly pay meeting:

- (1) Observations of status, quality and workmanship of Work in progress
- (2) Validation of the Schedule of Values and Certificate for payment
- (3) Conformance with proposed construction schedule
- (4) Outstanding Requests for Information, Requests for Clarification and Requests for Proposal
- (5) Submittals with action pending
- (6) Status of pending Change Orders
- (7) Status of Running Punch List items
- (8) Work proposed for coming pay period
- (9) Discussions of any problems or potential problems which need attention

(d) **Other Meetings:**

Requirements for other meetings, such as progress meetings, coordination meetings, pre-installation meetings and/or partnering meetings, may be included in the Contract Documents.

51. SMALL BUSINESS PROCUREMENT PLAN

The Owner has developed small business utilization requirements for increasing procurement from small businesses in its construction program. The Owner's small business requirements may, at the Owner's option, be included in the contract documents for use by the Contractor in developing its plan for involving small businesses through subcontracting, and through the purchasing of goods, materials, supplies and services in the Contractor's construction program. The Owner's plan provides requirements for the Contractor in developing a plan, for submitting its plan and for reporting its achievements in meeting the requirements established for the Contract.

If the Contractor is not a DSBSD certified small business, and the Contractor entered a small business participation percentage on the Bid Form, the Contractor shall, as soon as practicable after the posting of the Notice of Intent to Award but not later than 30 days after the effective date of the contract, provide a list of Subcontractors that are proposed to perform the work, including small business Subcontractors, vendors and suppliers showing their DSBSD certification numbers where applicable. Upon receipt of the list, the Owner may, based on the Agency small business procurement plan, require the Contractor to provide additional information on work that has been bid by small business Contractors, and areas in which the scope of work may be reduced in size to increase the pool of potential small business Contractors. Selection of particular Subcontractors for a certain part of the work shall be made in accord with Section 9, Subcontracts of the General Conditions.

*** END OF GENERAL CONDITIONS ***

SECTION 00250
PRE-BID QUESTION FORM

Date: _____

Project: **SONNY BOWMAN READING GARDEN**

All questions must be received in writing at least five (5) business days prior to the date fixed for receiving Bids. No questions will be received or answered via telephone call.

The following question concerns Project Manual Section No.: _____

The following question concerns Drawings, Sheet No.: _____

All responses to questions shall be by Addendum.

Question submitted by:

Name: _____

Organization & Phone/E-mail/Fax:

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SECTION 00400
BID FORM

DATE:

PROJECT: **SONNY BOWMAN READING GARDEN**

TO: Sandy Whitesides, Director
Shenandoah County Library System
514 Stoney Creek Blvd.
Edinburg, VA 22824
Ph. 540-984-8200

The undersigned proposes to furnish all labor and materials and perform all work necessary for construction of the referenced project, in strict accordance with all the Contract Documents, dated June 24, 2019 including items noted below, as prepared by Land Planning & Design Associates, Inc. for the consideration of the amounts shown on subsequent pages of this Section.

BIDDER accepts all terms and conditions of the advertisement of Invitation to Bid, the Instructions to Bidders, including without limitation those dealing with the disposition of Bid Security. This Bid will remain subject to acceptance for thirty (30) days after the day of Bid opening. BIDDER will sign and submit the Agreement with the Bonds and other documents required by the Bidding Requirements within ten (10) days after the date of SHENANDOAH COUNTY'S Notice of Award.

In submitting this bid, BIDDER represents—as more fully set forth in the Agreement—that:

1. BIDDER has examined copies of all Bidding Documents and of the following Addenda (receipt of which is hereby acknowledged):

Title	Date/Number
_____	_____
_____	_____
_____	_____
_____	_____

2. BIDDER has familiarized him/herself with the nature and extent of the Contract Documents, work, site, locality, and all local conditions and laws and regulations in any manner that may affect cost, progress, performance, or completion of work.

3. BIDDER has reviewed and checked all information and data shown or indicated on the Contract Documents with respect to existing underground facilities. No additional examination, investigations, explorations, tests, reports, or similar information or data in respect to said underground facilities are or will be required by BIDDER in order to perform and furnish the Work at the Contract Price, within the

Contract Time, and in accordance with the other terms and conditions of the Contract Documents.

4. BIDDER has correlated the results of all such observations, examinations, investigations, explorations, tests, reports, and studies with the terms and conditions of the Contract Documents.

5. BIDDER has given SHENANDOAH COUNTY written notice of all conflicts, errors, and/or discrepancies that it has discovered in the Contract Documents and the written resolution thereof by SHENANDOAH COUNTY is acceptable to the BIDDER.

This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm, or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization, or corporation. BIDDER has not directly or indirectly induced or solicited any person, firm, or corporation to refrain from bidding and BIDDER had not sought by collusion to obtain for itself any disadvantage over any other BIDDER or over SHENANDOAH COUNTY.

BIDDER understands the requirement for providing unit price/pay item proposals for all items within the proposal. BIDDER acknowledges that failure to provide unit prices for any items listed in this proposal may be grounds for rejection of BIDDER'S proposal.

In the event adjustments in either the plans or specifications are made, payment for all adjustments will be made according to unit prices for those affected individual items as listed in the Proposal. All items of work for which a specific bid item is not listed shall be subsidiary to the various bid items of which they form a component part. The successful BIDDER shall be compensated for any and all unforeseen conditions or items which may develop during construction not reasonably implied from the list of unit prices in this Bid which directly affect the completion of the installation based upon negotiations during construction.

Bid prices shall be as listed on the following pages.

BIDDER agrees to complete WORK as required under Contract Documents for the following prices:

BID SUMMARY

LUMP SUM TOTAL BASE BID INCLUDING INSURANCE, MOBILIZATION, TRANSPORTATION, TOOLS, CLEAN-UP AND REPAIR OF CONSTRUCTION DAMAGES AND ANY AND ALL RELATED AND TYPICALLY REQUIRED WORK, MATERIALS, EQUIPMENT, AND OTHER REQUIREMENTS TO CONSTRUCT COMPLETE AND READY-TO-USE FACILITIES. IF APPLICABLE, THIS APPLIES TO EACH BID ALTERNATE.

TOTAL BASE BID ITEMS

\$ _____

_____ Dollars and no/100

The undersigned understands that time is of the essence and agrees to the time for completion as specified in Section 00800 - Special Conditions, Item #6.

BID GUARANTEE in the sum of _____ in the form of _____ is submitted herewith in accordance with Instructions to Bidders.

If notice of acceptance of this bid is given to the undersigned within 30 days after the date of opening of bids, or any time thereafter before this bid is withdrawn, the undersigned will execute and deliver an Agreement in the prescribed form within ten (10) days after the Agreement has been presented to him for signature. The required bonds and certificates of insurance shall be furnished to the Owner prior to the execution of the Agreement.

I certify that the firm signing this bid and registered under that name is legally qualified to perform all work included in the scope of the Contract as determined by the Commonwealth of Virginia, Department of Commerce, State Board for Contractors, in granting the registration.

All information on this and the subsequent page must be completely filled in.

Sonny Bowman Reading Garden • Shenandoah County, VA

Licensed Class A Virginia Contractor No. _____

Bidder Name: _____

By (Signature): _____

(Printed or Typed): _____

Title: _____

Business Address: _____

Telephone Number: _____

e-mail Address: _____

Partnership: Names of Partners:

Joint Venture: Names of Firms participating in Joint Venture:

Corporation: State of Incorporation: _____

CERTIFICATION OF NO COLLUSION

The undersigned, acting on behalf of _____, does hereby certify in connection with the procurement and bid to which this Certification of No Collusion is attached that:

This bid is not the result of, or affected by, any act of collusion with another person engaged in the same line of business or commerce; nor is this bid the result of, or effected by, any act of fraud punishable under Article 1.1 of Chapter 12 of Title 18.2 of the Code of Virginia, 1950 as amended (Sec.18.2-498.1 et seq.)

Signature of Company Representative

Name of Company

Date

ACKNOWLEDGMENT

STATE OF VIRGINIA
Shenandoah County, to-wit:

The foregoing Certification of No Collusion bearing the signature of _____ and dated _____ was subscribed and sworn to before the undersigned notary public by _____ on _____.

Notary Public

My Commission expires: _____

CODE OF VIRGINIA

Sec.18.2-498.4 Duty to provide certified statement.

A. The Commonwealth, or any department or agency thereof, and any local government or any department or agency thereof, may require that any person seeking, offering or agreeing to transact business or commerce with it, or seeking, offering or agreeing to receive any portion of the public funds or moneys, submit a certification that the offer or agreement or any claim resulting therefrom is not the result of, or affected by, any act of business or commerce; or any act of fraud punishable under this article.

B. Any person required to submit a certified statement as provided in paragraph A above who knowingly makes a false statement shall be guilty of a Class 6 felony. (1980,c.472.)

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SECTION 00450

REFERENCES LIST

Indicate below a listing of at least three (3) current or recent client references, commercial, governmental, or private, that your company is servicing, has serviced, or has provided similar goods or services.

Reference #1

Company: _____ Contact Person: _____
Phone #: _____ Email: _____
Project: _____ Dates of Service: _____

Reference #2

Company: _____ Contact Person: _____
Phone #: _____ Email: _____
Project: _____ Dates of Service: _____

Reference #3

Company: _____ Contact Person: _____
Phone #: _____ Email: _____
Project: _____ Dates of Service: _____

COMPANY BACKGROUND

Number of Years in Business: _____

Overview of work history, experiences, and background of company:

**this document must be completed and returned with bid submission*

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**SECTION 600 –
STANDARD FORMS**

PART 1 - GENERAL

(A) GENERAL

- a. The following documents are hereby incorporated into the Contract Documents by reference. This is not a complete list and other Department of General Services (DGS) standard forms may be required as situations arise during the project.

Virginia DGS Forms -

CO-7 General Conditions of the Construction Contract

CO-9.1, Notice of Intent to Award

CO-9.2, Notice to Proceed

CO-9a, Workers Compensation Certificate of Insurance

CO-10, Standard Performance Bond

CO-10.2, Standard Bid Bond

CO-11, Change Order (for Construction Contract

CO-12, Schedule of Values and Certificate for Payment

CO-13.1, Certificate of Completion by A/E or Project Manager

CO-13.1a, Certificate of Substantial Completion by A/E

- b. Copies of standard DGS documents cited above and within this Project Manual can be purchased from the following sources:

Virginia Department of General Services

Virginia.gov/FormsCenter

- c. The documents listed above may be substituted for AIA standard documents or a form of the contractor's choosing, at the sole discretion and with written approval from the County or Owner.

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**COMMONWEALTH OF VIRGINIA
CONTRACT BETWEEN OWNER AND CONTRACTOR**

This Contract, dated this _____ day of _____, _____ between

_____ (“Owner”) and
_____ (“Contractor”),
is binding among and between these parties as of the date of the Owner’s signature.

RECITALS

1. The legal address for the Owner and for the Contractor and the addresses for delivery of Notices and other project documents are as follows:

Owner:

Attn:

Address:

City, State, Zip:

Telephone:

FAX:

Contractor:

Attn:

Address:

City, State, Zip:

Telephone:

FAX:

Contractor’s Virginia License #:

FEIN/SSN:

SCC ID #:

2. The Project is identified as:

Project Title:

Project Code – PC#:

General Project Description:

The Project Code (PC#) indicated above is required to be shown for identification purposes on all project-related material and documents including but not limited to, Notices, Change Orders, Submittals, Requests For Information, Requests For Quotes, Field Orders, minutes of meetings, correspondence, Schedule of Values and Certificate For Payment (Form CO-12), test reports, and related materials.

3. After competitive sealed bidding pursuant to the Virginia Public Procurement Act, Contractor is awarded this Contract to perform the Work described by the Contract Documents for the above-described project (“the Project”).

THEREFORE, in consideration of the Recitals set forth above, and good and valuable consideration as set forth below, the parties agree as follows:

1. STATEMENT OF WORK: The Contractor shall furnish all labor, equipment, and materials and perform all Work for the Project in strict accordance with the Contract Documents.

2. CONTRACT DOCUMENTS: This Contract shall consist of the following:

- this Contract Between Owner and Contractor (Form CO-9);
- the Bid Form submitted by the Contractor;
- Post Bid Modification(s), if any, dated _____;
- the General Conditions of the Construction Contract (Form CO-7), referred to as the “General Conditions”;
- the Supplemental General Conditions, if any;
- the Special Conditions attached to the Owner’s Invitation for Bids;
- the Owner’s Project Plans and Specifications dated _____;
-
-
-

All of these documents are incorporated herein by reference.

3. TIME FOR COMPLETION: The Work shall be commenced on a date to be specified in a written order of the Owner and shall be Substantially Completed within _____ calendar days or not later than the Contract Completion Date which is _____. The Work shall be finally completed within 28 days after the date of Substantial Completion of the Work.

4. COMPENSATION TO BE PAID TO THE CONTRACTOR: The Owner agrees to pay and the Contractor agrees to accept as just and adequate compensation for the performance of the Work in accordance with the Contract Documents the sum of _____ dollars (\$_____).

5. PAYMENTS: The procedures for establishing a Schedule of Values for the Work, for requesting monthly progress payments for Work in place, and for requesting payments for properly stored materials are stated in the General Conditions. Unless otherwise provided under the Contract Documents, interest on payments due the Contractor shall accrue at the rate of one percent per month. §2.2-4354 of the Code of Virginia.

eVA Vendor Registration: The bidder or offeror shall be a registered vendor in eVA. See the attached **eVA Vendor Registration Requirements**.

*GCPay: Contract payments **shall be** made through GCPay. Go to www.dgs.virginia.gov/deb to see the fee schedule and the instructions on how to process pay applications.*

6. CONTRACTUAL CLAIMS: Any contractual claims shall be submitted in accordance with the contractual dispute procedures set forth in Section 47 of the General Conditions and the supplemental instructions or procedures of the contracting State Agency, if any, attached to this Contract.

7. NON-DISCRIMINATION: § 2.2-4311 of the Code of Virginia applies to this contract. See Section 4 of the General Conditions.

8. AUTHORIZATION TO TRANSACT BUSINESS: The Contractor certifies that, if it is organized as a stock or nonstock corporation, limited liability company, business trust, or limited partnership or registered as a registered limited liability partnership, it is authorized to transact business in the Commonwealth as a domestic or foreign business entity if so required by Title 13.1 or Title 50 of the Code of Virginia, or as otherwise required by law, and shall not allow its existence to lapse or its certificate of authority or registration to transact business in the Commonwealth, if so required under Title 13.1 or Title 50, to be revoked or cancelled at any time during the term of the Contract. The Contractor understands and agrees that the Owner may void this Contract if the Contractor fails to comply with these provisions.

9. DEBARMENT AND ENJOINMENT: By signing contract, the undersigned certifies that this Contractor or any officer, director, partner or owner is not currently barred from bidding on contracts by any Agency of the Commonwealth of Virginia, or any public body or agency of another state, or any agency of the federal government, nor is this Contractor a subsidiary or affiliate of any firm/corporation that is currently barred from bidding on contracts by any of the same.

10. "ALL RISK" BUILDER'S RISK INSURANCE: *As this project is a modification to an existing building, in accordance with Section 12(b)- **Owner Controlled During Construction** of the General Conditions, the requirements of Section 12(a)- **Contractor Controlled During Construction** of the General Conditions do not apply.*

IN WITNESS WHEREOF, the parties hereto on the day and year written below have executed this agreement in three (3) counterparts, each of which shall, without proof or accountancy for the other counterparts, be deemed on original thereof.

For the CONTRACTOR:

For the OWNER:

By: _____
(signature in ink) *(date)*

By: _____
(signature in ink) *(date)*

(typed name)

(typed name)

(typed title)

(typed title)

Attest:

(signature in ink) *(date)*

Attest:

(signature in ink) *(date)*

Attachments:

- Bid Form Submitted by the Contractor
- Post Bid Modification, if any

SECTION 00800
SPECIAL CONDITIONS

1. In the event of a discrepancy or conflict between any other section of this Project Manual and the Special Conditions, the terms of the Special Conditions shall prevail. Any such conflict shall be brought to the attention of the Landscape Architect.
2. Drawings and/or Specifications - Any Additional Instructions by Landscape Architect and/or Owner to explain drawing and specifications shall be binding on Contractor. Contractor to obtain at least one (1) full-size hard copy of construction drawings, specification, and addenda at Contractor's expense.
3. Comprehensive and/or detailed documentation of existing conditions of the project area are not included. Therefore, prior to bid submission, the Contractor must visit and thoroughly examine the entire project area and the conditions under which the work is to be performed. No extras will be allowed for work resulting from the Contractor's failure to thoroughly examine existing conditions.
4. All forms, documents or statements included within this Project Manual that are intended to be completed by the Contractor, are included herein for reference only. Do not remove forms from this Project Manual. Obtain any and all necessary blank forms from the Owner's Representative. Photocopies of Owner produced forms are permissible.
5. Owner as contained in these notes and in related contract documents is contractually represented by Sandy Whitesides, Director, Shenandoah County Public Library. Other persons, though possibly employees of Shenandoah County, do not contractually represent the Owner.
6. Time is of the essence with respect to the completion of this project. The Contractor shall adequately staff the project to complete the work and to maintain a consistent level of performance within time set by the Contract Documents. The Contractor is responsible for the sequencing, scheduling, and coordinating of the Work, for monitoring the progress of the Work, and for taking appropriate action to keep the Work on schedule. Unless otherwise specified or extended by the Owner at the time of the signing of the Contract, the Contractor shall, within ten (10) consecutive calendar days after full execution of the Contract or date of Notice to Proceed, whichever is of the earlier date, prepare and submit to the Owner a **Preliminary Schedule** for accomplishing the Work based upon the completion time stated in the Contract. The Preliminary Schedule shall be shown in a Critical Path Method which can be periodically updated to reflect actual progress. Unless otherwise specified or extended by the Owner at the time of the signing of the Contract, the Contractor shall, within twenty (20) consecutive calendar days after full execution of the Contractor date of Notice to Proceed, whichever is of the earlier date, prepare and submit in a similar manner a **fully complete progress schedule** for accomplishing the Work. No progress payment will be payable to the Contractor until a preliminary schedule has been submitted which is acceptable to the Owner. Neither the second progress payment nor any subsequent payment shall be payable to the Contractor until the Contractor has submitted an approved fully complete progress schedule.

