

**NOVA PARKS WATERPARK
WHITECOAT AND REPAIRS**

Project Manual

January 6, 2020



**NOVA Parks
5400 Ox Road
Fairfax Station, Virginia 22039
(703) 352-5900
www.NOVAPARKS.com**

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INVITATION TO BID
NOVA PARKS WATERPARK
WHITECOAT AND REPAIRS

Sealed bids will be received by mail or in person at the NOVA Parks Headquarters, 5400 Ox Road, Fairfax Station, Virginia 22039, until **Monday, February 3, 2020 at 2:30 p.m. EST.** Bids will be opened in public at that time.

The project includes removing of unbonded plaster, applying new whitecoat or Diamondbrite plaster to pools, and other miscellaneous repairs. The Contractor shall provide all labor and materials necessary for a complete and usable end product.

The Contractor shall furnish all equipment, material and labor in accordance with the project manual and plans.

The Project Manual can be downloaded from the NOVA Parks website (www.novaparks.com) at <https://www.novaparks.com/about/bids-proposals> . The Contractor shall be responsible to verify and obtain any addendum prior to the bid date. The Project documents include the following:

- Project manual dated January 6, 2020.

All questions regarding this project shall be directed to the attention of Blythe Russian, Superintendent, and shall be in writing. Questions may be emailed to brussian@nvrpa.org.

Project Addenda will be posted on the NOVA Parks website as well as emailed to those registered.

Access to the site can be obtained by contacting the park staff as follows:
Great Waves Waterpark- Reid Nebergall- 703-960-0767

FORM OF PROPOSAL - PAGE 1 OF 2

**NOVA PARKS WATERPARKS
WHITECOAT AND REPAIRS**

PROPOSAL

To furnish all material, labor, tools, equipment and supplies to perform all work specified herein and shown in the contract documents.

Name of Bidder:

Address of Bidder:

Telephone Number:

Signature /Title:

Print or Type Name:

Date:

Virginia Contractor's

License Number:

To: Blythe Russian, Superintendent
NOVA Parks
5400 Ox Road
Fairfax Station, Virginia 22039
(703) 352-5900

Bidders shall fill in all blank spaces on the Form of Proposal. Pursuant to and in compliance with the contract documents, the undersigned proposes and agrees, if this proposal is accepted, to furnish all labor, materials, supplies, equipment and other facilities, and to perform all work described in the project manual in the manner therein prescribed for consideration of the following amount.

The low bid shall be determined by the sum of the Total Base Bids on the Form of Proposal and whichever Alternates are chosen by NOVA Parks. Bidders shall fill in all blank spaces on the Form of Proposal.

FORM OF PROPOSAL - PAGE 2 OF 2
NOVA PARKS WATERPARKS
WHITECOAT AND REPAIRS

Great Waves Wave Pool Shallow -BASE BID PART 1 –All work to whitecoat the shallow end of wave pool with the exception of the removal of unbonded plaster (lump sum). _____Dollars / \$ _____
Great Waves Wave Pool Shallow -BASE BID PART 2 – Removal of unbonded plaster. (\$ _____ per square foot) times (200 square feet estimate) = _____Dollars / \$ _____
Great Waves Wave Pool Shallow-TOTAL BASE BID – Sum of Part 1 and Part 2 from above. _____Dollars / \$ _____
ALTERNATE 1- Replacement of Expansion Joint- Lump Sum Total _____Dollars / \$ _____
ALTERNATE 2 – Patchwork in Deep End (whitecoat). (\$ _____ per square foot) times (50 square feet estimate) = _____Dollars / \$ _____

Acknowledges Receipt of Addendum # _____ dated _____.

Acknowledges Receipt of Addendum # _____ dated _____.

PROJECT DESCRIPTION

The work shall include the following at Great Waves Waterpark at Cameron Run Regional Park:

Wave Pool

1. Remove all unbonded plaster.
2. Diamondbrite Shallow End Wave Pool to expansion joint.
3. Patch any whitecoat in Deep End Wave Pool
4. Miscellaneous small repairs that will be determined on site and paid for via change order.

The Contractor shall furnish all equipment, material and labor in accordance with the Request for Proposal and all specifications.

*******END OF PROJECT DESCRIPTION*******

SUPPLEMENTAL GENERAL CONDITIONS

PART 1 – GENERAL

The Form of Proposal requires unit prices for several line items. The unit price quantities listed are estimates that will be used to determine total proposed project cost and the low bidder. The quantities are subject to change as the work is completed. The Contractor shall be paid per the actual amount of work completed times the unit price cost in the Contractor's bid.

NOVA Parks reserves the right to disqualify any bidders who are determined not to have adequate experience or favorable client references. Any disqualifications shall be at the sole discretion of NOVA Parks.

The Contractor shall provide a listing of at least 5 similar projects that have been completed by the Contractor within the past 3 years. The project listing shall include (a) a description of the work including project location, (b) the date the work was completed, (c) the total project cost, and (d) the name and address of the client along with the name of a contact person and telephone number. The project listing shall indicate which portions of the work were completed by the Contractor and which portions were completed by subcontractors. If a subcontractor is to be used, the contractor shall submit his qualifications and references

All bidders shall submit their bids on the enclosed Form of Proposal.

Contractor shall provide at least 48 hours' notice prior to beginning of work.

Contractors must have a valid Class A Virginia Contractor's License at time of the bid.

Materials may be stored on site with prior approval from NOVA Parks. Only materials to be used on this project may be stored on site. NOVA Parks is not responsible for Contractor's material or equipment left on site.

The project has to be completed no later than May 4, 2020. NOVA Parks intends to issue a notice to proceed no later than March 2, 2020. If the work is not completed within the time required, as that time may be adjusted by change orders, there shall be imposed on the contractor liquidated damages of \$500.00 per calendar day for each day beyond the contract time it takes to complete the work.

All work will be completed during weekday business hours of 7 am to 6 pm. No work shall be permitted on weekends or holidays without prior approval from NOVA Parks.

Contractor should verify lengths and conditions and provide bids that reflect actual lengths and conditions.

No vehicles, at any time, shall be driven off the asphalt road or graveled driveways including material delivery trucks.

The Contractor shall be responsible for all miscellaneous damages caused by his forces, to include subcontractors, to park property during the course of this project.

Submittals shall be made to the owner for approval of all materials specified in the project manual or for requested substitutions of specified materials. Acceptance of a substitution shall be at the sole discretion of NOVA Parks

The Contractor shall remove and properly dispose of all waste material generated from this project. If a dumpster is to be used, its location must be coordinated with NOVA Parks.

The Contractor shall furnish all equipment, material and labor in accordance with the project manual. The Contractor shall provide a complete and fully usable product whether or not everything is specifically called for in the project manual.

The successful Contractor shall endorse NOVA Parks on its insurance policy as an additional insured to protect the interests of the public. Certificates of Insurance and Additional Insured Endorsements acceptable to NOVA Parks shall be filed with the Authority prior to commencement of the Work. These Certificates and Endorsements shall contain a provision that coverages afforded under the policies will not be cancelled until at least thirty days prior written notice has been given to NOVA Parks. Insurance certificates must include an additional insured endorsement naming the following as an additional insured: "The Northern Virginia Regional Park Authority, its officers, directors, agents, employees, and volunteers." The endorsement must be completed on endorsement form CG 20 10 11 85 or CG 20 10 07 04.

PART 2 – WARRANTY AND AS-BUILTS

The Contractor shall provide a written warranty to NOVA Parks covering all defects in materials and workmanship for the period of two years from the date of project completion. All warranties provided by the equipment and material manufacturers shall also be provided to NOVA Parks. The warranty shall state that all warranted items should be repaired, at the Contractor's expense, within 72 hours of notification by the Owner.

The Contractor shall provide three copies of an Owner's manual detailing proper use and maintenance of all materials. Each copy should be bound, indexed and labeled as follows:

The typewritten manuals shall include the following:

1. Name, address, telephone number and contact person (if applicable) of all Contractor(s) involved in the project.
2. The Contractors' written two-year warranties as noted above.
3. Complete manufacturers' operating and maintenance instructions for all materials and equipment.
4. Manufacturers' warranties for all materials and equipment.