Sonny Bowman Reading Garden • Shenandoah County, VA

- 6.1 The Contractor shall incorporate these anticipated adverse weather delays in the scheduling of all weather-dependent activities:

FRONT ROYAL, VIRGINIA												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	8	8	9	9	10	10	9	8	10	6	8	8

*Monthly Contract Allowance (MCA), in calendar days.

Actual adverse weather delay days must prevent work on critical activities for fifty percent (50%) or more of the Contractor's scheduled work day. The number of actual adverse weather delay days shall include days impacted by actual adverse weather (even if adverse weather occurred in previous month), be calculated chronologically from the first to the last day of each month, and be recorded as full days. If the number of actual adverse weather days exceeds the number of days anticipated by the Monthly Contract Allowance above, and providing that all other contractually-required conditions are met, qualifying delays will be converted to calendar days and additional calendar days will be added to the Contract Time for each qualifying delay in excess of the Monthly Contract Allowance. For any prior month(s) in which the number of adverse weather delay days is (are) less than the specified "Monthly Contract Allowance," the Owner shall be credited with the difference between the "Monthly Contract Allowance" and the actual number of adverse weather delay days experienced in said prior month(s).

- 6.2 Upon commencement of on-site activities and continuing throughout construction, the Contractor shall record daily the occurrence of adverse weather and resultant impact to normally scheduled work. Within twenty-one (21) consecutive calendar days of the last day of any month (hereinafter referred to as the "Reporting Month"), Contractor shall submit a written adverse weather report, including copies of the Contractor's daily weather reports and applicable climatological data from the National Oceanic and Atmospheric Administration (NOAA) or similar data for the project location. Notwithstanding any other provisions, failure to submit the required written report within the time specified above shall be deemed to be and shall constitute a waiver by Contractor of any and all claims for delay due to adverse weather conditions occurring during said Reporting Month.

- 6.3 The Contractor's Construction Schedule shall meet or improve upon the following

Sonny Bowman Reading Garden • Shenandoah County, VA

calendar schedule as stipulated by the Owner:

Bid Advertisement	January 16, 2020
Optional Pre-Bid Meeting	January 24, 2020, 12:00pm
Construction Bids Due	February 7, 2020, 2:30pm
Contract Award/Notice to Proceed	February 18, 2020
Begin Construction	March 9, 2020
Substantial Completion	July 7, 2020
Final Completion	August 4, 2020

Time for substantial completion shall be 140 days from the notice to proceed.

- 6.4 For purposes of this Contract, Substantial Completion shall be achieved upon the Contractor's completion of all work specified by the Contract except that herbaceous plantings shall be considered substantially complete upon its proper installation; however, the Contractor shall retain full responsibility for its growth to maturity or as specified in the Project Manual.
- 6.5 If the Contractor shall neglect, fail, or refuse to achieve Substantial Completion within the time specified in the Contract, or within such further times as may be properly granted by the Owner in accordance with the provisions of the Contract and Project Manual, then the Contractor will be liable for additional **liquidated damages** in the amount of Three Hundred & Fifty Dollars (\$350.00) per calendar day. In addition, the sum of Three Hundred & Fifty Dollars (\$350.00) per calendar day will be charged to the Contractor for each day over 28 days from Substantial Completion that the punch list items remain unresolved. Extensions of time due to factors beyond the control of the Contractor shall be requested as defined in the Project Manual.
7. The successful Bidder shall execute a contract bond in the penalty of not less than 100 percent of the estimated amount of the Contract award. Said bond shall guarantee faithful performance of the work by the Contractor and indemnify Warren County from all claims from subcontractors or for any amount due on account of labor, material or services furnished to the project. No Contract shall be binding upon the County until such bond has been given and until the workers' compensation, liability and other insurance policies called for have been filed with the County and approved as to form and sufficiency by the County.
8. The Contractor shall conduct his operations in compliance with the regulations established by the Owner for construction site and personnel. The regulations shall include, but not be limited to the following:
- a. Worker Standards of Conduct/Dress - Hard-hats, safety shoes, appropriate safety equipment, shirts and pants are required at all times. Violence, Swearing, Drugs, Alcohol, Firearms and Weapons are prohibited on County property. Notwithstanding other legal recourse, workers violating these standards of conduct shall be ordered off the site and not allowed to return.
 - b. The Contractor shall provide all required health and sanitation fixtures including an OSHA approved source of drinking water and clean, well maintained toilet facilities.
 - c. If necessary, the Owner will provide points of connection and will pay for temporary electrical power and potable water. The Contractor shall be responsible for the safe

Sonny Bowman Reading Garden • Shenandoah County, VA

- d. distribution of same.
- d. On-site parking will not be available for construction personnel.
9. The Contractor shall effectively maintain care, custody and control of the site.
- a. The Contractor shall be solely responsible for providing adequate tree protection for trees scheduled to remain.
 - b. The Contractor shall be responsible for all sitework including establishing grades, identifying and locating existing underground services and locating new site improvements.
 - c. The Contractor shall be responsible for providing and maintaining all required safety barricades along trenches which may extend beyond the limits of the fenced work area. Such barricades shall remain in place and in good repair until authorized to be removed by the Owner's Representative. Work that extends onto private property shall be coordinated with the owner of that property.
10. The contractor is responsible for all local and state required permits.

DIVISION 01
GENERAL
REQUIREMENTS

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SECTION 012500 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.
- B. Refer to General Conditions for additional information on substitutions.

1.2 DEFINITIONS

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

1.3 ACTION SUBMITTALS

- A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Substitution Request Form: Use form approved by Owner and Landscape Architect.
 - 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
 - b. Coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.
 - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
 - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - e. Samples, where applicable or requested.
 - f. Certificates and qualification data, where applicable or requested.
 - g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
 - h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 - i. Research reports evidencing compliance with building code in effect for Project, from relevant organizations and agencies

- j. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
 - k. Cost information, including a proposal of change, if any, in the Contract Sum.
 - l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
 - m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
3. Landscape Architect's Action: If necessary, Landscape Architect will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Landscape Architect will notify Contractor through Construction Manager of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
- a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
 - b. Use product specified if Landscape Architect does not issue a decision on use of a proposed substitution within time allocated.

1.4 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.
 - 1. Conditions: Landscape Architect will consider Contractor's request for substitution when the following conditions are satisfied:
 - a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - b. Requested substitution provides sustainable design characteristics that specified product provided.
 - c. Requested substitution will not adversely affect Contractor's construction schedule.

- d. Requested substitution has received necessary approvals of authorities having jurisdiction.
 - e. Requested substitution is compatible with other portions of the Work.
 - f. Requested substitution has been coordinated with other portions of the Work.
 - g. Requested substitution provides specified warranty.
 - h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
- B. Substitutions for Convenience: Not allowed unless otherwise indicated.
- C. Substitutions for Convenience: Landscape Architect will consider requests for substitution if received within 20 days after the Notice to Proceed.
1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied:
- a. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
 - b. Requested substitution does not require extensive revisions to the Contract Documents.
 - c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - d. Requested substitution provides sustainable design characteristics that specified product provided.
 - e. Requested substitution will not adversely affect Contractor's construction schedule.
 - f. Requested substitution has received necessary approvals of authorities having jurisdiction.
 - g. Requested substitution is compatible with other portions of the Work.
 - h. Requested substitution has been coordinated with other portions of the Work.
 - i. Requested substitution provides specified warranty.
 - j. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

PART 3 - EXECUTION (Not Used)

END OF SECTION 012500

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SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for handling and processing Contract modifications.
- B. Refer to General Conditions 00210 in this Project Manual for additional requirements.

1.2 MINOR CHANGES IN THE WORK

- A. Landscape Architect will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on form approved by Owner and Landscape Architect.

1.3 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Landscape Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
 - 1. Work Change Proposal Requests issued by Landscape Architect are not instructions either to stop work in progress or to execute the proposed change.
 - 2. Within time specified in Proposal Request or 10 days, when not otherwise specified after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
 - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - c. Include costs of labor and supervision directly attributable to the change.
 - d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
 - e. Quotation Form: Use form acceptable to Owner and Landscape Architect.
- B. Contractor-Initiated Work Change Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Landscape Architect.

1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Include costs of labor and supervision directly attributable to the change.
5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
6. Comply with requirements in Section 012500 "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.
7. Work Change Proposal Request Form: Use form acceptable to Landscape Architect and Owner.

1.4 CHANGE ORDER PROCEDURES

- A. On Owner's approval of a Work Changes Proposal Request, Landscape Architect will issue a Change Order for signatures of Owner and Contractor on form acceptable to Owner and Landscape Architect.

1.5 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive: Landscape Architect may issue a Construction Change Directive on form acceptable to Owner and Landscape Architect. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
 1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.
- B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.
 1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012600

SECTION 012900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.
- B. Related Requirements:
 - 1. Section 012100 "Allowances" for procedural requirements governing the handling and processing of allowances.
 - 2. Refer to General Conditions 00210 in this Project Manual for additional requirements.

1.2 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.
 - 1. Coordinate line items in the schedule of values with other required administrative forms and schedules, including the following:
 - a. Application for Payment forms with continuation sheets.
 - b. Submittal schedule.
 - c. Items required to be indicated as separate activities in Contractor's construction schedule.
 - 2. Submit the schedule of values to Landscape Architect at earliest possible date but no later than ten days after the Notice to Proceed is issued.
 - 3. Subschedules for Phased Work: Where the Work is separated into phases requiring separately phased payments, provide subschedules showing values coordinated with each phase of payment.
- B. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.
 - 1. Identification: Include the following Project identification on the schedule of values:
 - a. Project name and location.
 - b. Name of Architect.
 - c. Architect's project number.
 - d. Contractor's name and address.
 - e. Date of submittal.
 - 2. Arrange schedule of values consistent with format of AIA Document G703.
 - 3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with Project

Manual table of contents. Provide multiple line items for principal subcontract amounts in excess of five percent of the Contract Sum.

- a. Include separate line items under principal subcontracts for Project closeout requirements in an amount totaling five percent of the Contract Sum and subcontract amount.
4. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
5. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
6. Provide separate line items in the schedule of values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
7. Allowances: Provide a separate line item in the schedule of values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.
8. Each item in the schedule of values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
 - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the schedule of values or distributed as general overhead expense, at Contractor's option.
9. Schedule Updating: Update and resubmit the schedule of values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.3 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by Landscape Architect and paid for by Owner.
 1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.
- B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.
- C. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 or forms acceptable to Owner and Landscape Architect as form for Applications for Payment.
- D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Landscape Architect will return incomplete applications without action.
 1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.

2. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
- E. Transmittal: Submit four signed and notarized original copies of each Application for Payment to Landscape Architect by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.
1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
 2. Applications for Payment may be submitted electronically to the Landscape Architect in Adobe PDF format. PDF must be a scan of the original, notarized Application for Payment.
- F. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from entities lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.
1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
 2. When an application shows completion of an item, submit conditional final or full waivers.
 3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
 4. Waiver Forms: Submit executed waivers of lien on forms acceptable to Owner.
- G. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
1. List of subcontractors.
 2. Schedule of values.
 3. Contractor's construction schedule (preliminary if not final).
 4. Schedule of unit prices.
 5. Submittal schedule (preliminary if not final).
 6. List of Contractor's staff assignments.
 7. List of Contractor's principal consultants.
 8. Copies of building, erosion and sediment control, land disturbance, stormwater, and any other applicable permits.
 9. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 10. Initial progress report.
 11. Report of preconstruction conference.
 12. Certificates of insurance and insurance policies.
- H. Application for Payment at Substantial Completion: After Landscape Architect issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.

2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- I. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
1. Evidence of completion of Project closeout requirements.
 2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
 3. Updated final statement, accounting for final changes to the Contract Sum.
 4. AIA Document G706-1994 or similar, "Contractor's Affidavit of Payment of Debts and Claims."
 5. AIA Document G706A-1994 or similar, "Contractor's Affidavit of Release of Liens."
 6. AIA Document G707-1994 or similar, "Consent of Surety to Final Payment."
 7. Evidence that claims have been settled.
 8. Final liquidated damages settlement statement.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.
- B. Refer to General Conditions in this Project Manual for additional requirements related to submittal procedures.

1.2 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Landscape Architect's responsive action.
- B. Informational Submittals: Written and graphic information and physical samples that do not require Landscape Architect's responsive action. Submittals may be rejected for not complying with requirements.

1.3 ACTION SUBMITTALS

- A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Landscape Architect and additional time for handling and reviewing submittals required by those corrections.

1.4 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- A. Landscape Architect's Digital Data Files: Electronic copies of digital data files of the Contract Drawings will not be provided by Landscape Architect for Contractor's use in preparing submittals.
 - 1. Landscape Architect will furnish Contractor one set of digital data drawing files of the Contract Drawings for use in preparing Shop Drawings.
 - a. Landscape Architect makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.
 - b. Data shall remain under control of the Contractor at all times and shall not be shared with other companies, entities, agencies, or organizations without prior consent by Landscape Architect. The information contained within the drawings in the intellectual property of the Landscape Architect and shall not be used, modified, or applied to any other project.

- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. Landscape Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Landscape Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Landscape Architect will advise Contractor when a submittal being processed must be delayed for coordination.
 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
 3. Resubmittal Review: Allow 15 days for review of each resubmittal.
- D. Paper Submittals: Place a permanent label or title block on each submittal item for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
 2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Landscape Architect.
 3. Include the following information for processing and recording action taken:
 - a. Project name.
 - b. Date.
 - c. Name of Architect.
 - d. Name of Construction Manager.
 - e. Name of Contractor.
 - f. Name of subcontractor.
 - g. Name of supplier.
 - h. Name of manufacturer.
 - i. Submittal number or other unique identifier, including revision identifier.
 - 1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 061000.01.A).
 - j. Number and title of appropriate Specification Section.
 - k. Drawing number and detail references, as appropriate.
 - l. Location(s) where product is to be installed, as appropriate.
 - m. Other necessary identification.

4. Additional Paper Copies: Unless additional copies are required for final submittal, and unless Landscape Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
 - a. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Landscape Architect.
 5. Transmittal for Paper Submittals: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect and Construction Manager will return without review submittals received from sources other than Contractor.
 - a. Transmittal Form for Paper Submittals: Use form acceptable to Owner and Landscape Architect.
 - b. Provide locations on form for the following information:
 - 1) Project name.
 - 2) Date.
 - 3) Destination (To:).
 - 4) Source (From:).
 - 5) Name and address of Architect.
 - 6) Name of Construction Manager.
 - 7) Name of Contractor.
 - 8) Name of firm or entity that prepared submittal.
 - 9) Names of subcontractor, manufacturer, and supplier.
 - 10) Category and type of submittal.
 - 11) Submittal purpose and description.
 - 12) Specification Section number and title.
 - 13) Specification paragraph number or drawing designation and generic name for each of multiple items.
 - 14) Drawing number and detail references, as appropriate.
 - 15) Indication of full or partial submittal.
 - 16) Transmittal number, numbered consecutively.
 - 17) Submittal and transmittal distribution record.
 - 18) Remarks.
 - 19) Signature of transmitter.
- E. Electronic Submittals: Identify and incorporate information in each electronic submittal file as follows:
1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
 2. Name file with submittal number or other unique identifier, including revision identifier.
 - a. File name shall use project identifier and Specification Section number followed by a decimal point and then a sequential number (e.g., LNHS-061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., LNHS-061000.01.A).

3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Landscape Architect.
 4. Transmittal Form for Electronic Submittals: Use electronic form acceptable to Owner, containing the following information:
 - a. Project name.
 - b. Date.
 - c. Name and address of Architect.
 - d. Name of Construction Manager.
 - e. Name of Contractor.
 - f. Name of firm or entity that prepared submittal.
 - g. Names of subcontractor, manufacturer, and supplier.
 - h. Category and type of submittal.
 - i. Submittal purpose and description.
 - j. Specification Section number and title.
 - k. Specification paragraph number or drawing designation and generic name for each of multiple items.
 - l. Drawing number and detail references, as appropriate.
 - m. Location(s) where product is to be installed, as appropriate.
 - n. Related physical samples submitted directly.
 - o. Indication of full or partial submittal.
 - p. Transmittal number, numbered consecutively.
 - q. Submittal and transmittal distribution record.
 - r. Other necessary identification.
 - s. Remarks.
- F. Options: Identify options requiring selection by Landscape Architect.
- G. Deviations: Identify deviations from the Contract Documents on submittals.
- H. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
 1. Note date and content of previous submittal.
 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
 3. Resubmit submittals until they are marked with approval notation from Landscape Architect's action stamp.
- I. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- J. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Landscape Architect's action stamp.

PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES

A. General Submittal Procedure Requirements:

1. Submit electronic submittals via email as Adobe PDF electronic files.
 - a. Landscape Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
2. Action Submittals: Submit three paper copies of each submittal unless otherwise indicated. Landscape Architect will return one copy.
3. Informational Submittals: Submit two paper copies of each submittal unless otherwise indicated. Landscape Architect will not return copies.
4. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
 - a. Provide a digital signature with digital certificate on electronically-submitted certificates and certifications where indicated.
 - b. Provide a notarized statement on original paper copy certificates and certifications where indicated.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:
 - a. Manufacturer's catalog cuts.
 - b. Manufacturer's product specifications.
 - c. Standard color charts.
 - d. Statement of compliance with specified referenced standards.
 - e. Testing by recognized testing agency.
 - f. Application of testing agency labels and seals.
 - g. Notation of coordination requirements.
 - h. Availability and delivery time information.
4. Submit Product Data before or concurrent with Samples.
5. Submit Product Data in the following format:
 - a. PDF electronic file, or
 - b. Three paper copies of Product Data unless otherwise indicated. Landscape Architect will return one copy.

- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data, unless submittal based on Landscape Architect's digital data drawing files is otherwise permitted.
1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
 - a. Identification of products.
 - b. Schedules.
 - c. Compliance with specified standards.
 - d. Notation of coordination requirements.
 - e. Notation of dimensions established by field measurement.
 - f. Relationship and attachment to adjoining construction clearly indicated.
 - g. Seal and signature of professional engineer if specified.
 2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches, but no larger than 30 by 42 inches .
 3. Submit Shop Drawings in the following format:
 - a. PDF electronic file.
 - b. Three opaque copies of each submittal. Landscape Architect will return one copy if notes or comments are required.
- D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
 2. Identification: Attach label on unexposed side of Samples that includes the following:
 - a. Generic description of Sample.
 - b. Product name and name of manufacturer.
 - c. Sample source.
 - d. Number and title of applicable Specification Section.
 3. For projects where electronic submittals are required, provide corresponding electronic submittal of Sample transmittal, digital image file illustrating Sample characteristics, and identification information for record.
 4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
 - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
 5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.

- a. Number of Samples: Submit one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Landscape Architect will return submittal with options selected.
6. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
- a. Number of Samples: Submit two sets of Samples. Landscape Architect will retain Sample sets.
 - 1) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.
- E. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
1. Submit product schedule in the following format:
 - a. PDF electronic file.
 - b. Three paper copies of product schedule or list unless otherwise indicated. Landscape Architect will return two copies.
- F. Application for Payment and Schedule of Values: Comply with requirements specified in Section 012900 "Payment Procedures.
- G. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Section 017700 "Closeout Procedures."
- H. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.
- I. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.
- J. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

- K. **Manufacturer Certificates:** Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- L. **Product Certificates:** Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- M. **Material Certificates:** Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- N. **Material Test Reports:** Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- O. **Product Test Reports:** Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- P. **Research Reports:** Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project.
- Q. **Preconstruction Test Reports:** Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
- R. **Compatibility Test Reports:** Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- S. **Field Test Reports:** Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
- T. **Design Data:** Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

2.2 DELEGATED-DESIGN SERVICES

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

- B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF electronic file and/or three paper copies of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
 - 1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Landscape Architect.
- B. Project Closeout and Maintenance Material Submittals: See requirements in Section 017700 "Closeout Procedures."
- C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 LANDSCAPE ARCHITECT'S ACTION

- A. General: Landscape Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Action Submittals: Landscape Architect will review each submittal, make marks to indicate corrections or revisions required, and return it. Landscape Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.
- C. Informational Submittals: Landscape Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Landscape Architect will forward each submittal to appropriate party.
- D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION 013300

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SECTION 01561 – EROSION AND SEDIMENTATION CONTROL

PART 1 - GENERAL

1.1 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.
- B. The latest edition of the Virginia Department of Conservation and Recreation's *Virginia Erosion and Sediment Control Handbook* (VESCH) and associated publications shall govern all other work not outlined in these specifications.
- C. Section 015639 "Temporary Tree and Plant Protection."

1.2 SUMMARY

- A. The work includes the provision of temporary and permanent erosion control measures to prevent the pollution of water and land within the project limits and in areas outside the project limits where work is accomplished in conjunction with the project.
- B. Refer to Section 02230 Site Clearing for information on trees to be retained and protected prior to construction.

1.3 SUBMITTALS

- A. Submit the following in accordance with Section 01330, "Submittal Procedures."
 - 1. Construction Sequence Schedule
 - a. Submit a Contractor-furnished construction work sequence schedule a minimum of 10 days prior to start of construction. The work schedule shall coordinate the timing of land disturbing activities with the provision of erosion control measures to reduce on-site erosion and off-site sedimentation. Installation of temporary erosion control features shall be coordinated with the construction of permanent erosion control features to assure effective and continuous control of erosion and pollution.
 - 2. Product Data
 - a. Submit a cut sheet and/or product data sheet for soil stabilization blanket and matting prior to installation for Landscape Architect's approval.

PART 2 - PRODUCTS

2.1 CONSTRUCTION ENTRANCE

- A. State Standard Temporary Stone Construction Entrance: VSWCC VESCH Standard 3.02 for full specifications.

1. Contractor shall inform Owner and Landscape Architect of intended construction entrance location at least 10 days prior to installing entrance.
2. Contractor shall install either a Light-Duty Entrance or Heavy-Duty Entrance, depending on which entrance will meet the minimum standards for the type of vehicles that will utilize the entrance. Refer to VSWCC VESCH Standard 3.02 Table 3.02-A for guidance.
3. The entrance shall be maintained in a condition that will prevent tracking or flow of mud onto public rights-of-way. This may require periodic top dressing with additional stone or the washing and reworking of existing stone as conditions demand and repair and/or cleanout of any structures used to trap sediment. All materials spilled, dropped, washed, or tracked from vehicles onto roadways or into storm drains must be removed immediately. The use of water trucks to remove materials dropped, washed, or tracked onto roadways will not be permitted under any circumstances.

2.2 SILT/SEDIMENT FENCE

- A. State Standard Sediment Fence: VSWCC VESCH Standard 3.05 for full specifications.
 1. Locate silt fence at least 5 to 7 feet beyond the base of disturbed slopes with grades greater than 7 percent.
 2. Silt fence shall be between 24 and 34 inches in height above existing grade and properly supported.
 3. Silt fence shall consist of a pervious sheet of propylene, nylon, polyester, or ethylene yarn and shall be certified by the manufacturer or supplier as conforming to the requirements noted in VSWCC VESCH Standard 3.05, Table 3.05-B.
 4. Silt fences shall be removed when they have served their useful purpose, but not before the upslope area has been permanently stabilized.

2.3 DROP INLET PROTECTION

- A. State Standard Silt Fence Drop Inlet Protection: VSWCC VESCH Standard 3.07 for full specifications.

2.4 TEMPORARY DIVERSION DIKE

- A. State Standard Temporary Diversion Dike: VSWCC VESCH Standard 3.09 for full specifications.
 1. Diversion Dike shall remain in place as a permanent fixture at the end of this project. During later development phases the diversion dike shall be replaced with a long term stormwater management solution.

2.5 LEVEL SPREADER

- A. State Standard Level Spreader: VSWCC VESCH Standard 3.21 for full specifications.

2.6 TEMPORARY SEEDING

- A. State Standard Temporary Seeding: Provide seed, lime, fertilizer, and mulch in accordance with VSWCC VESCH Standard 3.31.
- B. Refer to drawings for Temporary Seeding Mix.

2.7 PERMANENT SEEDING

- A. Refer to State Standard Permanent Seeding Specification 3.32 for full specification and seed quality criteria.
- B. Refer to drawings for Permanent Seeding Mix.

2.8 SOIL STABILIZATION BLANKETS & MATTING

- A. State Standard Blankets & Matting: See VSWCC VESCH Standard 3.36 for full specifications.
 - 1. Soil Stabilization shall be Treatment 1 or VDOT-equivalent EC-2 matting.
 - 2. Product shall be from VDOT's most current "Approved Products List" to ensure compliance with selected stabilization material prior to installation. Selected blankets and matting shall be appropriate up to or exceeding a 1:1.5 slope
 - 3. Refer to VESCH for full specifications regarding combination blankets, jute mesh, other Treatment 1 Products, and staples.
 - 4. Refer to VESCH for acceptable site preparation and installation specifications and details.
 - 5. Inspect blankets and matting periodically following installation, particularly after rainstorms to check for erosion and undermining. Repair and dislocation or failure immediately. Repair damage to slope or ditch before repairing blankets/matting.

2.9 TREE PROTECTION

- A. Refer to State Standard Tree Preservation & Protection Specification 3.38 for full specification.
- B. Protect all desirable trees as noted on drawing from mechanical and other injury during land disturbing and construction activities.
- C. At a minimum, the limits of clearing shall be located outside the drip line of any tree to be retained and in no case closer than 5 feet to the trunk of any tree.
- D. Refer to VESCH 3.38 for a list of prohibited activities near or within the dripline of trees to be protected prior to and during construction activities.

PART 3 - EXECUTION

3.1 GENERAL

- A. Refer to the Virginia Erosion and Sediment Control Handbook, latest edition for full documentation on proper erosion and sediment control device execution methods.

3.2 CONSTRUCTION SEQUENCE SCHEDULE

- A. Install construction entrances, tree protection, and perimeter silt fence prior to beginning any land disturbance. Begin grading operations. Where required on exposed slopes where the final grade will be steeper than 3:1, install EC-2 soil stabilization matting. Install inlet and outlet protection at all new culverts. Install riprap toe protection where indicated on drawings. Within 7 days of achieving final grade, install permanent seeding in all areas of disturbed earth that will not receive permanent riprap. Once entire site has stabilized and upon approval of erosion and sediment control inspector, remove all temporary controls. Apply permanent seeding where disturbed earth is exposed.
- B. Refer to drawings for additional information and requirements.

3.3 SILT/SEDIMENT FENCES

- A. Install posts at the spacing indicated and at an angle between 2 degrees and 20 degrees towards the potential silt load area. Sediment fence height shall be as indicated. Do not attach filter fabric to existing trees. Secure filter fabric to the post using staples, tie wire, or hog rings. Imbed the filter fabric into the ground as indicated. Splice filter fabric at support pole using a 6 inch overlap and securely seal.

3.4 CONSTRUCTION ENTRANCE

- A. Provide as indicated, a minimum of 6 inches thick, at points of vehicular ingress and egress on the Construction site. Construction entrances shall be cleared and grubbed, and then excavated a minimum of 3 inches prior to placement of the filter fabric and aggregate. The aggregate shall be placed in a manner that will prevent damage and movement of the fabric. Place fabric in one piece, where possible. Overlap fabric joints a minimum of 12 inches.

3.5 TEMPORARY SEEDING

- A. Time Restrictions: Within 48 hours after attaining the grading increment specified herein, provide seed, fertilizer, mulch and water on graded areas when any of the following conditions occur:
- B. Grading operations stop for an anticipated duration of 30 days or more.
- C. When it is impossible or impractical to bring an area to finish grade so that permanent seeding operations can be performed without serious disturbance from additional grading.
- D. When an immediate cover is required to minimize erosion, or when erosion has occurred.
- E. Provide on erosion control devices constructed using soil materials.

F. Seeding Requirements

1. State Standard Seeding Requirements: Provide seed, lime, and fertilizer in accordance with VSWCC VESCH Standard 3.31 and as indicated on Drawings. Provide hay or straw mulch in an air dried condition, and secure mulch in place.

G. Permanent Seeding

1. Temporary seeding shall be removed, and permanent seeding shall be provided during the specified planting season as specified in Section 02920 "Lawns and Grasses."

3.6 EROSION CONTROL MATTING

- A. Place matting in the direction of the flow of water. The up channel matting end shall be toed in a narrow trench a minimum of 5 inches deep. Where one roll of matting ends and a second roll begins, the end of the upper roll shall be brought over the buried end of the second roll, to provide a 6 inch overlap. Where matting widths are laid side by side, the overlap between matting shall be 4 inches. Provide check slots every 50 feet longitudinally in the matting. Construct check slots by providing a narrow trench 5 inches deep and folding the matting down in to the trench, across the bottom of the trench, and then back up the trench to the existing ground. Backfill and compact the trench using the excavated material from the trench. Staple matting ends, junctions, and check slots at 10 inches on center. Staple matting outer edges and overlaps and the center of each matting strip at 3 feet on center. Install excelsior matting with the woven fabric on top.

3.7 MAINTENANCE AND INSPECTION

- A. Inspect erosion control devices after each rainfall and daily during pro-longed rainfall. Remove sediment deposits after each rainfall or when sediment reaches approximately one-half the barrier height. Immediately repair damaged erosion control devices and damaged areas around and underneath the devices. Maintain erosion control devices to assure continued performance of their intended function. Modify the erosion control plan as required to control problem areas noticed after each inspection. Modifications shall be approved by the Owner or Owner's Representative.

3.8 CLEAN UP

- A. At the completion of the job, or when directed or approved by the Owner or Owner's Representative, temporary erosion control devices shall be removed. Erosion control devices, including but not limited to sediment traps and diversion dikes, and areas immediately adjacent to the devices shall be filled (where applicable), shaped to drain and to blend into the surrounding contours, and provided with permanent seeding. Erosion control devices may remain in place after job completion when approved by the Owner or Owner's Representative.

END OF SECTION 015610

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SECTION 015639 - TEMPORARY TREE AND PLANT PROTECTION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes general protection and pruning of existing trees that are affected by execution of the Work, whether temporary or permanent construction.

1.2 DEFINITIONS

- A. Protection Zone: Area surrounding individual trees to be protected during construction and indicated on Drawings.

1.3 INFORMATIONAL SUBMITTALS

- A. Certification: From arborist, certifying that trees indicated to remain have been protected during construction according to recognized standards and that trees were promptly and properly treated and repaired when damaged.

1.4 QUALITY ASSURANCE

- A. Arborist Qualifications: Certified Arborist as certified by ISA, licensed arborist in jurisdiction where Project is located, current member of ASCA, or registered Consulting Arborist as designated by ASCA.

1.5 PROJECT CONDITIONS

- A. The following practices are prohibited within protection zones:
 - 1. Storage of construction materials, debris, or excavated material.
 - 2. Parking vehicles or equipment.
 - 3. Foot traffic.
 - 4. Erection of sheds or structures.
 - 5. Impoundment of water.
 - 6. Excavation or other digging unless otherwise indicated.
 - 7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.
- B. Do not direct vehicle or equipment exhaust toward protection zones.
- C. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones and organic mulch.

PART 2 - PRODUCTS

2.1 MATERIALS

Retain first paragraph below for protection-zone fencing; delete if fence material is Contractor's option.

- A. Protection-Zone Fencing: Fencing fixed in position and meeting one of the following requirements. Previously used materials may be used when approved by Landscape Architect.
 - 2. Plastic Protection-Zone Fencing: Plastic construction fencing constructed of high-density extruded and stretched polyethylene fabric with 2-inch maximum opening in pattern and supported by tubular or T-shape galvanized-steel posts spaced not more than 96 inches apart. High-visibility orange color.
 - a. Height of Fencing: minimum 4 feet.
- B. Protection-Zone Signage: Shop-fabricated, rigid plastic or metal sheet with attachment holes prepunched and reinforced; legibly printed with nonfading lettering.

PART 3 - EXECUTION

3.1 EXAMINATION AND PREPARATION

- A. Erosion and Sedimentation Control: Examine the site to verify that temporary erosion-and sedimentation-control measures are in place. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.
- B. Protect tree root systems from damage caused by runoff or spillage of noxious materials while mixing, placing, or storing construction materials. Protect root systems from ponding, eroding, or excessive wetting caused by dewatering operations.
- C. Protection Zones: Mulch areas inside protection zones and other areas indicated with 4-inch average thickness of organic mulch. Do not place mulch within 6 inches of tree trunks.

3.2 PROTECTION ZONES

- A. Protection-Zone Fencing: Install protection-zone fencing along edges of protection zones in a manner that will prevent people from easily entering protected area except by entrance gates.
 - 1. Posts: Set or drive posts into ground one-third the total height of the fence without concrete footings. Where a post is located on existing paving or concrete to remain, provide appropriate means of post support acceptable to Landscape Architect.
- B. Protection-Zone Signage: Install protection-zone signage in visibly prominent locations in a manner approved by Landscape Architect.
- C. Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations, in a manner approved by Landscape Architect.

- D. Maintain protection-zone fencing and signage in good condition as acceptable to Landscape Architect and remove when construction operations are complete and equipment has been removed from the site.

3.3 EXCAVATION

- A. General: Excavate at edge of protection zones and for trenches indicated within protection zones according to requirements in Section 312000 "Earth Moving."
- B. Trenching near Trees: Where utility trenches are required within protection zones, hand excavate under or around tree roots or tunnel under the roots by drilling, auger boring, or pipe jacking. Do not cut main lateral tree roots or taproots; cut only smaller roots that interfere with installation of utilities. Cut roots as required for root pruning.
- C. Do not allow exposed roots to dry out before placing permanent backfill.