*******END OF SUPPLEMENTAL GENERAL CONDITIONS*******

PROJECT SPECIFICATIONS

The Contractor shall strictly follow the manufactures recommendations for installation of the surface products to include, but not limited to preparation of the surface, applicable temperatures and conditions, means and thicknesses of the products. When there is a conflict between the manufacturer's recommendation and the specifications, the more stringent shall be used.

The work includes:

- Pumping down and cleaning out water and debris in the pool;
- **Removing of all unbonded old plaster and surfacing material** on a per square foot basis;
- Preparing the existing surface for the application of exposed aggregate surface;
- Applying bondcoat;
- Replacement of expansion joints; if needed
- Replacement of any expansion joint tiles, as needed;
- Replacing broken or expired drain covers to meet ASME/ANSI A112.19.8-2007 standards, as needed;
- Application of marbleite pool plaster with a minimum thickness of 3/8 of an inch;
- Providing owner with instructions for filling the pool and for proper curing of the new surface that meet or exceed start up guidelines set forth by the National Plasterers Council.

1. Applicable Documents: The following specifications and standards of the issues referred to in this section and listed below, form a part of this specification to the extent required by the references thereto.

SS-C-192 (1) Federal Cement Portland

2. General Requirements: The work shall include drainage of the pools, removal of debris, removing safety surface, breaking out all whitecoat plaster, acid bath of the entire surface, applying bondcoat, and application of the new marbleite surface over pool interior structure.

3. Materials:

Whitecoat Material

3.1 Portland Cement: Used in the surfacing mix shall be Type I or 1A white cement conforming to specification SS-C-192 (1).

3.2 Marblelite: Shall be a ground limestone aggregate totally suitable for this application

3.3 Water: For mixing and curing including free moisture shall be clean, fresh and free from injurious amounts of oil, acid, salt alkali, silt, organic matter or other deleterious substances.

4. Surface Preparation for Whitecoat/Marblelite: The Contractor shall thoroughly prepare the existing surfaces to properly receive the marblelite coating. This shall include sawing the marblelite to the gunite or concrete immediately below the tile/gutters and chip old marblelite back 3" below tile/gutters. Chip away old marblelite from around all fittings at least three inches down to gunite or concrete. The entire surface of the marblelite shall be acid bathed to remove body oil, suntan lotion, and any other debris to obtain a good clean etched surface for application of marblelite. The Contractor shall exercise care during the complete project so as not to damage adjacent areas of pool fittings, tile, whitecoat and plumbing lines. All skimmers, inlet fittings, and main drains shall be plugged by use of rubber winterization plugs or other approved means to keep construction materials out of plumbing lines. The water line shall be thoroughly and properly covered for complete protection. Any tile damaged shall be replaced with the same kind at no charge to the contract. NOTE: **It is very important that all unbonded whitecoat/marblelite is removed.**

5. Resurfacing: The application of marblelite is a highly specialized skill and shall be done in a totally professional and workmanlike manner, and acceptable to NOVA Parks. The temperature of the pool surface shall be at least 50 degrees F. during application and finishing.

6.1 Mixture: The Contractor shall prepare a mix *Marblelite, White Cement and MetaMax PA* which shall be applied to a thickness of not less than 3/8" at any point throughout the entire pool surface.

6.2 Finish: The finished surface must be smooth and tightly bonded to the existing structure using special steel trowels for this application. The final finish shall show no variation in cross section in excess of 1/4" in 5 feet. The Contractor shall take such precautions as necessary to avoid burns or gray areas caused by over troweling.

6.3 Curing: The new marblelite surface shall be protected adequately from injurious action by sun, rain, flowing of water, or frost and the pool shall be filled with water immediately after application. Once the water has been started, do not stop adding water until pool is filled to level of gutter or skimmers. Note: It is important to fill pool as soon as possible to help curing. NOVA Parks will furnish water by fill spout from its well water supply.

6. Additional replacements or repairs may be determined upon drainage of the pools and costs assessed by the Contractor at that time. The scope of such work may include, but will not be limited to, the following:
- damaged return lines

- broken plumbing lines, if needed
- 7. Contractor is to pump pool into the existing sewer/discharge pipe or other area as designated by NOVA Parks. Park staff will provide specific directions.
- 8. Contractor is responsible for keeping the hydrostatic lines pumped out during the drainage of the pool and all subsequent work periods. *Moreover, the Contractor is responsible removing of all hydrostatic line plugs, and taking appropriate measures to insure that pool shell does not heave during the course of this work, and shall be responsible for all damage Contractor may cause.*
- 9. All work must be completed **no later than Monday, May 4, 2020.**
- 10. Any questions regarding the scope of work should be directed to the Park Operations Superintendent, Blythe Russian at brussian@nvrpa.org . Site access may be coordinated through the site.
- 11. Contractor shall specify warranty for workmanship and material.

DIAMOND BRITE SPECIFICATIONS

1. All existing Diamond Brite material shall be removed from pool surface.
2. Surface preparation, bond coating and material installation shall be in conformance with the Diamond Brite Installation Manual.

*******END OF SPECIFICATIONS*******

NVRPA DOCUMENT GC 101
INSTRUCTIONS TO BIDDERS AND
GENERAL CONDITIONS OF THE CONTRACT
FOR CONSTRUCTION

THIS DOCUMENT HAS IMPORTANT LEGAL CONSEQUENCES;
CONSULTATION WITH AN ATTORNEY IS ENCOURAGED
2018 EDITION

ARTICLE NUMBER	TITLE
1.	Definitions
2.	Contract Documents
3.	Laws and Regulations
4.	Conditions at Site or Structure
5.	Explanation to Bidders
6.	Preparation and Submission of Bids
7.	Bid Guarantee
8.	Withdrawal or Modification of Bids
9.	Receipt and Opening of Bids
10.	Errors in Bids
11.	Rejection of Bids
12.	Standard Forms
13.	Award of Contract
14.	Contract Security
15.	Progress Schedules
16.	Shop Drawings, Product Data, Samples
17.	Materials, Services and Facilities
18.	Inspection and Testing
19.	Substitutions
20.	Patents
21.	Surveys, Permits, Regulations
22.	Protection of Work, Property and Persons
23.	Supervision by Contractor
24.	Changes in the Work
25.	Changes in the Contract Sum or Other Relief
26.	Time for Completion and Liquidated Damages
27.	Correction of Work
28.	Suspension of Work, Authority's Right to Stop and Carry Out the Work
29.	Termination
30.	Uses of the Premises
31.	Payment to the Contractor
32.	Substantial Completion of the Work
33.	Final Completion and Final Payment
34.	Insurance
35.	Assignments
36.	Indemnification
37.	Contractor Liability
38.	Separate Contracts
39.	Subcontracting
40.	Engineer
41.	Warranty
42.	Contractual Disputes

**GENERAL CONDITIONS
OF THE CONSTRUCTION CONTRACT WITH
THE NORTHERN VIRGINIA REGIONAL PARK AUTHORITY**

Article 1: DEFINITIONS

- (a) **Addenda** – Written or graphic instruments issued prior to the Award of the Contract which modify or interpret the Contract Documents, Drawings, and Specifications by additions, deletions, clarifications, or corrections
- (b) **Engineer** – The design professional, including an architect, that has contracted with the Authority to design the Project and administer the Contract on behalf of the Authority. If no Project Engineer is designated all duties and responsibilities which the Engineer would otherwise have shall be the duties and responsibilities of the Authority.
- (c) **Authority** – The Northern Virginia Regional Park Authority.
- (d) **Change Order** – A written order to the Contractor authorizing an addition, deletion or revision in the Work within the general scope of the Contract Documents or authorizing an adjustment in the Contract Price or Contract Time. A Change Order, which adjusts the Contract Price or Contract Time, must be signed by the Authority, Contractor and Engineer. A Change Order includes a Field Order, as hereafter defined.
- (e) **Construction Change Directive** - A written order to the Contractor signed by the Authority directing an addition, deletion or revision in the Work within the general scope of the Contract Documents prior to an agreement between the Authority and the Contractor as to an adjustment in the Contract Price or Contract Time. Upon receipt of a Construction Changes Directive, the Contractor shall promptly proceed with the change in the Work described therein.
- (f) **Contract Sum** – The total monies payable to the Contractor under the terms and Conditions of the Contract Documents.
- (g) **Contract Time** – The specific date or the number of days stated in the Contract Documents or the Notice to Proceed for Substantial Completion of the Work.
- (h) **Contractor** – Any person or entity who has a contract directly with the Authority for the performance of the Work or a part thereof.
- (i) **Day** – A calendar day of 24 hours lasting from midnight one day to midnight the next day.
- (j) **Drawings** – The graphic and pictorial part of the Contract Documents that show the characteristics and scope of the Work to be performed and that has been prepared by or for the Authority. The term is used interchangeably with the word “Plans” and includes Standard Details.
- (k) **Field Order** – A written order issued by the Engineer or the Authority to the Contractor during construction effecting a change in the Work, but not involving an adjustment in the Contract Price or an extension of the Contract Time.
- (l) **Inspector** – The authorized representative of the Authority assigned to make detailed inspection of any or all portions of the Work. The Inspector is authorized to stop the Work in accordance with Article 29.
- (m) **Notice of Award** – The written notice of the acceptance of the Bid from the Authority to the successful Bidder.
- (n) **Special Conditions** – General requirements that are unique to a particular Contract.
- (o) **Standard Details** – Details showing standard products, methods, and materials contained within the Plans or other agency standards such as the current versions of the Fairfax County Public Facilities Manual or the Virginia Department of Highways and Transportation Road and Bridge standards and specifications.