3.4 ROOT PRUNING

- A. Prune roots that are affected by temporary and permanent construction. Do not prune roots without prior approval from Owner and Landscape Architect. Prune roots as follows:
 - 1. Cut roots manually by digging a trench and cutting exposed roots with sharp pruning instruments; do not break, tear, chop, or slant the cuts. Do not use a backhoe or other equipment that rips, tears, or pulls roots.
 - 2. Temporarily support and protect roots from damage until they are permanently covered with soil.
 - 3. Cover exposed roots with burlap and water regularly.
 - 4. Backfill as soon as possible according to requirements in Section 312000 "Earth Moving."
- B. Root Pruning at Edge of Protection Zone: Prune roots by cleanly cutting all roots to the depth of the required excavation.
- C. Root Pruning within Protection Zone: Clear and excavate by hand to the depth of the required excavation 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.

3.5 REGRADING

- A. Lowering Grade: Where new finish grade is indicated below existing grade around trees, slope grade beyond the protection zone. Maintain existing grades within the protection zone.
- B. Raising Grade: Where new finish grade is indicated above existing grade around trees, slope grade beyond the protection zone. Maintain existing grades within the protection zone.
- C. Minor Fill within Protection Zone: Where existing grade is 2 inches or less below elevation of finish grade, fill with topsoil. Place topsoil in a single uncompacted layer and hand grade to required finish elevations.

3.7 REPAIR AND REPLACEMENT

- A. General: Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations, in a manner approved by Landscape Architect.
 - 1. Treat damaged trunks, limbs, and roots according to arborist's written instructions.
 - 2. Perform repairs within 24 hours.
 - 3. Replace vegetation that cannot be repaired and restored to full-growth status, as determined by Landscape Architect.

3.8 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Disposal: Remove excess excavated material, displaced trees, trash and debris, and legally dispose of them off Owner's property.

END OF SECTION 015639

SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 - 1. Substantial Completion procedures.
 - 2. Final completion procedures.
 - 3. Warranties.
 - 4. Final cleaning.
 - 5. Repair of the Work.
- B. Related Requirements:
 - 1. Section 012900 "Payment Procedures" for requirements for Applications for Payment for Substantial and Final Completion.
 - 2. See Divisions 2 through 16 Sections for specific closeout and special cleaning requirements for the Work in those Sections
 - 3. Refer to Section 0210 General Conditions for additional information about closeout procedures.

1.2 ACTION SUBMITTALS

- A. Product Data: For cleaning agents.
- B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.
- C. Certified List of Incomplete Items: Final submittal at Final Completion.

1.3 CLOSEOUT SUBMITTALS

- A. Certificates of Release: From authorities having jurisdiction.
- B. Certificate of Insurance: For continuing coverage.

1.4 MAINTENANCE MATERIAL SUBMITTALS

- A. Schedule of Maintenance Material Items: For maintenance material submittal items specified in other Sections.

1.5 SUBSTANTIAL COMPLETION PROCEDURES

- A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.
- B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, property surveys, and similar final record information.
 3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 4. Submit test/adjust/balance records.
 5. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
 6. Advise Owner of pending insurance changeover requirements.
 7. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
 8. Complete startup and testing of systems and equipment.
 9. Perform preventive maintenance on equipment used prior to Substantial Completion.
 10. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
 11. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
 12. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 13. Complete final cleaning requirements, including touchup painting.
 14. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- C. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of **10** days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Landscape Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Landscape Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Landscape Architect, that must be completed or corrected before certificate will be issued.
1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
 2. Results of completed inspection will form the basis of requirements for final completion.

1.6 FINAL COMPLETION PROCEDURES

- A. Preliminary Procedures: Before requesting final inspection for determining final completion, complete the following:
 - 1. Submit a final Application for Payment according to Section 012900 "Payment Procedures."
 - 2. Certified List of Incomplete Items: Submit certified copy of Landscape Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Landscape Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 - 3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 - 4. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
- B. Inspection: Submit a written request for final inspection to determine acceptance. On receipt of request, Landscape Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Landscape Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
 - 1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.7 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
 - 1. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
 - 2. Submit three paper copies of list of incomplete items.

1.8 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties on request of Landscape Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated, or when delay in submittal of warranties might limit Owner's rights under warranty.
- B. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
 - 1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.

2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:
 - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
 - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - e. Remove snow and ice to provide safe access to building.
 - f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
 - g. Remove labels that are not permanent.

- h. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
- i. Leave Project clean and ready for occupancy.

3.2 REPAIR OF THE WORK

- A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.
- B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.
 - 1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
 - 2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that already show evidence of repair or restoration.
 - a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.
 - 3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
 - 4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

END OF SECTION 017700

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DIVISION 02
DEMOLITION

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SECTION 024119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Demolition and removal of selected site elements.
 - 2. Salvage of existing items to be reused or recycled.

1.2 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.
- B. Remove and Salvage: Carefully detach from existing construction, in a manner to prevent damage, and deliver to Owner ready for reuse.
- C. Remove and Reinstall: Detach items from existing construction, prepare for reuse, and reinstall where indicated.
- D. Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.3 PREINSTALLATION MEETINGS

- A. Pre-demolition Conference: Conduct conference at Project site.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For refrigerant recovery technician.

1.5 CLOSEOUT SUBMITTALS

- A. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

1.6 FIELD CONDITIONS

- A. Owner will occupy portions of site immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.

- B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- C. Notify Landscape Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
 - 1. If suspected hazardous materials are encountered, do not disturb; immediately notify Landscape Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.
- E. Storage or sale of removed items or materials on-site is not permitted.
- F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

1.7 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- C. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Landscape Architect.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.
- B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.
 - 1. Owner will arrange to shut off indicated services/systems when requested by Contractor.
 - 2. Arrange to shut off indicated utilities with utility companies.

3.3 PREPARATION

- A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
- B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

3.4 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
 - 1. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
 - 2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 - 3. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
 - 4. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 - 5. Dispose of demolished items and materials promptly.
- B. Removed and Reinstalled Items:
 - 1. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
- C. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition.

3.5 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site.
 - 1. Do not allow demolished materials to accumulate on-site.
 - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning: Do not burn demolished materials.
- C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.6 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 024119

DIVISION 04
MASONRY

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SECTION 044313.16 - ADHERED STONE MASONRY VENEER

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Stone masonry adhered to unit masonry backup.

1.2 ACTION SUBMITTALS

A. Product Data: For each variety of stone, stone accessory, and manufactured product.

B. Samples:

1. For each stone type indicated.
2. For each color of mortar required.

1.3 FIELD CONDITIONS

A. Protection of Stone Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work.

B. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Comply with cold-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.

1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F and above and will remain so until masonry has dried.

C. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.

PART 2 - PRODUCTS

2.1 LIMESTONE

A. Material Standard: Comply with ASTM C 568.

B. Varieties and Sources: Subject to compliance with requirements, available stone varieties that may be incorporated into the Work include, but are not limited to, the following:

1. Limestone veneer to be 1-1/2 inch thick natural stone veneer. Color to be gray full range.

2. Limestone for Garden Wall to be natural building stone, minimum 4 inches thick. Color to be gray full range.
3. Limestone for Seat Wall to be natural building stone, approximately 3 inches thick. Color to be gray full range.

2.2 MORTAR MATERIALS

- A. Portland Cement: ASTM C 150, Type I or Type II, except Type III may be used for cold-weather construction; natural color or white cement may be used as required to produce mortar color indicated.
 1. Low-Alkali Cement: Not more than 0.60 percent total alkali when tested according to ASTM C 114.
- B. Aggregate: ASTM C 144 and as follows:
 1. For pointing mortar, use aggregate graded with 100 percent passing No. 16 (1.18-mm) sieve.
 2. White Aggregates: Natural white sand or ground white stone.
- C. Water: Potable.

2.3 EMBEDDED FLASHING MATERIALS

- A. Metal Flashing: Provide metal flashing where flashing is exposed or partly exposed and where indicated, complying with SMACNA's "Architectural Sheet Metal Manual," Section 076200 "Sheet Metal Flashing and Trim" and as follows:
 1. Stainless Steel: ASTM A 240/A 240M, Type 304, 0.016 inch thick.

2.4 MISCELLANEOUS MASONRY ACCESSORIES

- A. Cementitious Damp-proofing for Limestone: Cementitious formulation recommended by ILI and nonstaining to stone, compatible with joint sealants, and noncorrosive to veneer anchors and attachments.

2.5 FABRICATION

- A. Select and cut stone to produce pieces of thickness, size, and shape indicated, including details on Drawings and pattern specified in "Setting Stone Masonry" Article.
 1. Shape stone specified to be laid in three-course, random range ashlar pattern with sawed beds.
- B. Gage backs of stones for adhered veneer if more than 81 sq. inch area.
- C. Thickness of Stone: Provide thickness indicated, but not less than the following:

1. Veneer Thickness: 1-1/2 inches plus or minus 1/4 inch.
 2. Building Stone Thickness: 4 inches minimum
 3. Seat Wall Stone Thickness: 3 inches minimum plus or minus 1/2 inch.
- D. Finish exposed stone faces and edges to comply with requirements indicated for finish and to match approved samples.
1. Finish: Natural cleft.

2.6 MORTAR MIXES

- A. General: Do not use admixtures unless otherwise indicated.
1. Do not use calcium chloride.
 2. Use portland cement-lime mortar unless otherwise indicated.
- B. Color: To be selected by Landscape Architect or Owner from Manufacturer's full range.

PART 3 - EXECUTION

3.1 SETTING STONE MASONRY

- A. Perform necessary field cutting and trimming as stone is set.
1. Use power saws to cut stone that is fabricated with saw-cut surfaces.
- B. Sort stone before it is placed in wall to remove stone that does not comply with requirements relating to aesthetic effects, physical properties, or fabrication, or that is otherwise unsuitable for intended use.
- C. Arrange stones with color and size variations uniformly dispersed for an evenly blended appearance.
- D. Maintain uniform joint widths except for variations due to different stone sizes and where minor variations are required to maintain bond alignment if any. Lay walls with joints not less than 1/4 inch at narrowest points or more than 1/2 inch at widest points.

3.2 CONSTRUCTION TOLERANCES

Tolerances in this article are based on those published by BIA for unit masonry and are generally appropriate for natural-cleft or smooth finished stone. Revise to suit Project or delete for fieldstone or for rustic finished stone.

- A. Variation from Plumb: For vertical lines and surfaces, do not exceed 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2 inch in 40 feet or more. For external corners, expansion joints, control

joints, and other conspicuous lines, do not exceed 1/4 inch in 20 feet or 1/2 inch in 40 feet or more.

- B. Variation from Level: For bed joints and lines of exposed lintels, sills, parapets, horizontal grooves, and other conspicuous lines, do not exceed 1/4 inch in 20 feet or 1/2 inch in 40 feet or more.

3.3 INSTALLATION OF ADHERED STONE MASONRY VENEER

- A. Install lath over unit masonry and concrete to comply with ASTM C 1063.
- B. Install scratch coat over metal lath 3/8 inch thick to comply with ASTM C 926.
- C. Coat backs of stone units and face of scratch coat with cement-paste bond coat, then butter both surfaces with setting mortar. Use sufficient setting mortar so a slight excess will be forced out the edges of stone units as they are set. Tap units into place, completely filling space between units and scratch coat.
- D. Rake out joints for pointing with mortar to depth of not less than 1 inch before setting mortar has hardened. Rake joints to uniform depths with square bottoms and clean sides.

3.4 POINTING

- A. Prepare stone-joint surfaces for pointing with mortar by removing dust and mortar particles. Where setting mortar was removed to depths greater than surrounding areas, apply pointing mortar in layers not more than 1 inch deep until a uniform depth is formed.
- B. Point stone joints by placing and compacting pointing mortar in layers of not more than 1 inch deep. Compact each layer thoroughly and allow to it become thumbprint hard before applying next layer.

3.5 ADJUSTING AND CLEANING

- A. In-Progress Cleaning: Clean stone masonry as work progresses. Remove mortar fins and smears before tooling joints.
- B. Final Cleaning: After mortar is thoroughly set and cured, clean stone masonry as follows:
 1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
 2. Test cleaning methods on mockup; leave one-half of panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before cleaning stone masonry.
 3. Protect adjacent stone and nonmasonry surfaces from contact with cleaner by covering them with liquid strippable masking agent, polyethylene film, or waterproof masking tape.
 4. Wet wall surfaces with water before applying cleaner; remove cleaner promptly by rinsing thoroughly with clear water.
 5. Clean stone masonry by bucket and brush hand-cleaning method described in BIA Technical Note No. 20, Revised II, using job-mixed detergent solution.

6. Clean stone masonry with proprietary acidic cleaner applied according to manufacturer's written instructions.
7. Clean limestone masonry to comply with recommendations in ILI's "Indiana Limestone Handbook."

3.6 EXCESS MATERIALS AND WASTE

- A. Excess Stone: Stack excess stone where directed by Owner for Owner's use.
- B. Disposal as Fill Material: Dispose of clean masonry waste, including mortar and excess or soil-contaminated sand, by crushing and mixing with fill material as fill is placed.
 1. Do not dispose of masonry waste as fill within 18 inches of finished grade.

END OF SECTION 044313.16

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DIVISION 05
METALS

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SECTION 055000 - METAL FABRICATIONS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Miscellaneous steel framing and supports.
2. Prefabricated building columns.
3. Shelf angles.
4. Miscellaneous steel trim.
5. Loose bearing and leveling plates.

B. Products furnished, but not installed, under this Section include the following:

1. Anchor bolts, steel pipe sleeves, slotted-channel inserts, and wedge-type inserts indicated to be cast into concrete or built into unit masonry.
2. Steel weld plates and angles for casting into concrete for applications where they are not specified in other Sections.

1.2 ACTION SUBMITTALS

A. Product Data: For the following:

1. Prefabricated building columns.
2. Metal nosings and treads.
3. Paint products.
4. Grout.

B. Shop Drawings: Show fabrication and installation details. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items.

C. Samples for Verification: For each type and finish of extruded nosing and tread.

D. Delegated-Design Submittal: For ladders, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- ##### A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design ladders.

- B. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes acting on exterior metal fabrications by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects.
 - 1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

2.2 METALS

- A. Metal Surfaces, General: Provide materials with smooth, flat surfaces unless otherwise indicated. For metal fabrications exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.
- B. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
- C. Stainless-Steel Bars and Shapes: ASTM A 276, Type 304.
- D. Steel Tubing: ASTM A 500/A 500M, cold-formed steel tubing.
- E. Slotted Channel Framing: Cold-formed metal box channels (struts) complying with MFMA-4.

2.3 FASTENERS

- A. General: Unless otherwise indicated, provide Type 304 stainless-steel fasteners for exterior use and zinc-plated fasteners with coating complying with ASTM B 633, Class Fe/Zn 5, at exterior walls. Select fasteners for type, grade, and class required.
- B. Cast-in-Place Anchors in Concrete: Either threaded type or wedge type unless otherwise indicated; galvanized ferrous castings, either ASTM A 47/A 47M malleable iron or ASTM A 27/A 27M cast steel. Provide bolts, washers, and shims as needed, all hot-dip galvanized per ASTM F 2329.
- C. Post-Installed Anchors: Torque-controlled expansion anchors or chemical anchors.
 - 1. Material for Exterior Locations and Where Stainless Steel Is Indicated: Alloy Group 1 stainless-steel bolts, ASTM F 593, and nuts, ASTM F 594.
- D. Slotted-Channel Inserts: Cold-formed, hot-dip galvanized-steel box channels (struts) complying with MFMA-4, 1-5/8 by 7/8 inches by length indicated with anchor straps or studs not less than 3 inches long at not more than 8 inches o.c. Provide with temporary filler and tee-head bolts, complete with washers and nuts, all zinc-plated to comply with ASTM B 633, Class Fe/Zn 5, as needed for fastening to inserts.

2.4 MISCELLANEOUS MATERIALS

- A. Shop Primers: Provide primers that comply with Section 099113 "Exterior Painting."
- B. Universal Shop Primer: Fast-curing, lead and chromate-free, universal modified-alkyd primer complying with MPI#79 and compatible with topcoat.

1. Use primer containing pigments that make it easily distinguishable from zinc-rich primer.
- C. Water-Based Primer: Emulsion type, anticorrosive primer for mildly corrosive environments that is resistant to flash rusting when applied to cleaned steel, complying with MPI#107 and compatible with topcoat.
- D. Epoxy Zinc-Rich Primer: Complying with MPI#20 and compatible with topcoat.
- E. Galvanizing Repair Paint: High-zinc-dust-content paint complying with SSPC-Paint 20 and compatible with paints specified to be used over it.
- F. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187/D 1187M.
- G. Non-shrink, Nonmetallic Grout: Factory-packaged, non-staining, noncorrosive, nongaseous grout complying with ASTM C 1107/C 1107M. Provide grout specifically recommended by manufacturer for interior and exterior applications.
- H. Concrete: Comply with requirements in Section 033000 "Cast-in-Place Concrete" for normal-weight, air-entrained, concrete with a minimum 28-day compressive strength of 3000 psi.

2.5 FABRICATION, GENERAL

- A. Shop Assembly: Preassemble items in the shop to greatest extent possible. Use connections that maintain structural value of joined pieces.
- B. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges. Remove sharp or rough areas on exposed surfaces.
- C. Weld corners and seams continuously to comply with the following:
 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 2. Obtain fusion without undercut or overlap.
 3. Remove welding flux immediately.
 4. At exposed connections, finish exposed welds and surfaces smooth and blended.
- D. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners or welds where possible. Locate joints where least conspicuous.
- E. Fabricate seams and other connections that are exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.
- F. Where units are indicated to be cast into concrete or built into masonry, equip with integrally welded steel strap anchors not less than 8 inches from ends and corners of units and 24 inches o.c.