- (p) **Specifications – Special Conditions, Standard Specifications and Standard Details.**
- (q) **Subcontractor – An individual, firm or corporation having a direct contract with the Contractor or with any other subcontractor for the performance of a part of the Work at the site.**

Substantial Completion – That date as certified by the Engineer when the construction of the Project or a specified part thereof is sufficiently completed in accordance with the Contract Documents so that the Project or specified part can be utilized for the purposes for which it is intended and when the Contractor has received all final inspections and occupancy permits from the appropriate jurisdictions.
- (r) **Supplementary General Conditions – Modifications to General Conditions required for the Project.**
- (s) **Supplier – Any person or organization who supplies materials or equipment for the Work (including that fabricated to a special design) but who does not perform labor at the site.**
- (t) **Work – Any and all labor, materials, equipment, and all obligations, duties, and responsibilities expressly stated or reasonably implied for the successful completion of the construction required by the Contract Documents. The Contractor’s Work includes payment of all sales, consumer, use, and other similar taxes required by law.**
- (u) **Written Notice – Any notice to any party of the Contract relative to any part of the Contract in writing and considered delivered and the service thereof completed when posted by mail to the party at its last given address, or delivered in person to the party or its authorized representative at the Project.**

Article 2: CONTRACT DOCUMENTS

- (a) **The agreement entered into by the parties shall consist of the Form of Construction Contract, the Form of Proposal submitted by the Contractor, the Supplemental General Conditions, these General Conditions, the specifications and drawings, including all modifications thereof, all of which shall be referred to collectively as the “Contract Documents.” The Form of Construction Contract shall be signed by the Authority and Contractor in as many original counterparts as may be mutually agreed upon. The Contract may be amended only by a written amendment to the Contract or a Change Order signed by both parties.**
- (b) **The Contract Documents are complimentary and what is required by one shall be binding on the Contractor as if required by all. In the event of any inconsistency between the Contract Documents, Contractor shall provide the greater quality or quantity of Work with no increase in the Contract Sum. The intent of the Contract Documents is that the Contractor shall furnish all labor, materials, tools, equipment, utilities, transportation and incidental work necessary for the proper execution of the Work in accordance with, or reasonably inferable from, the Contract Documents. In the event of conflicts among the Contract Documents, the Authority may designate the written or drawn provision or feature which shall be used and no additions to or deductions from the Contract Sum, or modification to the Contract Time, shall result from the choice. In case of conflicts, the Contract Documents shall take precedence in the following order: the Construction Contract; The Supplemental General Conditions; the General Conditions; the Special Conditions; the specifications; and the drawings.**
- (c) **This Contract is an entire and integrated agreement and is not severable.**
- (d) **Contractor shall identify in writing to the Authority and the Engineer, as soon as possible, any discrepancies, errors, omissions and/or inconsistencies or ambiguities, discovered by the Contractor in the Contract Documents. Work done by the Contractor after its discovery of such discrepancies, errors, omissions and/or inconsistencies or ambiguities and prior to response from the Engineer shall be done at the Contractor’s sole risk and cost.**

Article 3: LAWS AND REGULATIONS

- (a) In the performance of the Work, the Contractor shall comply with the requirements of all local, state and federal laws, codes, statutes, ordinances, rules, regulations and lawful orders of any public authority relating to the performance of the Work (the “Legal Requirements”).
- (b) All Contractors and Subcontractors for the Project must be properly licensed under the laws of the Commonwealth of Virginia and in good standing before submitting any bid and before commencing any Work. Upon the request of the Authority, any Contractor or Subcontractor for the Project shall promptly provide proof of its licensure.
- (c) The Contract and all other contracts and subcontracts are subject to the provisions of Article 3 and 5, Chapter 4, Title 40.1, Code of Virginia, 1950, as amended, relating to labor unions and the “right to work,” and all Contractors or Subcontractors, whether residents or nonresidents of the Commonwealth, who perform any work related to the project shall comply with all of the provisions of these code sections.
- (d) The Contractor shall furnish the Authority copies of affidavits upon request giving the original dates, renewal dates and expiration dates of all labor contracts related to any phase of the work to be performed on the project site under this Contract.
- (e) Contractor shall comply with all local, state and federal safety codes, statutes, rules, practices and regulations.

(f) EQUAL OPPORTUNITY EMPLOYMENT

- (1) During the performance of the Agreement, the Contractor agrees as follows:

 - (i) The Contractor shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, disability or other basis prohibited by federal or 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.
 - (ii) The Contractor, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, shall state that Contractor is an equal opportunity employer.
 - (iii) Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting the notice, advertisement, and solicitation requirements of this paragraph.
- (2) The Contractor shall cause to be included the provisions of the foregoing paragraphs a.(i), a.(ii) and a.(iii) (substituting the subcontractor or vendor for Contractor as the obligated party) in every subcontract or purchase order of over \$10,000, so that the provisions will be binding upon each subcontractor or vendor.

(g) DRUG-FREE WORKPLACE

- (1) During the performance of the Agreement, 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) cause to be included the provisions of the foregoing clause (substituting the subcontractor or vendor for the Contractor as the

obligated party) in every subcontract or purchase order of over \$10,000, so that the provisions will be binding upon each subcontractor or vendor.

- (2) For the purposes of this section, “drug-free workplace” means a site for the performance of work done in connection with the Agreement by Contractor where its employees 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 Agreement.

(h) NO EMPLOYMENT OF UNAUTHORIZED ALIENS

Contractor represents and warrants that Contractor does not, and shall not during the performance of this Agreement, knowingly employ any unauthorized alien as defined in the Federal Immigration Reform and Control Act of 1986.

(i) STATEMENT OF NONDISCRIMINATION AGAINST FAITH-BASED ORGANIZATIONS

The Authority does not discriminate against faith-based organizations. (See Va. Code § 2.2-4343.1).

(j) PROMPT PAYMENT REQUIREMENTS

Within seven days after Contractor receives amounts paid for work subject to the Agreement performed by any “subcontractor,” as defined in Code of Virginia § 2.2-4347, Contractor shall take one of the two following actions:

- (1) Pay the subcontractor for the proportionate share of the total payment received from Owner attributable to the work performed by the subcontractor; or
- (2) Notify Owner and the subcontractor in writing of Contractor’s intent to withhold all or part of the subcontractor’s payment and the reason for nonpayment.

(k) Contractor shall provide its Federal employer identification number with each application to Owner for payment.

(l) Contractor shall pay interest to any “subcontractor” on all amounts owed by Contractor that remain unpaid after seven days following receipt by Contractor of payment from Owner for work performed by such subcontractor relating to the Agreement except as to amounts withheld as retainage.

(m) Contractor shall include in 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.

(n) No obligation imposed by this section shall be construed to create any obligation of Owner under Code of Virginia § 2.2-4354, no modification to the Agreement may be made for the purpose of providing reimbursement for the interest charge, and Contractor shall not invoice Owner for any such charge.

(o) LIMITATION ON OWNER’S LIABILITY FOR INTEREST

Owner shall not be liable to pay any interest to Contractor under any circumstance except in the case of amounts that Owner does not dispute to be due and payable to Contractor; interest shall accrue beginning on the 60th day after payment is due at a rate of 3% per annum.