2.6 MISCELLANEOUS FRAMING AND SUPPORTS

- A. General: Provide steel framing and supports not specified in other Sections as needed to complete the Work.

- B. Fabricate units from steel shapes, plates, and bars of welded construction unless otherwise indicated. Fabricate to sizes, shapes, and profiles indicated and as necessary to receive adjacent construction.
- C. Fabricate steel girders for wood frame construction from continuous steel shapes of sizes indicated.
 - 1. Where wood nailers are attached to girders with bolts or lag screws, drill or punch holes at 24 inches o.c.
- D. Fabricate steel pipe columns for supporting wood frame construction from steel pipe with steel baseplates and top plates as indicated. Drill or punch baseplates and top plates for anchor and connection bolts and weld to pipe with fillet welds all around. Make welds the same size as pipe wall thickness unless otherwise indicated.

2.7 PREFABRICATED BUILDING COLUMNS

- A. General: Provide prefabricated building columns consisting of load-bearing structural-steel members protected by concrete fireproofing encased in an outer non-load-bearing steel shell. Fabricate connections to comply with details shown or as needed to suit type of structure indicated.
- B. Fire-Resistance Ratings: Provide prefabricated building columns listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction for ratings indicated, based on testing according to ASTM E 119.
 - 1. Fire-Resistance Rating: 2 hours.

2.8 SHELF ANGLES

- A. Fabricate shelf angles from steel angles of sizes indicated and for attachment to concrete framing. Provide horizontally slotted holes to receive 3/4-inch bolts, spaced not more than 6 inches from ends and 24 inches o.c., unless otherwise indicated.
- B. For cavity walls, provide vertical channel brackets to support angles from backup masonry and concrete.
- C. Galvanize shelf angles located in exterior walls.
- D. Prime shelf angles located in exterior walls with zinc-rich primer.
- E. Furnish wedge-type concrete inserts, complete with fasteners, to attach shelf angles to cast-in-place concrete.

2.9 MISCELLANEOUS STEEL TRIM

- A. Unless otherwise indicated, fabricate units from steel shapes, plates, and bars of profiles shown with continuously welded joints and smooth exposed edges. Miter corners and use concealed field splices where possible.

- B. Provide cutouts, fittings, and anchorages as needed to coordinate assembly and installation with other work.
- C. Galvanize exterior miscellaneous steel trim.
- D. Prime exterior miscellaneous steel trim with zinc-rich primer.

2.10 LOOSE BEARING AND LEVELING PLATES

- A. Provide loose bearing and leveling plates for steel items bearing on masonry or concrete construction. Drill plates to receive anchor bolts and for grouting.

2.11 LOOSE STEEL LINTELS

- A. Fabricate loose steel lintels from steel angles and shapes of size indicated for openings and recesses in masonry walls and partitions at locations indicated.
- B. Galvanize loose steel lintels located in exterior walls.
- C. Prime loose steel lintels located in exterior walls with zinc-rich primer.

2.12 STEEL WELD PLATES AND ANGLES

- A. Provide steel weld plates and angles not specified in other Sections, for items supported from concrete construction as needed to complete the Work. Provide each unit with no fewer than two integrally welded steel strap anchors for embedding in concrete.

2.13 FINISHES, GENERAL

- A. Finish metal fabrications after assembly.

2.14 STEEL AND IRON FINISHES

- A. Galvanizing: Hot-dip galvanize items as indicated to comply with ASTM A 153/A 153M for steel and iron hardware and with ASTM A 123/A 123M for other steel and iron products.
- B. Shop prime iron and steel items not indicated to be galvanized unless they are to be embedded in concrete, sprayed-on fireproofing, or masonry, or unless otherwise indicated.
 - 1. Shop prime with universal shop primer or primers specified in Section 099113 "Exterior Painting" unless zinc-rich primer is indicated.
- C. Preparation for Shop Priming: Prepare surfaces to comply with SSPC-SP 6/NACE No. 3 "Commercial Blast Cleaning." SSPC-SP 3, "Power Tool Cleaning" requirements indicated below:
 - 1. Exterior Items: SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."

2. Items Indicated to Receive Zinc-Rich Primer: SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
 3. Items Indicated to Receive Primers Specified in Section 099600 "High-Performance Coatings": SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
 4. Other Items: SSPC-SP 3, "Power Tool Cleaning."
- D. Shop Priming: Apply shop primer to comply with SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting.
- E. Paint: Apply two coats of Matte Black Matthews Acrylic Polyurethane.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.
- B. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.
- C. Field Welding: Comply with the following requirements:
1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 2. Obtain fusion without undercut or overlap.
 3. Remove welding flux immediately.
 4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
- D. Fastening to In-Place Construction: Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction.
- E. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.

3.2 INSTALLING BEARING AND LEVELING PLATES

- A. Clean concrete and masonry bearing surfaces of bond-reducing materials and roughen to improve bond to surfaces. Clean bottom surface of plates.
- B. Set bearing and leveling plates on wedges, shims, or leveling nuts. After bearing members have been positioned and plumbed, tighten anchor bolts. Do not remove wedges or shims but, if

protruding, cut off flush with edge of bearing plate before packing with non-shrink grout. Pack grout solidly between bearing surfaces and plates to ensure that no voids remain.

3.3 ADJUSTING AND CLEANING

- A. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas. Paint uncoated and abraded areas with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.
- B. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780/A 780M.

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DIVISION 06
WOOD

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SECTION 061533 - WOOD STRUCTURES AND DECKING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Wood construction for pergolas and faux bridge.

1.2 ACTION SUBMITTALS

A. Product Data: For preservative-treated wood products and metal framing anchors.

1.3 INFORMATIONAL SUBMITTALS

A. Material Certificates:

1. For lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by ALSC's Board of Review.
2. For preservative-treated wood products. Indicate type of preservative used and net amount of preservative retained.

B. Evaluation Reports: For the following, from ICC-ES:

1. Preservative-treated wood products.
2. Expansion anchors.
3. Metal framing anchors.
4. Decking fasteners.

PART 2 - PRODUCTS

2.1 LUMBER, GENERAL

A. Comply with DOC PS 20 and with grading rules of lumber grading agencies certified by ALSC's Board of Review as applicable. If no grading agency is indicated, comply with the applicable rules of any rules-writing agency certified by ALSC's Board of Review.

1. Factory mark each item with grade stamp of grading agency.
2. For items that are exposed to view in the completed Work, mark grade stamp on end or back of each piece.
3. Provide dressed lumber, S4S, unless otherwise indicated.

B. Maximum Moisture Content:

1. Boards: 19 percent.
2. Dimension Lumber: 19 percent.
3. Timber. 19 percent.

2.2 WOOD DECKING

- A. Dimension Lumber Decking: No. 1 grade and the following species:
1. Southern pine; SPIB.

2.3 DIMENSION LUMBER FRAMING

- A. Deck Framing: No. 1 grade and the following species:
1. Southern pine; SPIB.
 2. Western red cedar, Commercial DEX; WCLIB

2.4 WOOD RAILINGS

- A. Dimensional Lumber Railing Members: No. 1 grade and the following species:
1. Southern pine; SPIB.
 2. Western red cedar, Commercial DEX; WCLIB

2.5 POSTS

- A. Dimension Lumber Posts: No. 2 grade and the following species:
1. Southern pine; SPIB.
 2. Western red cedar, Commercial DEX; WCLIB

2.6 PRESERVATIVE TREATMENT

- A. Pressure treat boards and dimension lumber with waterborne preservative according to AWWA U1; Use Category UC3b for exterior construction not in contact with the ground, and Use Category UC4a for items in contact with the ground.
- B. Preservative Chemicals: Acceptable to authorities having jurisdiction.
1. Do not use chemicals containing arsenic or chromium, except for timber posts.
- C. Use process that does not include water repellent treatment.
- D. Use process that does not include water repellents or other substances that might interfere with application of indicated finishes.
- E. After treatment, redry boards and dimension lumber to 19 percent maximum moisture content.

- F. Mark treated wood with treatment quality mark of an inspection agency approved by ALSC's Board of Review.
 - 1. For items indicated to receive a stained or natural finish, mark each piece on surface that will not be exposed or omit marking and provide certificates of treatment compliance issued by inspection agency.
- G. Application: Treat items indicated on the Drawings except for Western Red Cedar.

2.7 WOOD STAIN

- A. Outdoor rated, semi-transparent polyurethane stain, red cedar color.
- B. Outdoor rated, semi-opaque polyurethane stain, dark slate color.

2.8 FASTENERS

- A. General: Provide fasteners of size and type indicated, acceptable to authorities having jurisdiction, and that comply with requirements specified in this article for material and manufacture. Provide nails or screws, in sufficient length, to penetrate not less than 1-1/2 inches into wood substrate.
 - 1. Use fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M or ASTM F 2329 unless otherwise indicated.
- B. Postinstalled Anchors: Stainless-steel, chemical or torque-controlled expansion anchors with capability to sustain, without failure, a load equal to 6 times the load imposed when installed in unit masonry assemblies and equal to 4 times the load imposed when installed in concrete as determined by testing according to ASTM E 488 conducted by a qualified independent testing and inspecting agency.
 - 1. Stainless-steel bolts and nuts complying with ASTM F 593 and ASTM F 594, Alloy Group 1 or 2.

2.9 METAL FRAMING ANCHORS

- A. Manufacturers: Basis of design products are manufactured by Simpson Strong-Tie Co. Subject to compliance with requirements, provide the basis of design products or equal products by the following:
 - 1. Cleveland Steel Specialty Co.
 - 2. Phoenix Metal Products, Inc.
 - 3. Simpson Strong-Tie Co., Inc.
 - 4. USP Structural Connectors.
- B. Allowable Design Loads: Provide products with allowable design loads, as published by manufacturer, that meet or exceed those of basis-of-design products. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.

- C. Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A 653/A 653M, G90 coating designation.
- D. Stainless-Steel Sheet: ASTM A 666, Type 304.

2.10 CONCEALED DECKING FASTENERS

- A. Deck Splines: Corrosion-resistant metal or plastic splines that fit in grooves routed into the sides of decking material and are fastened to deck framing with screws. Splines provide uniform spacing of decking material.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Blue Heron Enterprises, LLC; Eb-Ty Hidden Deck-Fastener.
 - b. Grabber Construction Products; Deck Clip.
 - c. KK Mfg. Co., Inc; Lumber Loc Hidden Deck Fasteners.
 - d. M. M. Products, Inc; Invisi-Fast Biscuit.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Set work to required levels and lines, with members plumb, true to line, cut, and fitted. Fit work to other construction; scribe and cope as needed for accurate fit.
- B. Framing Standard: Comply with AF&PA WCD1 unless otherwise indicated.
- C. Install wood decking with crown up (bark side down).
- D. Secure decking to framing with concealed fasteners.
- E. Install metal framing anchors to comply with manufacturer's written instructions.
- F. Do not splice structural members between supports unless otherwise indicated.
- G. Apply copper naphthenate field treatment to comply with AWWPA M4, to cut surfaces of preservative-treated lumber.
- H. Securely attach exterior rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
 - 1. ICC-ES AC70 for power-driven fasteners.
 - 2. "Fastening Schedule" in ICC's International Building Code.
 - 3. "Fastener Schedule for Structural Members" and "Alternate Attachments" in ICC's International Residential Code for One- and Two-Family Dwellings.

3.2 ELEVATED DECK JOIST FRAMING INSTALLATION

- A. General: Install joists with crown edge up and support ends of each member with not less than 1-1/2 inches of bearing on wood or metal, or 3 inches on masonry. Attach floor joists where framed into wood supporting members by using wood ledgers as indicated or, if not indicated, by using metal joist hangers. Do not notch joists.

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DIVISION 12
FURNISHINGS

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SECTION 129300 - SITE FURNISHINGS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Benches.
 - 2. Swinging Benches
 - 3. Arbor

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each exposed product and for each color and texture specified.

1.3 CLOSEOUT SUBMITTALS

- A. Maintenance data.

PART 2 - PRODUCTS

2.1 BENCHES

- A. Subject to compliance with requirements, use the following as a basis of design:
 - 1. Victor Stanley, City Sites Series C-12, 6 foot length
- B. Frame: Steel.
- C. Seat and Back:
 - 1. Material:
 - a. Wood Slats – IPE Standard
 - b. Color: Brown
 - 2. Arms: Two, one at each end
 - a. Arm Material: Match frame.
 - 3. Seating Configuration: Multiple units as indicated.

D. Steel Finish: Powder coated.

1. Color: Black

2.2 SWINGING BENCH

A. Subject to compliance with requirements, use the following as a basis of design:

1. All Things Cedar Bristol Red Cedar Porch Swing. Manufacturer: The Porch Swing Company.

- a. Material: Clear Grain Western Red Cedar
- b. Length: 5 ft.

2.3 ARBOR

A. Subject to compliance with requirements, use the following as a basis of design:

1. New England Arbors Westwood Arch Arbor

- a. Material: Cedar
- b. Style: Gable

2.4 MATERIALS

B. Aluminum: Alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated; free of surface blemishes and complying with the following:

- 1. Rolled or Cold-Finished Bars, Rods, and Wire: ASTM B 211.
- 2. Extruded Bars, Rods, Wire, Profiles, and Tubes: ASTM B 221.
- 3. Structural Pipe and Tube: ASTM B 429/B 429M.
- 4. Sheet and Plate: ASTM B 209.
- 5. Castings: ASTM B 26/B 26M.

C. Steel and Iron: Free of surface blemishes and complying with the following:

- 1. Plates, Shapes, and Bars: ASTM A 36/A 36M.
- 2. Steel Pipe: Standard-weight steel pipe complying with ASTM A 53/A 53M, or electric-resistance-welded pipe complying with ASTM A 135/A 135M.
- 3. Tubing: Cold-formed steel tubing complying with ASTM A 500/A 500M.
- 4. Mechanical Tubing: Cold-rolled, electric-resistance-welded carbon or alloy steel tubing complying with ASTM A 513/A 513M, or steel tubing fabricated from steel complying with ASTM A 1011/A 1011M and complying with dimensional tolerances in ASTM A 500/A 500M; zinc coated internally and externally.
- 5. Sheet: Commercial steel sheet complying with ASTM A 1011/A 1011M.
- 6. Expanded Metal: Carbon-steel sheets, deburred after expansion, and complying with ASTM F 1267.
- 7. Malleable-Iron Castings: ASTM A 47/A 47M, grade as recommended by fabricator for type of use intended.
- 8. Gray-Iron Castings: ASTM A 48/A 48M, Class 200.

- D. Stainless Steel: Free of surface blemishes and complying with the following:
 - 1. Sheet, Strip, Plate, and Flat Bars: ASTM A 666.
 - 2. Pipe: Schedule 40 steel pipe complying with ASTM A 312/A 312M.
 - 3. Tubing: ASTM A 554.
- E. Anchors, Fasteners, Fittings, and Hardware: Zinc-plated steel; commercial quality, concealed, recessed, and capped or plugged.
 - 1. Angle Anchors: For inconspicuously bolting legs of site furnishings to below-grade substrate; extent as indicated.
 - 2. Antitheft Hold-Down Brackets: For securing site furnishings to substrate; extent as indicated on Drawings.
- F. Nonshrink, Nonmetallic Grout: Premixed, factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107/C 1107M; recommended in writing by manufacturer, for exterior applications.
- G. Erosion-Resistant Anchoring Cement: Factory-packaged, nonshrink, nonstaining, hydraulic-controlled expansion cement formulation for mixing with potable water at Project site to create pourable anchoring, patching, and grouting compound; resistant to erosion from water exposure without needing protection by a sealer or waterproof coating; recommended in writing by manufacturer, for exterior applications.
- H. Galvanizing: Where indicated for steel and iron components, provide the following protective zinc coating applied to components after fabrication:
 - 1. Zinc-Coated Tubing: External, zinc with organic overcoat, consisting of a minimum of 0.9 oz./sq. ft. of zinc after welding, a chromate conversion coating, and a clear, polymer film. Internal, same as external or consisting of 81 percent zinc pigmented coating, not less than 0.3 mil thick.
 - 2. Hot-Dip Galvanizing: According to ASTM A 123/A 123M, ASTM A 153/A 153M, or ASTM A 924/A 924M.

2.5 FABRICATION

- A. Metal Components: Form to required shapes and sizes with true, consistent curves, lines, and angles. Separate metals from dissimilar materials to prevent electrolytic action.
- B. Welded Connections: Weld connections continuously. Weld solid members with full-length, full-penetration welds and hollow members with full-circumference welds. At exposed connections, finish surfaces smooth and blended, so no roughness or unevenness shows after finishing and welded surface matches contours of adjoining surfaces.
- C. Pipes and Tubes: Form simple and compound curves by bending members in jigs to produce uniform curvature for each repetitive configuration required; maintain cylindrical cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of handrail and railing components.

- D. Preservative-Treated Wood Components: Complete fabrication of treated items before treatment if possible. If cut after treatment, apply field treatment complying with AWWA M4 to cut surfaces.
- E. Exposed Surfaces: Polished, sanded, or otherwise finished; all surfaces smooth, free of burrs, barbs, splinters, and sharpness; all edges and ends rolled, rounded, or capped.
- F. Factory Assembly: Factory assemble components to greatest extent possible to minimize field assembly. Clearly mark units for assembly in the field.