(p) AUTHORIZATION TO CONDUCT BUSINESS IN VIRGINIA

The provisions of Va. Code § 2.2-4311.2 are incorporated by reference. If Contractor is a business entity described in Va. Code § 2.2-4311.2.A, Contractor must be authorized to transact business in Virginia if required by law to be so authorized and shall not allow its existence or certificate authority or registration to transact business to lapse or be revoked or cancelled during the term of the contract.

Article 4: CONDITIONS AT SITE OR STRUCTURE

- (a) All Bidders and Contractors shall visit the site and shall be responsible for having ascertained pertinent local conditions such as location, accessibility and general character of the site or building, and the character and extent of existing work within or adjacent to the site and to compare those conditions with the Contract Documents and the Legal Requirements. Claims, as a result of the Bidder's and/or Contractor's failure to comply with the foregoing, will not be considered by the Authority and are waived by the Contractor.**

If in the performance of the Contract the Contractor discovers subsurface or latent conditions at the site that are materially different from those typical for the locality or indicated in the Contract Documents, the Contractor shall report the conditions to the Engineer and the Authority in writing before the conditions are disturbed. Upon such notice, or upon its own observation of such conditions, the Engineer shall promptly make such recommendations as it finds necessary to address the different conditions. Any change in the cost of the work or time needed for completion must be processed pursuant to the requirements of the Contract Documents.

Article 5: EXPLANATION TO BIDDERS

No oral explanation in regard to the meaning of drawings and specifications will be made and no oral instructions will be given before the award of the contract. Bidders shall identify in writing to the Authority and the Engineer any believed discrepancies, omissions, ambiguities or errors in the Contract Documents. Bidders must submit such a writing at least six (6) days prior to the time set for the receipt of bids to allow a sufficient time for a reply to reach them before the submission of their bids, but if there are two (2) weeks or less between the first bid advertisement and the time set for receipt of bids, then bidders may act up to three (3) days prior to the time set for receipt of bids. Any interpretation made will be in the form of an addendum to the specifications, which will be forwarded to all bidders, and its receipt by the bidder shall be acknowledged on the Bid Form.

Article 6: PREPARATION AND SUBMISSION OF BIDS

- (a) Bids shall be submitted in duplicate on the forms furnished, or true copies thereof, and shall be signed in ink. Erasures or other changes in a bid shall be explained or noted over the signature of the bidder. Bids containing any conditions, omissions, unexplained erasures, alterations or items not called for in the proposal, or irregularities of any kind, may be rejected by the Authority as being incomplete.**
- (b) Each bid must give the full business address and contact information for the bidder and must be signed by a person with authority to bind the bidder. Bids by partnerships must furnish the full name of all partners and must be signed in the partnership name by one of the members of the partnership or an authorized representative, followed by the signature and designation of the person signing. Bids by corporations must be signed with the legal name of the corporation followed by the name of the state in which they are incorporated and by the signature and designation of the president, secretary or other person authorized to bind it in the matter. The name of each person signing shall also be typed or printed below the signature. A bid by a person who affixes to its signature the word "President," "Secretary," "Agent," or other designation without disclosing its principal, may be held to be the bid of the individual signing. When requested by the Authority, satisfactory evidence of the authority of the officer signing on behalf of the corporation shall be furnished.**
- (c) Bids with the bid guarantee shall be enclosed in a sealed envelope, which shall be marked and addressed as indicated by the advertisement or invitation to bid. Prior to submitting a bid, the bidder must be in compliance with and have the licenses required under Virginia Code Section 54.1-**

1100, et seq. The bidder shall place on the outside of the envelope containing the bid and shall place in the bid over its signature whichever of the following notations is appropriate, inserting its Contractor license number.

If the bidder shall fail to provide this information on its bid or on the envelope containing the bid and shall fail to promptly provide the Contractor license number to the Authority in writing when requested to do so before the opening of bids, its bid will not be considered.

- (d) The owner reserves the right to disqualify any Contractor and refuse to accept the bid of any bidder which has been convicted, or entered a plea of guilty or nolo contendere in any federal or state court to any charge involving any unlawful, corrupt or collusive practice involving a public contract either federal, state, or local or which has been determined in any judicial proceeding to have violated any antitrust, bid-rigging or collusive practice statute in connection with any public contract, or against whom such formal criminal prosecution or other judicial proceeding has been initiated.

Article 7: BID GUARANTEE

- (a) Any bid exceeding Five Hundred Thousand Dollars (\$500,000) shall be accompanied by a bid guarantee of not less than five percent (5%) of the amount of the bid, which may be certified check or cashier's check, or a Bid Bond made payable to the Authority. Bid Bonds shall be submitted on AIA Document A310. Such Bid Bond or check shall be submitted with the understanding that it shall guarantee that the bidder will not withdraw its bid during the period up to and including ninety (90) days following the opening of bids; that if its bid is accepted, it will enter into a formal contract with the Authority in accordance with the Form of Construction Contract included as a part of the Contract Documents, and that the referenced Performance Bond and Labor and material Payment Bond will be given; and that in the event of the withdrawal of the bid within the period, or failure to enter into the contract and give the bonds within ten (10) days after it has received notice of acceptance of its bid, the bidder shall be liable to the Authority for the difference between the amount of the bidder's bid and the amount of the bid for the next higher bidder to perform the Work but such amount shall not exceed the amount of the bid guarantee.
- (b) The Bid Bonds and checks will be returned to all except the three lowest bidders after the formal opening of the bids. The remaining Bid Bonds and checks will be returned to the lowest bidders after the Authority and the accepted bidder have executed the Contract and the Performance Bond and the Payment Bond have been approved by the Authority.
- (c) If the required Contract and bonds have not been executed within ninety (90) days after the date of the opening of the bids, then the bond or check of any bidder will be returned upon its request, provided it has not been notified of the acceptance of the bid prior to the date of such request.

Article 8: WITHDRAWAL OR MODIFICATION OF BIDS

A bidder may withdraw or modify its bid only by written notice delivered to the Authority prior to the time fixed for receipt of bids.

Article 9: RECEIPT AND OPENING BIDS

- (a) It is the responsibility of the bidder to assure that its bid is delivered to the place designated for receipt of bids and prior to the time set for receipt of bids. The Authority will not consider bids received after the time set for receipt of bids.
- (b) Bids will be opened at the time and place stated in the advertisement and the lowest bidder will be announced. The officer or agent of the Authority, whose duty it is to open the bids, will decide when the specified time has arrived. No responsibility will be attached to any officer or agent for the premature opening of a bid not properly addressed and identified.

Article 10: ERRORS IN BIDS

A bidder may withdraw its bid from consideration if the price bid was substantially lower than the other bids due solely to a mistake in the bid, provided the bid was submitted in good faith, and the mistake was a clerical mistake as opposed to a judgment mistake, and was actually due to an unintentional arithmetic error or an unintentional omission of quantity of work, labor or material made directly in the compilation of a bid, which unintentional arithmetic error or unintentional omission can be clearly shown by objective evidence drawn from inspection of original work papers, documents and materials used in the preparation of the bid sought to be withdrawn. Under this provision a bidder requesting to withdraw its bid shall follow the procedures set forth in Section 2.2-4330 of the Code of Virginia. The bidder must give notice in writing of its claim of right to withdraw its bid within the time frame required by Section 2.2-4330 of the Code of Virginia and shall submit its original work papers to the Authority in compliance with the requirements of Section 2.2-4330 of the Code of Virginia. Failure to strictly comply with the requirements of Section 2.2-4330 of the Code of Virginia shall constitute a waiver of the right to withdraw the bid.

No bid may be withdrawn when the result would be the awarding of the Contract on another bid of the same bidder. No bidder who is permitted to withdraw a bid shall for compensation supply any material or labor to or perform any subcontract or other work agreement for the person or firm to whom the contract is awarded or otherwise benefit, directly or indirectly, from the performance of the project for which the withdrawn bid was submitted, without the approval of the Authority. The person or firm to whom the Contract was awarded and the withdrawing bidder are jointly liable to the Authority in an amount equal to any compensation paid to or for the benefit of the withdrawing bidder without such approval.

If a bid is withdrawn under authority of this section, the next higher bidder shall be deemed to be the low bidder on the project.

Article 11: REJECTION OF BIDS

The Authority reserves the right to reject any and all bids when such rejection is in the interest of the Authority, and will reject the bid of a bidder who is not a responsible bidder. (See § 2.2-4319, Code of Virginia, 1950, as amended.)

Article 12: STANDARD FORMS

The copies of the Form of Construction Contract, and AIA Document A312, Performance Bond and the Labor and Material Payment Bond are incorporated into the General Conditions by reference and are made a part hereof to the same extent as though fully set forth herein.

Article 13: AWARD OF CONTRACT

- (a) The Contract will be awarded as soon as possible to the lowest responsive and responsible bidder, provided its bid is reasonable and it is in the interest of the Authority to accept it. The Authority reserves the right to waive any informality in bids received when such waiver is in the interest of the Authority; also to accept any item in the bid unless otherwise specified by the Authority. Each bidder shall be prepared, if so requested by the Authority, to present evidence of its experience, qualifications and financial ability to carry out the terms of the Contract.
- (b) If the bid forms contain alternate prices, the Authority may in its sole discretion, unless otherwise specified in the invitation for bid, select whatever alternates it chooses to accept subsequent to the bid opening but prior to the determination of the low bidder. The low bidder shall be determined by comparing each bidder's bid total based on the sum of the base bid and the alternates selected by the Authority.
- (c) Pursuant to the Virginia Public Procurement Act, in the event the lowest responsible bid exceeds available funds for the project, the Authority may enter into negotiations with the lowest responsible bidder in an effort to arrive at a contract amount within the limits of available funds. In such event, the Authority will inform the bidder of the amount of funds available, and will negotiate in good faith toward achieving the funding limit, preferably without any change in the scope or other change in the Contract Documents. However, negotiations may include change in scope, quantity of materials, or other changes, so long as any such changes are within the general scope of the original design. If the Authority and bidder reach agreement, the Authority may award a contract in accordance with procedures or actions approved by the Authority Board. The Authority may terminate negotiations

at any time prior to the award of a contract, and proceed as otherwise permitted by the Virginia Public Procurement Act.

Article 14: CONTRACT SECURITY

For all contracts of Five Hundred Thousand Dollars (\$500,000.00) or more, the Contractor shall deliver to the Authority or its designated representative, an AIA Document A312, Performance Bond and Labor and Material Payment Bond, each fully executed by one or more surety companies legally authorized to do business in Virginia and each in an amount equal to one hundred percent (100%) of the original Contract Sum. The bonds shall be conditioned as set forth in § 2.2-4337 of the Code of Virginia, as amended. Sureties shall be selected by the Contractor subject to approval by the Authority. No contract shall be deemed to be in effect until the bonds have been approved by the Authority. For the purposes of all Labor and Material Payment Bonds entered into pursuant to this Article, 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, whether such subcontractor had a direct contract with the Contractor or whether there were one or more other intervening subcontractors.

Article 15: PROGRESS SCHEDULES

- (a) The Contractor shall, within ten (10) days of receipt of notice of award, prepare and submit to the Authority and Engineer a schedule for the completion of the Work within the timeframe set forth in the Contract Documents. This progress schedule shall be related to the entire Project; shall include all the Work; and shall meet the time for completion requirements of the Contract. It shall include an allowance for anticipated delay caused by ordinary adverse weather conditions and shall provide for the expeditious and practical execution of the Work within the time requirements of the Contract Documents. The schedule shall set forth as much detail as deemed necessary by the Authority.
- (b) The Authority’s acceptance of the schedule is not a representation or agreement that the schedule is logical or can be performed in the time or sequence indicated, but only that the Authority approves of the construction in that time and in that sequence.

Article 16: SHOP DRAWINGS, PRODUCT DATA and SAMPLES

- (a) Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or any Subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.
- (b) Product Data are illustrations, standard schedules, performance charts, instruction, brochures, diagrams and other information furnished by the Contractor to illustrate a material, product or system for some portion of Work.
- (c) Samples are physical examples, which illustrate materials, equipment or workmanship and establish standards of quality and esthetics by which the Work will be judged.
- (d) The Contractor shall review, approve and submit, with reasonable promptness and in such sequence as to cause no delay in the Work or in the work of the Authority or any separate contractor, all Shop Drawings, Product Data and Samples required by the Contract Documents.
- (e) By preparing and submitting Shop Drawings, Product Data and Samples, the Contractor represents that it has determined and verified all materials, field measurements, and field construction criteria related thereto, or will do so, and that it has checked and coordinated the information contained within such submittals with the requirements of the Work and the Contract Documents.
- (f) The Contractor shall not be relieved of responsibility for any deviation from the requirements of the Contract Documents by the Engineer’s approval of Shop Drawings, Product Data or Samples unless the Contractor had specifically informed the Engineer in writing of such deviation at the time of submission and the Engineer has given written approval to the specific deviation. The Contractor shall not be relieved from responsibility of errors or omissions in the Shop Drawings, Product Data or Samples by the Engineer’s approval thereof.

- (g) The Contractor shall direct specific attention, inviting or on resubmitted Shop Drawings, Product Data or Samples, to revisions other than those requested by the Engineer on previous submittals.
- (h) No portion of the Work requiring submission of a Shop Drawing, Product Data or Sample shall be commenced until the submittal has been approved by the Engineer. All such portions of the Work shall be in accordance with approved submittals.

Article 17: MATERIALS, SERVICES, AND FACILITIES

- (a) Materials and equipment shall be so stored as to insure the preservation of their quality and fitness for the work. Stored materials and equipment to be incorporated in the Work shall be located so as to facilitate prompt inspection.
- (b) Manufactured articles, materials, and equipment shall be stored, applied, installed, connected, erected, used, cleaned, and conditioned as directed by the manufacturer, and as approved by the Engineer.
- (c) Materials, supplies, and equipment shall be in accordance with samples, shop drawings, and catalogue cuts submitted by the Contractor and approved by the Engineer and Authority.
- (d) Materials, supplies, or equipment to be incorporated into the work shall not be purchased by the Contractor or the Subcontractor subject to a chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller.
- (e) All Work included in this Contract shall be performed to the standards specified. The Contractor shall employ no plant, equipment, materials, methods or persons to which the Engineer or the Authority reasonably objects, and shall remove no plant, equipment or other facilities from the site of the work without permission of the Engineer and the Authority. The Contractor's failure to comply with these requirements will constitute a breach of Contract and as such may result in a termination of the Contractor by the Authority.

Article 18: INSPECTION AND TESTING

- (a) All materials and equipment used in the construction of the Project shall be subject to adequate inspection and testing in accordance with generally accepted industry standards and the Legal Requirements as defined in the Contract Documents.
- (b) If the Contract Documents or the Legal Requirements require any part of the Work to specifically be inspected, tested or approved by someone other than the Contractor, the Contractor shall initiate and coordinate those inspections, test, or approvals with the proper authorities and shall give the Engineer and the Authority three (3) working days written notice of each such inspection. The Contractor shall then furnish the Engineer and the Authority with the required certificates of inspection, testing or approval. Unless otherwise specifically provided for, the Contractor shall bear all costs of such inspections, tests or approvals.
- (c) Inspection, test, or approvals by the Engineer or others will not relieve the Contractor from its obligations to perform the Work in accordance with the requirements of the Contract Documents.
- (d) The Authority, the Engineer and their representatives shall at all times have access to the Work. In addition, authorized representatives and agents of any participating federal, state or local agency shall be permitted to inspect all work, materials, payrolls, records of personnel, invoices of materials, and other relevant data and records. All such records shall remain available and accessible during performance of the Contract and until three years from the date of Final Payment, or, in case of dispute, for a period of three years after resolution of the dispute, whichever is later. The Contractor shall provide proper facilities for such access and observation of the Work and also for any inspection or testing thereof.
- (e) If any work is covered without the approval of the Engineer contrary to requirements of the Contract Documents, it must, if requested by the Engineer or the Authority, be uncovered for its observation and then recovered at the Contractor's expense.

- (f) If the Engineer or the Authority considers it necessary or advisable that approved covered work be inspected or tested by others, the Contractor, at the Engineer's or the Authority's request, shall uncover, expose or otherwise make that portion of the Work available for observation, inspection or testing as the Engineer or the Authority may require. If it is found that such work is defective, the Contractor will bear all the expenses of such uncovering, exposure, and observation as well as all expenses for the inspection, testing, and satisfactory reconstruction of that portion of the Work. If, however, such work is not found to be defective, the Contractor will be allowed an increase in the Contract Price or an extension of the Contract Time or both, directly attributable to such uncovering, exposure, observation, inspection, testing, and reconstruction, and an appropriate Change Order will be issued.