2.6 ALUMINUM FINISHES

- A. Powder-Coat Finish: Manufacturer's standard polyester powder-coat finish complying with finish manufacturer's written instructions for surface preparation, including pretreatment, application, baking, and minimum dry film thickness.

2.7 STEEL AND GALVANIZED-STEEL FINISHES

- A. Powder-Coat Finish: Manufacturer's standard polyester, powder-coat finish complying with finish manufacturer's written instructions for surface preparation, including pretreatment, application, baking, and minimum dry film thickness.
- B. PVC Finish: Manufacturer's standard, UV-light stabilized, mold-resistant, slip-resistant, matte-textured, dipped or sprayed-on, PVC-plastisol finish, with flame retardant added; complying with coating manufacturer's written instructions for pretreatment, application, and minimum dry film thickness.

2.8 IRON FINISHES

- A. Powder-Coat Finish: Manufacturer's standard polyester powder-coat finish complying with finish manufacturer's written instructions for surface preparation, including pretreatment, application, baking, and minimum dry film thickness.

2.9 STAINLESS-STEEL FINISHES

- A. Surface Preparation: Remove tool and die marks and stretch lines, or blend into finish.
- B. Polished Finishes: Grind and polish surfaces to produce uniform finish, free of cross scratches.
 - 1. Run directional finishes with long dimension of each piece.
 - 2. Directional Satin Finish: No. 4.
 - 3. Dull Satin Finish: No. 6.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Comply with manufacturer's written installation instructions unless more stringent requirements are indicated. Complete field assembly of site furnishings where required.
- B. Unless otherwise indicated, install site furnishings after landscaping and paving have been completed.
- C. Install site furnishings level, plumb, true, and securely anchored at locations indicated on Drawings.
- D. Post Setting: Set cast-in support posts in concrete footing with smooth top, shaped to shed water. Protect portion of posts above footing from concrete splatter. Verify that posts are set plumb or at correct angle and are aligned and at correct height and spacing. Hold posts in position during placement and finishing operations until concrete is sufficiently cured.
- E. Posts Set into Voids in Concrete: Form or core-drill holes for installing posts in concrete to depth recommended in writing by manufacturer of site furnishings and 3/4 inch larger than OD of post. Clean holes of loose material, insert posts, and fill annular space between post and concrete with nonshrink, nonmetallic grout or anchoring cement, mixed and placed to comply with anchoring material manufacturer's written instructions, with top smoothed and shaped to shed water.
- F. Pipe Sleeves: Use steel pipe sleeves preset and anchored into concrete for installing posts. After posts have been inserted into sleeves, fill annular space between post and sleeve with nonshrink, nonmetallic grout or anchoring cement, mixed and placed to comply with anchoring material manufacturer's written instructions, with top smoothed and shaped to shed water.

END OF SECTION 129300

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DIVISION 31
EARTHWORK

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SECTION 311000 - SITE CLEARING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

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

1.2 PREINSTALLATION MEETINGS

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

1.3 MATERIAL OWNERSHIP

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

1.4 FIELD 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 trafficways if required by Owner or authorities having jurisdiction.
- B. Salvageable Improvements: Carefully remove items indicated to be salvaged and store on Owner's premises>.
- C. Utility Locator Service: Notify utility locator service for area where Project is located before site clearing.
- D. Do not commence site clearing operations until temporary erosion- and sedimentation-control and plant-protection measures are in place.
- E. Tree and Plant Protection Zones: Protect according to requirements in Section 015639 "Temporary Tree and Plant Protection."

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Satisfactory Soil Material: Requirements for satisfactory soil material are specified in Section 312000 "Earth Moving."
 - 1. Obtain approved borrow soil material off-site when satisfactory soil material is not available on-site.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect and maintain benchmarks and survey control points from disturbance during construction.
- B. Verify that trees, shrubs, and other vegetation to remain or to be relocated have been flagged and that protection zones have been identified and enclosed according to requirements in Section 015639 "Temporary Tree and Plant Protection."
- C. Protect existing site improvements to remain from damage during construction.
 - 1. Restore damaged improvements to their original condition, as acceptable to Owner.

3.2 TEMPORARY EROSION AND SEDIMENTATION CONTROL

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

3.3 TREE AND PLANT PROTECTION

- A. Protect trees and plants remaining on-site according to requirements in Section 015639 "Temporary Tree and Plant Protection."

- B. Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations according to requirements in Section 015639 "Temporary Tree and Plant Protection."

3.4 EXISTING UTILITIES

- A. Locate, identify, disconnect, and seal or cap utilities indicated to be removed or abandoned in place.
 - 1. Arrange with utility companies to shut off indicated utilities.
- B. Interrupting Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others, unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
 - 1. Notify Landscape Architect not less than two days in advance of proposed utility interruptions.
 - 2. Do not proceed with utility interruptions without Landscape Architect's written permission.
- C. Removal of underground utilities is included in earthwork sections; in applicable fire suppression, plumbing, HVAC, electrical, communications, electronic safety and security, and utilities sections; and in Section 024116 "Structure Demolition" and Section 024119 "Selective Demolition."

3.5 CLEARING AND GRUBBING

- A. Remove obstructions, trees, shrubs, and other vegetation to permit installation of new construction.
 - 1. Grind down stumps and remove roots larger than 3 inches in diameter, obstructions, and debris to a depth of 18 inches below exposed subgrade.
 - 2. Use only hand methods or air spade for grubbing within protection zones.
- B. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.
 - 1. Place fill material in horizontal layers not exceeding a loose depth of 8 inches and compact each layer to a density equal to adjacent original ground.

3.6 TOPSOIL STRIPPING

- A. Remove sod and grass before stripping topsoil.
- B. Strip topsoil to depth of 6 inches in a manner to prevent intermingling with underlying subsoil or other waste materials.

- C. Stockpile topsoil away from edge of excavations without intermixing with subsoil or other materials. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust and erosion by water.

3.7 SITE IMPROVEMENTS

- A. Remove existing above- and below-grade improvements as indicated and necessary to facilitate new construction.

3.8 DISPOSAL OF SURPLUS AND WASTE MATERIALS

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

END OF SECTION 311000

SECTION 312000 - EARTH MOVING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Excavating and filling for rough grading the Site
2. Preparing subgrades for walks, pavements, turf and grasses, and plants.
3. Excavating and backfilling for buildings and structures.
4. Subbase course and base course for asphalt paving.

1.2 DEFINITIONS

A. Backfill: Soil material used to fill an excavation.

1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
2. Final Backfill: Backfill placed over initial backfill to fill a trench.

B. Base Course: Aggregate layer placed between the subbase course and hot-mix asphalt paving.

C. Bedding Course: Aggregate layer placed over the excavated subgrade in a trench before laying pipe.

D. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.

E. Drainage Course: Aggregate layer supporting the slab-on-grade that also minimizes upward capillary flow of pore water.

F. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.

1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Landscape Architect. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.
2. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Landscape Architect. Unauthorized excavation, as well as remedial work directed by Landscape Architect, shall be without additional compensation.

G. Fill: Soil materials used to raise existing grades.

H. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.

- I. Subbase Course: Aggregate layer placed between the subgrade and base course for hot-mix asphalt pavement, or aggregate layer placed between the subgrade and a cement concrete pavement or a cement concrete or hot-mix asphalt walk.
- J. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, drainage course, or topsoil materials.
- K. Utilities: On-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.

1.3 QUALITY ASSURANCE

- A. Pre-excavation Conference: Conduct conference at Project site.

1.4 PROJECT CONDITIONS

- A. Utility Locator Service: Notify utility locator service for area where Project is located before beginning earth moving operations.
- B. Do not commence earth moving operations until Erosion and Sediment Control measures are in place.
- C. Do not commence earth-moving operations until plant-protection measures specified in Section 015639 "Temporary Tree and Plant Protection" are in place.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

- A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.
- B. Satisfactory Soils: Soil Classification Groups GW, GP, GM, SW, SP, and SM according to ASTM D 2487, or a combination of these groups; free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.
- C. Unsatisfactory Soils: Soil Classification Groups GC, SC, CL, ML, OL, CH, MH, OH, and PT according to ASTM D 2487, or a combination of these groups.
 - 1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.
- D. Subbase Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.

- E. Base Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 95 percent passing a 1-1/2-inch sieve and not more than 8 percent passing a No. 200 sieve.
- F. Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.
- G. Bedding Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; except with 100 percent passing a 1-inch sieve and not more than 8 percent passing a No. 200 sieve.
- H. Drainage Course: Narrowly graded mixture of crushed stone, or crushed or uncrushed gravel; ASTM D 448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2-inch sieve and 0 to 5 percent passing a No. 8 sieve.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth moving operations.
- B. Protect and maintain erosion and sedimentation controls during earth moving operations.
- C. Protect subgrades and foundation soils from freezing temperatures and frost. Remove temporary protection before placing subsequent materials.

3.2 EXCAVATION, GENERAL

- A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions.
 - 1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.

3.3 EXCAVATION FOR STRUCTURES

- A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch. If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.
 - 1. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.

B. Excavations at Edges of Tree- and Plant-Protection Zones:

1. Excavate by hand to indicated lines, cross sections, elevations, and subgrades. Use narrow-tine spading forks to comb soil and expose roots. Do not break, tear, or chop exposed roots. Do not use mechanical equipment that rips, tears, or pulls roots.
2. Cut and protect roots according to requirements in Section 015639 "Temporary Tree and Plant Protection."

3.4 EXCAVATION FOR WALKS AND PAVEMENTS

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

3.5 SUBGRADE INSPECTION

- A. Proof-roll subgrade below the building slabs and pavements with a pneumatic-tired dump truck to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.
- B. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Architect, without additional compensation.

3.6 UNAUTHORIZED EXCAVATION

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

3.7 STORAGE OF SOIL MATERIALS

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

3.8 SOIL FILL

- A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.
- B. Place and compact fill material in layers to required elevations as follows:

1. Under grass and planted areas, use satisfactory soil material.
2. Under walks and pavements, use satisfactory soil material.
3. Under steps and ramps, use engineered fill.
4. Under building slabs, use engineered fill.
5. Under footings and foundations, use engineered fill.

3.9 SOIL MOISTURE CONTROL

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

3.10 COMPACTION OF SOIL BACKFILLS AND FILLS

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

3.11 GRADING

- A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
- B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:
 1. Turf or Unpaved Areas: Plus or minus 1 inch.
 2. Walks: Plus or minus 1 inch.
 3. Pavements: Plus or minus 1/2 inch.

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

3.12 SUBBASE AND BASE COURSES UNDER PAVEMENTS AND WALKS

- A. Place subbase course and base course on subgrades free of mud, frost, snow, or ice.
- B. On prepared subgrade, place subbase course and base course under pavements and walks as follows:
 - 1. Shape subbase course and base course to required crown elevations and cross-slope grades.
 - 2. Place subbase course and base course that exceeds 6 inches in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches thick or less than 3 inches thick.
 - 3. Compact subbase course and base course at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 95 percent of maximum dry unit weight according to ASTM D 698.

3.13 DRAINAGE COURSE UNDER CONCRETE SLABS-ON-GRADE

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

3.14 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified geotechnical engineering testing agency to perform tests and inspections.
- B. Contractor shall provide sufficient notice to Owner and Landscape Architect so that geotechnical engineer can be made available on-site during all times when geotechnical observations and testing are needed.
- C. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.
- D. Footing Subgrade: At footing subgrades, at least one test of each soil stratum will be performed to verify design bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of subgrade with tested subgrade when approved by Architect.

- E. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; recompact and retest until specified compaction is obtained.

3.15 PROTECTION

- A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- B. Repair and re-establish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
- C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
 - 1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.16 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Remove surplus satisfactory soil and waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property at an approved location.

END OF SECTION 312000

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DIVISION 32
EXTERIOR
IMPROVEMENTS

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SECTION 321313 - CONCRETE PAVING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes Concrete Paving
 - 1. Integral Colored Concrete
 - 2. Integral Colored Concrete with exposed aggregate
 - 3. Integral Colored Concrete with embedded river stones

1.2 PRE-INSTALLATION MEETINGS

- A. Pre-installation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each type of product, ingredient, or admixture requiring color selection.

1.4 QUALITY ASSURANCE

- A. Ready-Mix-Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
 - 1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities" (Quality Control Manual - Section 3, "Plant Certification Checklist").
- B. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
 - 1. Build mockups of decorative concrete paving in the location and of the size indicated or, if not indicated, build mockups where directed by Landscape Architect and not less than 96 inches by 96 inches.
 - 2. For accurate color, the quantity of concrete mixed to produce the sample should not be less than 3 cubic yards (or not less than 1/3 the capacity of the mixing drum on the ready-mix truck) and should always be in full cubic yard increments. Excess material shall be discarded according to local regulations.
 - 3. Construct mockup using processes and techniques intended for use on permanent work, including curing procedures. Include samples of control, construction, and expansion joints in sample panels. Mockup shall be produced by the individual workers who will perform the work for the Project.

4. Retain samples of cements, sands, aggregates and color additives used in mockup for comparison with materials used in remaining work.
5. Accepted mockup provides visual standard for work of Section.
6. Mockup shall remain through completion of the work for use as a quality standard for finished work.
7. Remove mockup when directed

1.5 PRECONSTRUCTION TESTING

- A. Preconstruction Testing Service: Engage a qualified independent testing agency to perform preconstruction testing on concrete paving mixtures.

1.6 FINISHES

- A. Architectural Concrete Finish: Match Landscape Architect's design reference sample, identified and described as indicated, to satisfaction of Landscape Architect.
- B. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces.
 1. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.
- C. Maintain uniformity of special finishes over construction joints unless otherwise indicated.

PART 2 - PRODUCTS

2.1 CONCRETE, GENERAL

- A. ACI Publications: Comply with ACI 301 unless otherwise indicated.

2.2 FORMS

- A. Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, and smooth exposed surfaces.

2.3 STEEL REINFORCEMENT

- A. Plain-Steel Welded-Wire Reinforcement: ASTM A 1064/A 1064M, fabricated from as-drawn steel wire into flat sheets.
- B. Reinforcing Bars: ASTM A 615/A 615M, Grade 60; deformed.
- C. Steel Bar Mats: ASTM A 184/A 184M; with ASTM A 615/A 615M, Grade 60 deformed bars; assembled with clips.

- D. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, welded-wire reinforcement, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete of greater compressive strength than concrete specified.

2.4 CONCRETE MATERIALS

- A. Cementitious Materials: Use the following cementitious materials, of same type, brand, and source throughout Project:
 - 1. Portland Cement: ASTM C 150/C 150M, gray portland cement Type I.
- B. Normal-Weight Aggregates: ASTM C 33/C 33M, uniformly graded.
 - 1. Maximum Course-Aggregate Size: 1 inch nominal
 - 2. Fine Aggregate: Free of materials deleterious reactivity to alkali in cement.
- C. Air-Entraining Admixture: ASTM C 260/C 260M.
- D. Chemical Admixtures: Admixtures certified by manufacturer to be compatible with other admixtures and to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material.
- E. Color Pigment: ASTM C 979/C 979M, synthetic mineral-oxide pigments or colored water-reducing admixtures; color stable, nonfading, and resistant to lime and other alkalis.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by the following:
 - a. Scofield
 - 2. Color: #4948 'Smoke Beige', integral
- F. Water: Potable and complying with ASTM C 94/C 94M.

2.5 CURING MATERIALS

- A. Evaporation Retarder: Waterborne, monomolecular, film forming, manufactured for application to fresh concrete.
- B. Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type I, Class B, manufactured for colored concrete.
 - 1. For integrally colored concrete, curing compound shall be pigmented type approved by coloring admixture manufacturer.
 - 2. For concrete indicated to be sealed, curing compound shall be compatible with sealer.
- C. Slip-Resistance-Enhancing Additive: Manufacturer's standard finely graded aggregate or polymer additive, designed to be added to clear acrylic sealer to enhance slip resistance of sealed paving surface.

2.6 RELATED MATERIALS

- A. Joint Fillers: ASTM D 1751, asphalt-saturated cellulosic fiber in preformed strips.

2.7 CONCRETE MIXTURES

- A. Color Pigment: Add color pigment to concrete mixture according to manufacturer's written instructions and to result in hardened concrete color consistent with approved mockup. Use ASTM C 979/C 979M, synthetic mineral-oxide pigments or colored water-reducing admixtures; color stable, nonfading, and resistant to lime and other alkalis.

- 1. Manufacturers: Subject to compliance with requirements, provide products by the following:

- a. Scofield
- b. Color: #4948 'Smoke Beige', integral

- B. Concrete Mixtures: Normal-weight concrete.

- 1. Compressive Strength (28 Days): 3000 psi.
- 2. Maximum Water-Cementitious Material Ratio at Point of Placement: 0.45 to 0.50.
- 3. Slump Limit: 3 inches, plus or minus 1 inch.

- C. Exposed Aggregate:

- 1. Aggregate Size to be 1/8 inch - 3/8 inch diameter.
- 2. Color: To be selected by Landscape Architect.

- D. Embedded River Stone:

- 1. Stone size to be 3/4 inch - 2 inch diameter.
- 2. Color: To be selected by Landscape Architect.

2.8 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M and ASTM C 1116/C 1116M. Furnish batch certificates for each batch discharged and used in the Work.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Proof-roll prepared sub-base surface below concrete paving to identify soft pockets and areas of excess yielding.