Article 19: SUBSTITUTIONS

- (a) After the Contract has been executed, the Authority and the Engineer will consider a written request for the substitution of products or materials specified by the Contract Documents. The Authority is not obligated to consider substitutions and such consideration is the Authority's sole discretion. By making requests for substitutions, the Contractor represents and certifies:
- (1) that the Contractor has personally investigated the proposed substitute product or material and determined that it is equal or superior in all respects to that specified by the Contract Documents.
 - (2) that the Contractor will provide the Authority with a warranty of the substituted product equal or superior to the warranty furnished in connection with the product or material originally specified by the Contract Documents.
 - (3) that the cost data presented is complete and includes all related costs under this Contract and Contractor waives all claims for any additional costs related to the substitution; and
 - (4) that the Contractor will coordinate the installation of the substituted product or material and that the Contractor will make all changes necessitated by the use of the substituted product without any additional cost to the Authority.

Article 20: PATENTS

The Contractor shall pay all applicable royalties and license fees. It shall defend all suits or claims for infringement of any patent rights and save the Authority harmless from loss on account thereof, except that the Authority will be responsible for any such loss when a particular process, design or the product of a particular manufacturer or manufacturers as specified is an infringement of a patent. However, if the Contractor has reason to believe that such particular process, design or product is an infringement, he shall be responsible for such loss unless he gives written notice to the Authority and the Engineer of the possible infringement.

Article 21: SURVEYS, PERMITS, REGULATIONS

- (a) The Authority will furnish all boundary surveys and establish all baselines for locating the principal component parts of the Work together with suitable number of benchmarks adjacent to the Work as shown in the Contract Documents.
- (b) Permits and licenses of a temporary nature necessary for the prosecution of the work, such as building, plumbing, and electrical permits, shall be secured and paid for by the Contractor unless otherwise stated in the Contract Documents. Permits, licenses, and easements for permanent use of structures or permanent changes in existing facilities shall be secured and paid for by the Authority unless otherwise specified.
- (c) The Contractor shall give all notices and comply with all permits and the Legal Requirements in the performance of the Work. The Contractor shall promptly notify the Engineer in writing if it comes to its attention that the Contract Documents are at variance with any such requirement.

- (d) If any permit, license or certificate expire, be revoked, terminated or suspended because of any act or omission of the Contractor, it shall not be entitled to any additional compensation for direct costs or to an extension of the Contract Time.
- (e) Permits obtained by the Authority for this Project are available for inspection in the Authority's offices.

Article 22: PROTECTION OF WORK, PROPERTY AND PERSONS

- (a) The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work, in compliance with industry standards and the Legal requirements. Contractor shall take all necessary precautions for the safety of and shall provide the necessary protection to prevent damage, injury or loss to all employees on the work and other persons who may be affected thereby, all the work and all materials or equipment to be incorporated therein, whether in storage on or off the site, and other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation or replacement in the course of construction. In case of suspension of work for any cause whatever, the contractor shall be responsible for the Project and shall take such precautions as may be necessary to prevent damage to the Work, provide for proper drainage and shall erect any necessary temporary structures, signs, or other facilities at its expense. During such period or suspension of work, the Contractor shall properly and continuously maintain in acceptable growing condition all living material in newly established plantings, seedings, and sodding furnished under this Contract, and shall take adequate precautions to protect new growth and other important growth against injury. Contractor shall also notify owners of adjacent utilities when prosecution of the Work may affect them.
- (b) In emergencies affecting the safety of persons or the Work or property at the site or adjacent thereto, the Contractor shall act, at its discretion, to prevent threatened damage, injury or loss. Any additional compensation or extension of time claimed by the Contractor on account of emergency work shall be determined as provided in the Contract Documents.

Article 23: SUPERVISION BY CONTRACTOR

- (a) The Contractor shall supervise and direct the work. It shall be solely responsible for the means, methods, techniques, sequencers and procedures of construction. The Contractor shall employ and maintain on the work a qualified supervisor or superintendent ("Supervisor") and provide a resume of its experience. This Supervisor shall have been designated in writing as the Contractor's representative at the site and shall not thereafter be changed unless such change is approved by or directed by the Authority. The Authority shall have the right to approve this Supervisor or order its removal from the job site, which right shall not be unreasonably exercised. This Supervisor shall have full authority to act on behalf of the Contractor and all communications given to the Supervisor shall be as binding as if given to the Contractor. This Supervisor shall be present on the site at all times as required to perform adequate supervision, control and coordination of the Work as determined by the Engineer or the Authority.
- (b) The Contractor shall be responsible to the Authority for the acts and omissions of its employees, Subcontractors and their agents and employees, and other persons performing any of the Work under a contract with the Contractor.
- (c) The Contractor shall not be relieved from its obligations to perform the Work in accordance with the Contract Documents either by the activities or duties of the Engineer and the Authority in their administration of the Contract or by inspections, tests, or approvals required or performed by persons other than the Contractor.
- (d) Prior to commencing work, the Contractor shall check all work performed by others that is necessary for the execution of the Contractor's work and shall promptly report to the Engineer in writing any deficiencies in such work which render it unacceptable or unsuitable for the Contractor's Work or which will increase the cost of the Work. Failure to give such written notice shall relieve the Authority of any responsibility therefore. The Contractor shall be responsible for all elevations, grades, and proper fitting of its Work.

Article 24: CHANGES IN THE WORK

- (a) The Authority, without invalidating the Contract, may order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, with the Contract Sum and the Contract Time being adjusted accordingly. All such changes in Work shall be authorized by written Change Order signed by the Authority and the Engineer, and shall be performed under the applicable conditions of the Contract Documents.
- (b) The cost or credit to the Authority resulting from a change in the Work shall be determined in one or more of the following ways:

 - (1) by mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
 - (2) by unit prices stated in the Contract Documents or subsequently agreed upon;
 - (3) by cost to be determined in a manner agreed upon by the parties and a combined overhead and profit of 15% of such costs if the Contractor performs the work with its own forces, or 15% for the combined overhead and profit of a Subcontractor performing the work with its own forces and 5% for the Contractor; in no event shall the total mark-up for overhead and profit exceed 20% of the cost; or
 - (4) by the method provided in Article 25(c).
- (c) If none of the methods set forth above is agreed upon, the Contractor, provided it receives a Construction Change Directive signed by the Authority, shall promptly proceed with the Work involved. The cost of such Work shall then be determined by the Engineer on the basis of the reasonable expenditures and savings of those performing the Work attributable to the change, including, in the case of an increase in the Contract Sum, a reasonable allowance for overhead and profit. In such case, and also under Article 25(b)(3) above, the Contractor shall keep and present, in such form as the Engineer may prescribe, an itemized accounting together with appropriate supporting data of the costs for inclusion in a Change Order. Unless otherwise provided in the Contract Documents, costs shall be limited to the following: cost of materials, including sales tax and cost of delivery,, cost of labor, including social security, unemployment insurance, and fringe benefits required by agreement or custom; workers' or workmen's compensation insurance; bond premiums; and rental value of equipment and machinery. The amount of credit to be allowed by the Contractor to the Authority for any deletion or change that results in a net decrease in the Contract Sum will be the amount of the actual net cost as confirmed by the Engineer. When both additions and credits covering related Work or substitutions are involved in any one change, the allowance for overhead and profit shall be figured on the basis of the net increase, if any, with respect to that change.
- (d) The Engineer or the Authority also may at any time by issuing a Field Order, make changes in the details of the Work. The Contractor shall proceed with the performance of any changes in the work so ordered and should the Contractor believe that such Field Order entitles it to a change in Contract Price or Time, or both, it shall give the Engineer and the Authority Written Notice thereof within ten days after the receipt of the Field Order. Failure to provide such written notice shall be deemed a waiver of any claims arising from or relating to the Field Order. Failure to proceed with work changed by a Field Order or a Change Order shall constitute a breach of contract and shall be cause for the termination of the Contract. All requests for a Change Order arising out of a Field Order must have a copy of the referenced Field Order attached.
- (e) Where the Work is contracted for on a unit price basis and the actual quantity of work for any pay item exceeds the estimated quantity by more than 25% of that amount stated in the Contract Documents, a Change Order will be issued for any increase or decrease in unit cost, which results from the increased work. If the quantity variation is such as to cause an increase in the time necessary for completion, the Authority shall, upon receipt of a written request for an extension of time, make an appropriate adjustment for extending the completion date in accordance with Article 26.

Article 25: CHANGES IN THE CONTRACT SUM OR OTHER RELIEF

- (a) If the Contractor wants to make a claim for an increase in the Contract Sum, or for any other relief under the Contract, it shall give the Engineer and the Authority written notice of the claim within ten (10) days after the occurrence of the event giving rise to such claim. This notice shall be given by the Contractor before proceeding to execute any additional Work, except in an emergency endangering life or property. The notice shall set forth the basis for the claim and the relief or increase in the Contract Sum requested by the Contractor. After providing notice of its claim, Contractor shall provide the Authority and the Engineer with any information and/or documents requested by them to evaluate the claim. No such claim shall be valid unless so made. If the Authority and the Contractor cannot agree on the amount of the adjustment in the Contract Sum, it shall be determined by the Engineer in accordance with Article 40(e). Any change in the Contract Sum resulting from such claim shall be authorized by Change Order.
- (b) If the Contractor claims that additional cost is required because of, but not limited to,
 - (1) any written interpretation of the Contract Documents;
 - (2) any order by the Authority to stop the Work where the Contractor was not at fault; or
 - (3) any Field Order directed change in the Work; the Contractor shall make such claim as provided in Article 25(a).

Article 26: TIME FOR COMPLETION AND LIQUIDATED DAMAGES

- (a) All time limits stated in the Contract Documents are of the essence of the Contract.
- (b) The Contractor shall proceed with the Work with the diligence necessary to insure Substantial Completion within the Contract Time. It is expressly understood and agreed by and between the Contractor and the Authority that the Contract Time for the completion of the Work described herein is a reasonable and adequate time, taking into consideration the average climate and economic conditions and other factors prevailing in the locality of the Work.
- (c) If the Contractor shall fail to Substantially Complete the Work within the Contract Time, or extension of time granted by the Authority, then the Contractor shall pay to the Authority liquidated damages as specified in the Contract Documents for each calendar day after the date of Substantial Completion until the Work achieves Substantial Completion. Contractor agrees that the amount of liquidated damages is reasonable and waives any right it may have to contest the amount of liquidated damages as being unreasonable or a penalty. If liquidated damages are not set forth in the Contract Documents, Contractor shall be liable to Owner for any loss or damage arising from the Contractor's failure to complete the Work by the date of Substantial Completion.
- (d) If the Contractor is delayed at any time in the progress of the Work by any act or neglect of the Authority or the Engineer, or by any employee of either, or by any separate contractor employed by the Authority, or by changes ordered in the Work, or by labor disputes, fire, unusual delay in transportation, unusual and adverse weather conditions that could not be reasonably anticipated, unavoidable casualties, or any causes beyond the Contractor's control, or by delay authorized by the Authority, then the Contract Time shall be extended by Change Order for such reasonable time as the Engineer may determine.
- (e) Any claim for extension of time shall be made in writing to the Engineer and the Authority within (10) days after the commencement of the event giving rise to or causing the claimed delay; otherwise it shall be waived. The notice shall set forth the basis for the extension of time and any other relief requested by the Contractor. After providing notice of its claim, Contractor shall provide the Authority and the Engineer with any information and/or documents requested by them to evaluate the claim. In the case of a continuing delay only one notice of claim is necessary. The Contractor shall precisely identify the delay and its cause, and provide an estimate of the probable effect of such delay on the progress of the Work.
- (f) Contractor hereby expressly waives any claims against the Authority and the Engineer for any indirect or direct damages, costs or expenses which the Contractor or its Subcontractors may incur as a result of any delay in the performance of the Contract, except and then only to the extent that

the delay is caused by any act or omission of the Authority or the Engineer, or their agents or employees, and is due to causes within their control. In such event, Contractor may seek direct costs arising solely from the delay but shall not be entitled to any indirect costs including, without limitation, home office overhead costs. It is understood and agreed that the Contractor's sole and exclusive remedy in case of any noncompensable delay shall be an extension of the Contract Time, but only as determined in accordance with the provisions of the Contract Documents.

- (g) In the event that Contractor has incurred a delay for which it believes it is entitled to compensation under this Contract, it shall give the Authority written notice of that claim within ten (10) days of the commencement of the delay, and shall identify what it considers to be the cause of and expected duration of the delay.

Article 27: CORRECTION OF WORK

- (a) The Contractor shall promptly remove from the premises all work rejected by the Engineer or the Authority for failure to comply with the Contract Documents whether incorporated in the construction or not, and the Contractor shall promptly replace and re-execute the work in accordance with the Contract Documents and without expense to the Authority and shall bear the expense of making good all work of other Contractors destroyed or damaged by such removal or replacement.
- (b) Unauthorized work shall be any work done or materials ordered by the Contractor prior to receipt of the Notice to Proceed, previously rejected work incorporated into the Project, work done contrary to or regardless of the instructions of the Engineer, extra work performed without proper written authority, work done beyond the limits shown on the Plans, except as herein specified, any extra work done without written authority from the Engineer or the Authority, or any work done after discovery of a discrepancy, ambiguity, or inconsistency and before the Engineer provides any necessary instructions to the Contractor. The Authority shall not pay for unauthorized work. Unauthorized work may, at the Authority's sole discretion, be ordered removed or replaced at the Contractor's expense.

Article 28: SUSPENSION OF WORK; THE AUTHORITY'S RIGHT TO STOP AND CARRY OUT THE WORK

- (a) The Authority may order the Contractor in writing to suspend, delay, or interrupt all or any part of the Work for such period of time as it may determine to be appropriate for the convenience of the Authority.

- (b) **The Authority's Right to Stop the Work**

If the Contractor fails to correct defective Work as required, fails to carry out the Work in accordance with the Contract Documents, or if an emergency situation exists that threatens the safety of persons or property, the Authority, in addition to any other remedies it may have, by a written notice direct the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated. Contractor shall be liable to the Authority for any loss of damages arising from the stoppage of the Work including, without limitation, any loss or damage arising from a delay in the completion of the Work.

- (c) **Authority's Right to Carry Out the Work**

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within two (2) days after receipt of written notice from the Authority to commence and continue correction for such default or neglect with diligence and promptness, the Authority may, after two (2) days following receipt by the Contractor of an additional written notice of its decision to do so, make good such deficiencies without prejudice to any other remedy it may have. In such case an appropriate Change Order shall be issued deducting from the payments then or thereafter due the Contractor the cost of correcting such deficiencies, including compensation for the Engineer's additional services or other services as may be required and made necessary by such default, neglect or failure. If the payments then or thereafter due the Contractor are not sufficient to cover such amount, the Contractor shall pay the difference to the Authority. All charges and back charges made against monies otherwise owed to or due to the Contractor shall be deemed accepted

unless the Contractor rejects them in writing to the Authority within ten (10) days of receipt and states fully its reasons for rejecting them.

Article 29: TERMINATION

- (a) If the Contractor is adjudged a bankrupt or insolvent, or if it makes a general assignment for the benefit of its creditors, or if a trustee or receiver is appointed for the Contractor or for any of its property, or if it files a petition to take advantage of any debtor's act, or to reorganize under the bankruptcy or applicable laws, or if it fails to supply sufficient skilled workmen or suitable materials or equipment, or if it fails to make prompt payments to subcontractors or for labor, materials or equipment, or if it refuses or fails to prosecute the Work or any separable part thereof, with such diligence as will insure its completion within the Contract Time, or if it fails to complete the Work within the Contract Time required, or if it disregards laws, ordinances, rules, regulations, directions or orders of any public body having jurisdiction over the Work, or if it disregards the authority of the Engineer, or if it otherwise violates any provision of the Contract Documents, then the Authority may, without prejudice to any other right or remedy, seven (7) days after delivery of a written notice to the Contractor and its surety, terminate the services of the Contractor and take possession of the Project and of all materials, equipment, tools, construction equipment and machinery thereon owned by the Contractor, and finish the Work by whatever method it may deem expedient. In such case, the Contractor will not be entitled to receive any future payment until the Work is finished. If the unpaid balance of the Contract Price exceeds the direct and indirect costs of completing the Project, including compensation for additional professional services, such excess will be paid to the Contractor. If such costs exceed such unpaid balance, the Contractor shall pay the difference to the Authority. Such cost incurred by the Authority will be determined by the Engineer and incorporated in a Change Order.
- (b) If termination for cause by the Authority is deemed to be improper, it shall be deemed a termination for convenience.
- (c) Where the Contractor's services have been so terminated by the Authority, the termination shall not affect any rights the Authority then has or that may thereafter accrue against the Contractor. Any retention or payment of monies by the Authority due the Contractor will not release the contractor from compliance with the Contract Documents.
- (d) Termination for Convenience

The Authority may, effective not less than after seven (7) days from delivery of a written notice to the Contractor, without cause and without prejudice to any other rights or remedies it may have, terminate this Construction Contract for its own convenience for any reason. When this Construction Contract has been terminated for convenience, the Contractor shall be paid only for Work performed through the date of termination. The Contractor shall not be entitled to anticipated profits on unperformed portions of the Work.