3.2 PREPARATION

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

3.3 EDGE FORMS AND SCREED CONSTRUCTION

- A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.

3.4 STEEL REINFORCEMENT INSTALLATION

- A. Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.

3.5 JOINTS

- A. General: Form construction, isolation, and contraction joints and tool edges true to line, with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline unless otherwise indicated.
- B. Construction Joints: Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than one-half hour unless paving terminates at isolation joints.
- C. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, other fixed objects, and where indicated.
- D. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness.
- E. Edging: After initial floating, tool edges of paving, gutters, curbs, and joints in concrete with an edging tool to a 1/4-inch radius. Repeat tooling of edges after applying surface finishes. Eliminate edging-tool marks on concrete surfaces.

3.6 CONCRETE PLACEMENT

- A. Moisten sub-base to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.
- B. Comply with ACI 301 requirements for measuring, mixing, transporting, and placing concrete.
- C. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.
- D. Screed paving surface with a straightedge and strike off.

- E. Commence initial floating using bull floats or darbies to impart an open-textured and uniform surface plane before excess moisture or bleedwater appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.

3.7 FLOAT FINISHING

- A. General: Do not add water to concrete surfaces during finishing operations.
- B. Float Finish: Begin the second floating operation when bleedwater sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.

3.8 INTEGRALLY COLORED CONCRETE FINISH

- A. Integrally Colored Concrete Finish: After final floating, apply the following finish:
 - 1. Medium-to-Fine-Textured Broom Finish: Draw a soft-bristle broom across float-finished concrete surface, perpendicular to line of traffic, to provide a uniform, fine-line texture.

3.9 EXPOSED AGGREGATE AND STONE FINISHES

- A. Scrubbed Finish: After concrete has achieved a compressive strength of from 1000 to 1500 psi, apply scrubbed finish. Wet concrete surfaces thoroughly and scrub with stiff fiber or wire brushes, using water freely, until top mortar surface is removed and aggregate is uniformly exposed. Rinse scrubbed surfaces with clean water. Maintain continuity of finish on each surface or area of Work. Remove only enough concrete mortar from surfaces to match design reference sample or mockup.
- B. High-Pressure Water-Jet Finish: Perform high-pressure water jetting on concrete that has achieved a minimum compressive strength of 4500 psi. Coordinate with formwork removal to ensure that surfaces to be high-pressure water-jet finished are treated at same age for uniform results.
 - 1. Surface Continuity: Perform high-pressure water-jet finishing in as continuous an operation as possible, maintaining continuity of finish on each surface or area of Work. Maintain required patterns or variances in reveal projection to match design reference sample or mockup.
- C. Abrasive-Blast Finish: Perform abrasive blasting after compressive strength of concrete exceeds 2000 psi. Coordinate with formwork removal to ensure that surfaces to be abrasive blasted are treated at same age for uniform results.
 - 1. Surface Continuity: Perform abrasive-blast finishing in as continuous an operation as possible, maintaining continuity of finish on each surface or area of Work. Maintain required patterns or variances in depths of blast to match design reference sample or mockup.

2. Abrasive Blasting: Abrasive blast corners and edges of patterns carefully, using backup boards, to maintain uniform corner or edge line. Determine type of nozzle, nozzle pressure, and blasting techniques required to match design reference sample or mockup.
 3. Depth of Cut: Use an abrasive grit of proper type and gradation to expose aggregate and surrounding matrix surfaces to match design reference sample or mockup, as follows:
 - a. Brush: Remove cement matrix to dull surface sheen and expose face of fine aggregate; with no significant reveal.
 - b. Light: Expose fine aggregate with occasional exposure of coarse aggregate and uniform color; with maximum reveal of 1/16 inch.
 - c. Medium: Generally expose coarse aggregate; with slight reveal, a maximum of 1/4 inch.
 - d. Heavy: Expose and reveal coarse aggregate to a maximum projection of one-third its diameter; with reveal range of 1/4 to 1/2 inch.
- D. Bushhammer Finish: Allow concrete to cure at least 14 days before starting bushhammer surface finish operations.
1. Surface Continuity: Perform bushhammer finishing in as continuous an operation as possible, maintaining continuity of finish on each surface or area of Work. Maintain required patterns or variances of cut as shown on Drawings or to match design reference sample or mockup.
 2. Surface Cut: Maintain required depth of cut and general aggregate exposure. Use power tool with hammer attachments for large, flat surfaces, and use hand hammers for small areas, at corners and edges, and for restricted locations where power tools cannot reach.
 3. Remove impressions of formwork and form facings with exception of tie holes.

3.10 CONCRETE PROTECTION AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
- B. Comply with ACI 306.1 for cold-weather protection.
- C. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete but before float finishing.
- D. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.
- E. Curing Compound: Apply immediately after final finishing. Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating, and repair damage during curing period.

3.11 PAVING TOLERANCES

- A. Comply with tolerances in ACI 117.

3.12 REPAIR AND PROTECTION

- A. Remove and replace concrete paving that is broken, damaged, or defective or that does not comply with requirements in this Section. Remove work in complete sections from joint to joint unless otherwise approved by Landscape Architect.
- B. Protect concrete paving from damage. Exclude traffic from paving for at least 14 days after placement. When construction traffic is permitted, maintain paving as clean as possible by removing surface stains and spillage of materials as they occur.
- C. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material. Sweep paving not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION 321313

SECTION 321400 - UNIT PAVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Bluestone pavers set in aggregate setting beds.
 - 2. Metal edge restraints.

1.3 ACTION SUBMITTALS

- A. Product Data: For materials other than water and aggregates.
- B. Samples: For each type of stone paver indicated and the following:
 - 1. Joint materials involving color selection.
 - 2. Exposed edge restraints involving color selection.

1.4 INFORMATIONAL SUBMITTALS

- A. Material Certificates: For stone pavers. Include statements of material properties indicating compliance with requirements, including compliance with standards. Provide for each type and size of unit.

1.5 FIELD CONDITIONS

- A. Cold-Weather Protection: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen subgrade or setting beds. Remove and replace unit paver work damaged by frost or freezing.

PART 2 - PRODUCTS

2.1 BLUESTONE PAVERS

- A. Bluestone Pavers: Rectangular paving slabs made from bluestone complying with ASTM C 629/C 629M, Classification I Exterior with a fine, even grain from clear, sound stock.

1. Color: Blue-Gray
2. Stone Abrasion Resistance: Minimum value of eight (8), based on testing according to ASTM C241/C241M or ASTM C1353.
3. Finish: Dimensional Natural Cleft
4. Thickness: 1-1/2 inches thick
5. Match Landscape Architect's samples for color, finish, and other stone characteristics relating to aesthetic effects.

2.2 STEEL EDGE RESTRAINTS

- A. Steel Edge Restraints: Manufacturer's steel restraint 4 inches high by 1/8 inch thick, designed to serve as edge restraints for unit pavers. Use 12-inch long steel spikes.
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Border Concepts
 - b. Pave Tech Inc.
 - c. Sure-loc Edging Corporation
 - d. Or approved equivalent
 2. Color: Black

2.3 AGGREGATE SETTING-BED MATERIALS

- A. Graded Aggregate for Base: Sound, crushed stone or gravel complying with requirements in Section 312000 "Earth Moving" for base course.
- B. Sand for Leveling Course: Sound, sharp, washed, natural sand or crushed stone complying with gradation requirements in ASTM C 33/C 33M for fine aggregate.
- C. Sand for Joints: Fine, sharp, washed, natural polymeric sand or crushed stone with 100 percent passing No. 16 sieve and no more than 10 percent passing No. 200 sieve.
- D. Drainage Geotextile: Nonwoven needle-punched geotextile fabric, manufactured for subsurface drainage applications, made from polyolefins or polyesters; with elongation greater than 50 percent; complying with AASHTO M 288 and the following, measured per test methods referenced:
 1. Survivability: Class 2, AASHTO M 288.
 2. Apparent Opening Size: No. 40 sieve, maximum; ASTM D 4751.
 3. Permittivity: 0.5 per second, minimum; ASTM D 4491.
 4. UV Stability: 50 percent after 500 hours' exposure, ASTM D 4355.
- E. Herbicide: Commercial chemical for weed control, registered with the EPA. Provide in granular, liquid, or wettable powder form.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Mix pavers from several pallets or cubes, as they are placed, to produce uniform blend of colors and textures.
- B. Cut unit pavers with motor-driven masonry saw equipment to provide clean, sharp, unchipped edges. Cut units to provide pattern indicated and to fit adjoining work neatly. Use full units without cutting where possible. Hammer cutting is not acceptable.
- C. Joint Pattern: Random
- D. Tolerances: Do not exceed 1/16-inch unit-to-unit offset from flush (lippage) or 1/8 inch in 24 inches and 1/4 inch in 10 feet from level, or indicated slope, for finished surface of paving.
- E. Expansion and Control Joints: Provide for sealant-filled joints at locations and of widths indicated. Provide compressible foam filler as backing for sealant-filled joints unless otherwise indicated; where unfilled joints are indicated, provide temporary filler until paver installation is complete. Install joint filler before setting pavers. Sealant materials and installation are specified in Section 079200 "Joint Sealants."
- F. Expansion and Control Joints: Provide cork joint filler at locations and of widths indicated. Install joint filler before setting pavers. Make top of joint filler flush with top of pavers.
- G. Provide edge restraints as indicated. Install edge restraints before placing unit pavers.

3.2 AGGREGATE SETTING-BED APPLICATIONS

- A. Compact soil subgrade uniformly to at least 95 percent of ASTM D 698 laboratory density.
- B. Place aggregate base, compact by tamping with plate vibrator, and screed to depth indicated.
- C. Place drainage geotextile over compacted base course, overlapping ends and edges at least 12 inches.
- D. Place leveling course and screed to a thickness of 1 to 1-1/2 inches, taking care that moisture content remains constant and density is loose and uniform until pavers are set and compacted.
- E. Treat leveling course with herbicide to inhibit growth of grass and weeds.
- F. Set pavers with a minimum joint width of 1/16 inch and a maximum of 1/8 inch being careful not to disturb leveling base. If pavers have spacer bars, place pavers hand tight against spacer bars. Use string lines to keep straight lines. Fill gaps between units that exceed 3/8 inch with pieces cut to fit from full-size unit pavers.
- G. Vibrate pavers into leveling course with a low-amplitude plate vibrator capable of a 3500- to 5000-lbf compaction force at 80 to 90 Hz. Use vibrator with neoprene mat on face of plate or other means as needed to prevent cracking and chipping of pavers. Perform at least three passes across paving with vibrator.

- H. Spread dry polymeric sand and fill joints immediately after vibrating pavers into leveling course. Vibrate pavers and add sand until joints are completely filled, then remove excess sand. Leave a slight surplus of sand on the surface for joint filling.

END OF SECTION 321400

SECTION 329113 - SOIL PREPARATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes planting soils specified by composition of the mixes.
- B. Related Requirements:
 - 1. Section 329300 "Plants" for planting installation.

1.2 DEFINITIONS

- A. Duff Layer: A surface layer of soil, typical of forested areas, that is composed of mostly decayed leaves, twigs, and detritus.
- B. Imported Soil: Soil that is transported to Project site for use.
- C. Manufactured Soil: Soil produced by blending soils, sand, stabilized organic soil amendments, and other materials to produce planting soil.
- D. Planting Soil: Existing, on-site soil; imported soil; or manufactured soil that has been modified as specified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.
- E. Subgrade: Surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.
- F. Subsoil: Soil beneath the level of subgrade; soil beneath the topsoil layers of a naturally occurring soil profile, typified by less than 1 percent organic matter and few soil organisms.
- G. Surface Soil: Soil that is present at the top layer of the existing soil profile. In undisturbed areas, surface soil is typically called "topsoil"; but in disturbed areas such as urban environments, the surface soil can be subsoil.
- H. USCC: U.S. Composting Council.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each bulk-supplied material in sealed containers labeled with content, source, and date obtained; providing an accurate representation of composition, color, and texture.

1.4 INFORMATIONAL SUBMITTALS

- A. Soil tests as indicated in Section 1.6 QUALITY ASSURANCE of this Project Manual.

1.5 QUALITY ASSURANCE

- A. Testing Agency Qualifications: Contractor is required to provide soil testing through an independent, state-operated, or university-operated laboratory; experienced in soil science, soil testing, and plant nutrition; with the experience and capability to conduct the testing indicated; and that specializes in types of tests to be performed.

PART 2 - PRODUCTS

2.1 PLANTING SOILS

- A. Planting-Soil Type: Planting soils shall provide a suitable soil medium for vegetative growth and shall not have low moisture content, low nutrient levels, low pH, materials that are toxic to plant or animal life, and/or unacceptable soil gradation.
 - 1. Topsoil salvaged from the project site may be used as planting soil provided that it meets the standards set forth in these specifications.
 - 2. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, or loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by DPS.
 - 3. Unacceptable Properties:
 - a. Topsoil shall not be a mixture of contrasting textured subsoils.
 - b. Topsoil shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1-1/2" in diameter.
 - c. Topsoil shall not contain any materials that are hazardous to plant or animal life or might become hazardous to plant or animal life.

2.2 INORGANIC SOIL AMENDMENTS

- A. Lime: Where soil test indicate that subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 lbs/1000sf) prior to placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil.
 - a. ASTM C 602, agricultural liming material containing a minimum of 80 percent calcium carbonate equivalent and as follows:
 - 1) Class T with a minimum of 99 percent passing through a No. 8 sieve and a minimum of 75 percent passing through a No. 60 sieve.
 - 2) As indicated by soil tests, provide lime in the form of ground dolomitic limestone of calcitic limestone.

- B. Sulfur: As indicated by soil tests, granular, biodegradable, and containing a minimum of 90 percent elemental sulfur, with a minimum of 99 percent passing through a No. 6 sieve and a maximum of 10 percent passing through a No. 40 sieve.
- C. Iron Sulfate: As indicated by soil tests, granulated ferrous sulfate containing a minimum of 20 percent iron and 10 percent sulfur.
- D. Perlite: As indicated by soil tests, horticultural perlite, soil amendment grade.
- E. Agricultural Gypsum: As indicated by soil tests, minimum 90 percent calcium sulfate, finely ground with 90 percent passing through a No. 50 sieve.
- F. Sand: As indicated by soil tests, clean, washed, natural or manufactured, free of toxic materials, and according to ASTM C 33.

2.3 ORGANIC SOIL AMENDMENTS

- A. Compost: As indicated by soil tests, well-composted, stable, and weed-free organic matter produced by composting feedstock, and bearing USCC's "Seal of Testing Assurance," and as follows:
 - 1. Feedstock: Limited to leaves.
 - 2. Reaction: pH of 5.5 to 8.
 - 3. Soluble-Salt Concentration: Less than 4 dS/m.
 - 4. Moisture Content: 35 to 55 percent by weight.
 - 5. Organic-Matter Content: 30 to 40 percent of dry weight.
 - 6. Particle Size: Minimum of 98 percent passing through a 2-inch sieve.
- B. Sphagnum Peat: As indicated by soil tests, partially decomposed sphagnum peat moss, finely divided or of granular texture with 100 percent passing through a 1/2-inch sieve, a pH of 3.4 to 4.8, and a soluble-salt content measured by electrical conductivity of maximum 5 dS/m.
- C. Manure: As indicated by soil tests, well-rotted, unleached, stable or cattle manure containing not more than 25 percent by volume of straw, sawdust, or other bedding materials; free of toxic substances, stones, sticks, soil, weed seed, debris, and material harmful to plant growth.

2.4 FERTILIZERS

- A. Superphosphate: As indicated by soil tests, commercial, phosphate mixture, soluble; a minimum of 20 percent available phosphoric acid.
- B. Commercial Fertilizer: As indicated by soil tests, commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:
 - 1. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified testing agency.

- C. Slow-Release Fertilizer: As indicated by soil tests, granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:
 - 1. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified testing agency.

PART 3 - EXECUTION

3.1 GENERAL

- A. Place planting soil and fertilizers according to requirements in other Specification Sections.
- B. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in planting soil.
- C. Limit topsoil to areas having 2:1 or flatter slopes. Areas that exceed 2:1 slope require special stabilization. Contact Owner immediately if slopes exceeding 2:1 are encountered on site.

3.2 PREPARATION OF UNAMENDED, ON-SITE SOIL BEFORE AMENDING

- A. Excavation: Excavate soil from designated area(s) to a depth of 6 inches and stockpile until amended in a location approved by the City.
- B. Unacceptable Materials: Clean soil of concrete slurry, concrete layers or chunks, cement, plaster, building debris, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, acid, and other extraneous materials that are harmful to plant growth.
- C. Unsuitable Materials: Clean soil to contain a maximum of 5 percent by volume of stones, roots, plants, sod, clay lumps, and pockets of coarse sand.

3.3 PLACING AND MIXING PLANTING SOIL OVER EXPOSED SUBGRADE

- A. General: Apply and mix unamended soil with amendments on-site to produce required planting soil. Planting soil or topsoil shall not be placed while the soil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.
- B. Subgrade Preparation: Till subgrade to a minimum depth of 6 inches. Remove stones larger than 2 inches in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.
- C. Planting soil and topsoil shall be uniformly distributed in a 4-8 inch layer and lightly compacted to a minimum thickness of 4 inches.
- D. Compaction: Compact each blended lift of planting soil to 75 to 82 percent of maximum Standard Proctor density according to ASTM D 698 and tested in-place.

- E. Finish Grading: Any irregularities in the surface resulting from topsoiling operations shall be corrected in order to prevent the formation of depressions or water pockets. Grade planting soil to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades.

3.4 APPLYING COMPOST TO SURFACE OF PLANTING SOIL

- A. Application: If indicated for use by results of soil tests, apply 4 inches of compost to surface of in-place planting soil. Do not apply materials or till if existing soil or subgrade is frozen, muddy, or excessively wet.
- B. Finish Grading: Grade surface to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades.

3.5 PROTECTION AND CLEANING

- A. Protection Zone: Identify protection zones according to Section 015639 "Temporary Tree and Plant Protection."
- B. Maintain necessary erosion and sediment control measures during topsoiling work.
- C. Protect areas of in-place soil from additional compaction, disturbance, and contamination. Prohibit the following practices within these areas except as required to perform planting operations:
 - 1. Storage of construction materials, debris, or excavated material.
 - 2. Parking vehicles or equipment.
 - 3. Vehicle traffic.
 - 4. Foot traffic.
 - 5. Erection of sheds or structures.
 - 6. Impoundment of water.
 - 7. Excavation or other digging unless otherwise indicated.
- D. Remove surplus soil and waste material including excess subsoil, unsuitable materials, trash, and debris and legally dispose of them off Owner's property at an approved location.

END OF SECTION 329113

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SECTION 329200 - TURF AND GRASSES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Seeding

1.2 DEFINITIONS

- A. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. This includes insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. It also includes substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.
- B. Planting Soil: Existing on-site soil, stockpiled topsoil, or imported topsoil. See Section 329113 "Soil Preparation" and drawing designations for planting soils.

1.3 INFORMATIONAL SUBMITTALS

A. Certification of grass seed.

1. Certification of each seed mixture for turfgrass seed.

B. Product certificates.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: A qualified landscape Installer whose work has resulted in successful turf establishment.

1. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
2. Pesticide Applicator: State licensed, commercial.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Seed and Other Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of compliance with state and Federal laws, as applicable.

PART 2 - PRODUCTS

2.1 SEED

- A. Grass Seed: Fresh, clean, dry, new-crop seed complying with AOSA's "Rules for Testing Seeds" for purity and germination tolerances.
- B. Select seed from the Virginia Crop Improvement Association (VCIA) recommended turfgrass variety list.
- C. Grass-Seed Mix:
 - 1. Products: Per the requirements of the Virginia Erosion & Sediment Control Handbook, latest edition, provide a seed mix containing the following;
 - a. Tall Fescue at 90%-100% Application Rate
 - b. Perennial Ryegrass at 0-10% Application Rate
 - c. Kentucky Bluegrass at 0%-10% Application Rate
 - d. Application rate is for 200 to 250 pounds of seed.

2.2 FERTILIZERS

- A. Commercial Fertilizer: As indicated based on the results of soil tests, apply commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:
 - 1. Composition: Shall be determined based on results of soil tests.
 - 2. Refer to Table 3.32-C of the Virginia Erosion and Sediment Control Handbook, latest edition, for fertilizer and lime requirements.

2.3 MULCHES

- A. Straw Mulch: Provide air-dry, clean, mildew- and seed-free, salt hay or threshed straw of wheat, rye, oats, or barley.

2.4 PESTICIDES

- A. General: Pesticide, registered and approved by the EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.

PART 3 - EXECUTION

3.1 TURF AREA PREPARATION

- A. General: Prepare planting area for soil placement and mix planting soil according to Section 329113 "Soil Preparation."
- B. Reduce elevation of planting soil to allow for soil thickness of sod.
- C. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.
- D. Before planting, obtain Owner's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.2 SEEDING

- A. Sow seed with spreader or seeding machine. Do not broadcast or drop seed when wind velocity exceeds 5 mph.
 - 1. Evenly distribute seed by sowing equal quantities in two directions at right angles to each other.
 - 2. Do not use wet seed or seed that is moldy or otherwise damaged.
 - 3. Do not seed against existing trees. Limit extent of seed to outside edge of planting saucer.
- B. Sow seed at a total rate of 5 to 8 lb/1000 sq. ft. or as indicated in the Virginia Erosion and Sediment Control Handbook, latest edition.
- C. Rake seed lightly into top 1/8 inch of soil, roll lightly, and water with fine spray.
- D. Protect seeded areas with slopes not exceeding 1:6 by spreading straw mulch. Spread uniformly at a minimum rate of 2 tons/acre to form a continuous blanket 1-1/2 inches in loose thickness over seeded areas.

3.3 TURF MAINTENANCE

- A. General: Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable turf. Roll, regrade, and replant bare or eroded areas and re-mulch to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation.
- B. Mowing:
 - 1. Seeded Lawns: Mow turf as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than one-third of grass height. Remove no more than one-third of grass-leaf growth in initial or subsequent mowings.

3.4 SATISFACTORY TURF

- A. Turf installations shall meet the following criteria as determined by Landscape Architect:
 - 1. Satisfactory Seeded Turf: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 90 percent over any 10 sq. ft. and bare spots not exceeding 5 by 5 inches.
- B. Use specified materials to reestablish turf that does not comply with requirements, and continue maintenance until turf is satisfactory.

END OF SECTION 329200

SECTION 329300 - PLANTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Plants
 - 2. Landscape Edgings
 - 3. Tree Watering Devices

1.2 DEFINITIONS

- A. Backfill: The earth used to replace or the act of replacing earth in an excavation.
- B. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. Pesticides include insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. They also include substances or mixtures intended for use as a plant regulator, defoliant, or desiccant. Some sources classify herbicides separately from pesticides.
- C. Planting Soil: Existing, on-site soil; imported soil; or manufactured soil that has been modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth. See Section 329113 "Soil Preparation" for drawing designations for planting soils.
- D. Root Flare: Also called "trunk flare." The area at the base of the plant's stem or trunk where the stem or trunk broadens to form roots; the area of transition between the root system and the stem or trunk.

1.3 PREINSTALLATION MEETINGS

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

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples of each type of mulch.

1.5 INFORMATIONAL SUBMITTALS

- A. Product certificates.
- B. Sample warranty.

1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: Recommended procedures to be established by Owner for maintenance of plants during a calendar year.

1.7 QUALITY ASSURANCE

- A. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
 - 1. Pesticide Applicator: State licensed, commercial.
- B. Provide quality, size, genus, species, and variety of plants indicated, complying with applicable requirements in ANSI Z60.1.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver bare-root stock plants within 24 hours of digging. Immediately after digging up bare-root stock, pack root system in wet straw, hay, or other suitable material to keep root system moist until planting. Transport in covered, temperature-controlled vehicles, and keep plants cool and protected from sun and wind at all times.
- B. Do not prune trees and shrubs before delivery. Protect bark, branches, and root systems from sun scald, drying, wind burn, sweating, whipping, and other handling and tying damage. Do not bend or bind-tie trees or shrubs in such a manner as to destroy their natural shape. Provide protective covering of plants during shipping and delivery. Do not drop plants during delivery and handling.
- C. Handle planting stock by root ball.
- D. Store bulbs, corms, and tubers in a dry place at 60 to 65 deg F until planting.
- E. Deliver plants after preparations for planting have been completed and install immediately. If planting is delayed more than six hours after delivery, set plants and trees in their appropriate aspect (sun, filtered sun, or shade), protect from weather and mechanical damage, and keep roots moist.

1.9 WARRANTY

- A. Special Warranty: Installer agrees to repair or replace plantings and accessories that fail in materials, workmanship, or growth within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Death and unsatisfactory growth, except for defects resulting from abuse, lack of adequate maintenance, or neglect by Owner.
 - b. Structural failures including plantings falling or blowing over.
 - 2. Warranty Periods: From date of planting completion.

- a. Trees, Shrubs, Vines, and Ornamental Grasses: 2 growing seasons.
- b. Ground Covers, Biennials, Perennials, and Other Plants: 2 growing seasons.
- c. Annuals: 2 growing seasons.

PART 2 - PRODUCTS

2.1 PLANT MATERIAL

- A. General: Furnish nursery-grown plants true to genus, species, variety, cultivar, stem form, shearing, and other features indicated in Plant List, Plant Schedule, or Plant Legend indicated on Drawings and complying with ANSI Z60.1; and with healthy root systems developed by transplanting or root pruning. Provide well-shaped, fully branched, healthy, vigorous stock, densely foliated when in leaf and free of disease, pests, eggs, larvae, and defects such as knots, sun scald, injuries, abrasions, and disfigurement.
- B. Root-Ball Depth: Furnish trees and shrubs with root balls measured from top of root ball, which begins at root flare according to ANSI Z60.1. Root flare shall be visible before planting.
- C. Perennials and Grasses: Provide healthy, disease-free plants of species and variety shown or listed, with well-established root systems reaching to sides of the container to maintain a firm ball, but not with excessive root growth encircling the container. Provide only plants that are acclimated to outdoor conditions before delivery and that are in bud but not yet in bloom.

2.2 FERTILIZERS

- A. Planting Tablets: Tightly compressed chip-type, long-lasting, slow-release, commercial-grade planting fertilizer in tablet form. Tablets shall break down with soil bacteria, converting nutrients into a form that can be absorbed by plant roots.
 - 1. Size: 10-gram tablets.
 - 2. Nutrient Composition: 20 percent nitrogen, 10 percent phosphorous, and 5 percent potassium, by weight plus micronutrients.
 - 3. Application Rate: Apply proper number of tablets per plant size according to manufacturer's recommendations.

2.3 MULCHES

- A. Organic Mulch: Double-shredded, natural color hardwood, aged at least one year.

2.4 PESTICIDES

- A. General: Pesticide registered and approved by the EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.

2.5 WEED-CONTROL BARRIERS

- A. Nonwoven Geotextile Filter Fabric: Polypropylene or polyester fabric, 3 oz./sq. yd. minimum, composed of fibers formed into a stable network so that fibers retain their relative position. Fabric shall be inert to biological degradation and resist naturally encountered chemicals, alkalis, and acids.
- B. Composite Fabric: Woven, needle-punched polypropylene substrate bonded to a nonwoven polypropylene fabric, 4.8 oz./sq. yd.

2.6 LANDSCAPE EDGINGS

- A. Steel Edging: Standard commercial-steel edging, fabricated in sections of standard lengths, with loops stamped from or welded to face of sections to receive stakes.
 - 1. Basis of Design: Col-Met Commercial Grade Steel Landscape Edging, or approved equivalent.
 - 2. Edging Size: 1/8 thick by 5 inches deep.
 - 3. Finish: Powder Coat, black.

2.7 TREE-WATERING DEVICES

- A. Slow-Release Watering Device: Standard product manufactured for drip irrigation of plants and emptying its water contents over an extended time period; manufactured from UV-light-stabilized nylon-reinforced polyethylene sheet, PVC, or HDPE plastic.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. BIO-PLEX.
 - b. Engineered Watering Solutions; PQ Partners, LLC.
 - c. Spectrum Products, Inc.

PART 3 - EXECUTION

3.1 TIME FOR PLANTING

- A. Do not install plants in frozen ground.
- B. Install perennials, ornamental grasses, vines, and annuals between either April 1 – June 15 or October 1 – November 15. Planting perennials, ornamental grasses, vines, and annuals between November 2 and March 31 requires approval by the Landscape Architect.

3.2 PLANTING AREA ESTABLISHMENT

- A. General: Prepare planting area for soil placement and mix planting soil according to Section 329113 "Soil Preparation."
 - 1. Amend existing soil with compost, imported topsoil, or other amendments as approved by Owner and Landscape Architect.
 - 2. Remove rocks, stones, and other deleterious materials prior to amending soil. Remove all rocks and stone greater than 1" diameter.
 - 3. Till soil to 12" depth and mix amendments into at least top 8" of soil where plants are indicated on drawings.
 - 4. Install plants as indicated in details on plan sheets.
- B. Placing Planting Soil: Place and mix planting soil in-place over exposed subgrade.
- C. Before planting, obtain Landscape Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.3 EXCAVATION FOR TREES AND SHRUBS

- A. Planting Pits and Trenches: Excavate circular planting pits.
 - 1. Excavate planting pits with sides sloping inward at a 45-degree angle. Excavations with vertical sides are unacceptable. Trim perimeter of bottom leaving center area of bottom raised slightly to support root ball and assist in drainage away from center. Do not further disturb base. Ensure that root ball will sit on undisturbed base soil to prevent settling. Scarify sides of planting pit smeared or smoothed during excavation.
 - 2. Excavate approximately three times as wide as ball diameter.
 - 3. Excavate at least 12 inches wider than root spread and deep enough to accommodate vertical roots for bare-root stock.
 - 4. Do not excavate deeper than depth of the root ball, measured from the root flare to the bottom of the root ball.
- B. Backfill Soil: Subsoil and topsoil removed from excavations may be used as backfill soil unless otherwise indicated.

3.4 TREE AND SHRUB PLANTING

- A. Inspection: At time of planting, verify that root flare is visible at top of root ball according to ANSI Z60.1. If root flare is not visible, remove soil in a level manner from the root ball to where the top-most root emerges from the trunk. After soil removal to expose the root flare, verify that root ball still meets size requirements.
- B. Roots: Remove stem girdling roots and kinked roots. Remove injured roots by cutting cleanly; do not break.
- C. Set each plant plumb and in center of planting pit or trench with root flare 1 inch above adjacent finish grades.

1. Backfill: Planting soil. For trees, use excavated soil for backfill.
2. Balled and Burlapped Stock: After placing some backfill around root ball to stabilize plant, carefully cut and remove burlap, rope, and wire baskets from tops of root balls and from sides, but do not remove from under root balls. Remove pallets, if any, before setting. Do not use planting stock if root ball is cracked or broken before or during planting operation.
3. Container-Grown Stock: Carefully remove root ball from container without damaging root ball or plant.
4. Fabric Bag-Grown Stock: Carefully remove root ball from fabric bag without damaging root ball or plant. Do not use planting stock if root ball is cracked or broken before or during planting operation.
5. Bare-Root Stock: Support stem of each plant and spread roots without tangling or turning toward surface. Plumb before backfilling and maintain plumb while working. Carefully work backfill around roots by hand. Bring roots into close contact with the soil.
6. Backfill around root ball in layers, tamping to settle soil and eliminate voids and air pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
7. Place planting tablets equally distributed around each planting pit when pit is approximately one-half filled. Place tablets beside the root ball about 1 inch from root tips; do not place tablets in bottom of the hole.
 - a. Bare-Root Stock: Place tablets beside soil-covered roots; do not place tablets touching the roots.
 - b. Quantity: Per manufacturer's recommendations for each size of plant.
8. Continue backfilling process. Water again after placing and tamping final layer of soil.

3.5 TREE, SHRUB, AND VINE PRUNING

- A. Remove only dead, dying, or broken branches. Do not prune for shape.
- B. Do not apply pruning paint to wounds.

3.6 GROUND COVER AND PLANT PLANTING

- A. Set out and space ground cover and plants other than trees, shrubs, and vines as indicated on Drawings in even rows with triangular spacing.
- B. Use planting soil for backfill.
- C. Dig holes large enough to allow spreading of roots.
- D. Work soil around roots to eliminate air pockets and leave a slight saucer indentation around plants to hold water.
- E. Water thoroughly after planting, taking care not to cover plant crowns with wet soil.

- F. Protect plants from hot sun and wind; remove protection if plants show evidence of recovery from transplanting shock.

3.7 PLANTING AREA MULCHING

- A. Mulch backfilled surfaces of planting areas and other areas indicated.
 - 1. Trees and Treelike Shrubs in Turf Areas: Apply organic mulch ring of 3-inch average thickness, with 12-inch radius around trunks or stems. Do not place mulch within 3 inches of trunks or stems.
 - 2. Organic Mulch in Planting Areas: Apply 3-inch average thickness of organic mulch over whole surface of planting area, and finish level with adjacent finish grades. Do not place mulch within 3 inches of trunks or stems.

3.8 EDGING INSTALLATION

- A. Steel Edging: Install edging where indicated according to manufacturer's written instructions. Anchor with steel stakes spaced approximately 36 inches apart, driven below top elevation of edging.

3.9 INSTALLING SLOW-RELEASE WATERING DEVICE

- A. Provide one device for each tree. Install per manufacture's instructions.

3.10 PLANT MAINTENANCE

- A. Maintain all plantings for a period of one year from date of planting completion.
- B. Maintain plantings by pruning, cultivating, weeding, fertilizing, mulching, restoring planting saucers, resetting to proper grades or vertical position, and performing other operations as required to establish healthy, viable plantings.
- C. Fill in, as necessary, soil subsidence that may occur because of settling or other processes. Replace mulch materials damaged or lost in areas of subsidence.
- D. Apply treatments as required to keep plant materials, planted areas, and soils free of pests and pathogens or disease. Use integrated pest management practices when possible to minimize use of pesticides and reduce hazards. Treatments include physical controls such as hosing off foliage, mechanical controls such as traps, and biological control agents.
- E. Apply pesticides and other chemical products and biological control agents according to authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with Owner's operations and others in proximity to the Work. Notify Owner before each application is performed.
- F. Protect plants from damage due to landscape operations and operations of other contractors and trades. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged plantings.
- G. At time of Substantial Completion, verify that tree-watering devices are in good working order and leave them in place. Replace improperly functioning devices.

END OF SECTION 329300