Article 30: USE OF THE PREMISES

- (a) The Authority will have the right to enter the premises for the purpose of doing work not covered by the Contract Documents. This provision shall not be construed as relieving the Contractor of the sole responsibility for the care and protection of the Work or the restoration of any damaged work, except such as may be caused by agents or employees of the Authority.
- (b) Prior to Substantial Completion, the Authority, with the concurrence of the Contractor, may use any completed or substantially completed portion of the Work. Such use shall not constitute a final acceptance of such portions of the Work unless otherwise stated so in writing.

Article 31: PAYMENTS TO THE CONTRACTOR

- (a) Prior to submitting its first application for payment, the Contractor shall submit to the Authority and the Engineer a schedule of values allocating the costs of the various portions of the Work, prepared in such form and supported by such data to substantiate its accuracy as may be required by the Authority and the Engineer. This schedule, as approved, shall be used as a basis for

Contractor's applications for payment, which shall be submitted on the current edition of the AIA Application and Certification for Payment ("Application for Payment"), AIA Document G702.

- (b) At least twenty days before each progress payment falls due (but not more than once a month), the Contractor, the Engineer, and the Authority shall meet at the Project to determine the percentage of completion of the individual items in the schedule of values. If no agreement is reached, the Contractor shall prepare its Application for Payment using percentages it considers correct. Thereafter, the Contractor shall submit to the Engineer three (3) copies of its completed and signed Applications for Payment covering the work performed during the period of the Application for Payment and supported by such data as the Engineer may reasonably require. If payment is requested on the basis of materials and equipment not incorporated in the Work, the Application for Payment shall also be accompanied by such supporting data, satisfactory to the Engineer, as will protect the Authority's interests therein, including applicable insurance. See Article 32(c). The Engineer will, within fifteen days after receipt of each Application for Payment, either certify in writing its approval of payment for an amount based either on the agreed percentages of completion or the percentages the Engineer considers correct and present the Application for Payment to the Authority, or return the Application for Payment to the contractor stating in writing its reasons for refusing to approve payment. If payment has been refused, the Contractor may make the necessary corrections and resubmit the Application for Payment to the Engineer. The Authority will, within thirty days of its receipt of an approved Application for Payment, pay the Contractor a progress payment in the amount certified by the engineer, unless the Authority has reason to refuse payment of that amount in whole or in part, in which event it shall state its reasons in writing to the Contractor. The Authority will retain five (5) percent of the amount of each payment due until final completion and acceptance of all work. However, the Authority may, in its sole discretion, reduce the amount retained to 150% of the value of work remaining when the work is substantially complete. The decision to reduce retainage and the amount of such reduction shall be solely that of the Authority. On completion and acceptance of a part of the Work on which the price is stated separately in the Contract Documents, payment may be made in full, including retained percentages less authorized deductions. Prior to receiving each payment, and as part of its Applications for Payment, the Contractor shall certify in writing that it has made payment from the proceeds of prior payments and that it will make timely payments from the proceeds of progress and final payment then due it, to its subcontractors and suppliers in accordance with its contractual arrangement with them. If requested by the Authority, the Contractor shall provide evidence of such payments, including affidavits by subcontractors and suppliers.
- (c) The Application for Payment may also include an allowance for the cost of major materials and equipment not yet incorporated in the Work. When requested in writing by the Contractor and approved in writing by the Authority, payment will be made for nonperishable major material and equipment delivered and properly stored at the Work site or other approved site. Material for which payment has been made, wholly or partially, shall not be removed from the Work site or other approved site unless authorized by the Authority in writing.
- (d) The Contractor shall indemnify and save the Authority and its agents harmless from all losses, damages, liabilities, including attorney's fees, arising out of the demands of Subcontractors, laborers, workmen, mechanics, materialmen and furnishers of machinery parts thereof, equipment, tools, and all supplies incurred in the furtherance of the performance of the Work. The Contractor shall, at the Engineer's request, furnish satisfactory evidence that all obligations of the nature designated above have been paid, discharged, or waived. If the Contractor fails to do so, the Authority may, after having notified the Contractor, either pay unpaid bills or withhold from the Contractor's unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged whereupon payment to the Contractor will be resumed in accordance with the terms of the Contract Documents. In no event, however, shall the provisions of the foregoing sentence be construed to impose any obligations upon the Authority to either the Contractor, its Surety, or any third party. In paying any unpaid bills of the Contractor, any payment so made by the Authority will be considered as a payment made under the Contract Documents by the Authority to the Contractor and the Authority will not be liable to the Contractor for any such payments in good faith.
- (e) If the Authority fails to make a payment when due under the terms of this Contract, interest shall accrue on monies due and owing at the rate of 3% per annum commencing sixty (60) days after the date the payment was due.

- (f) The Authority may reduce in whole or in part any approved Application for Payment, whether or not it has been paid, to the extent necessary to protect the Authority from loss because of:
- (1) defective Work not remedied;
 - (2) failure to timely or properly pay Subcontractors;
 - (3) evidence that the Work cannot be completed for the amount remaining to be paid; or
 - (4) damage to the Authority;
 - (5) a persistent failure to carry out the Work in accordance with the Contract Documents.

Article 32: SUBSTANTIAL COMPLETION OF THE WORK

- (a) When the Contractor considers that the Work or, if agreed to by the Authority, a designated portion thereof is Substantially Complete as defined in Article 1, the Contractor shall prepare for submission to the Engineer a list of items to be completed or corrected. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. When the Engineer on the basis of its inspection determines that the Work or designated portion thereof is Substantially Complete, it will then prepare a Certificate of Substantial Completion which shall establish the Date of Substantial Completion, shall state the responsibilities of the Authority and the Contractor for security, maintenance, heat, utilities, damage to the Work, and insurance, and shall fix the time within which the Contractor shall complete the items listed therein. Warranties required by the Contract Documents shall commence on the Date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion. The Certificate of Substantial Completion shall be submitted to the Authority and the Contractor for their written acceptance of the responsibilities assigned to them in such Certificate.
- (b) Upon Substantial Completion of the Work or designated portion thereof and upon application by the Contractor and certification by the Engineer, the Authority shall make payment, reflecting adjustment in retainage, if any, for such Work or portion thereof, as provided in the Contract Documents.

Article 33: FINAL COMPLETION AND FINAL PAYMENT

- (a) Upon receipt of written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Engineer will promptly make such inspection and, when it finds the Work acceptable under the Contract Documents and the Contract fully performed, it will promptly issue a final Certificate for Payment stating that to the best of its knowledge, information, and belief, and on the basis of its observations and inspections, the Work has been completed in accordance with the terms and conditions of the Contract Documents and that the entire balance stated therein is due and payable to the Contractor. If the Contractor has completed all of the requirements and conditions, Final Payment shall be made within 30 days of receipt of the Contractor's Application. The Engineer's Final Certificate for Payment will constitute a further representation that the conditions precedent to the Contractor's being entitled to final payment as set forth in Article 32(b) have been fulfilled.
- (b) Neither the final payment nor the remaining retained percentage shall become due until the Contractor submits to the Engineer (1) an affidavit that all payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Authority or its property might in any way be responsible, have been paid or otherwise satisfied, (2) consent of surety, if any, to final payment, (3) if required by the Authority, other data establishing payment or satisfaction of all such obligations, such as receipts, release and waivers of liens arising out of the Contract, to the extent and in such form as may be designated by the Authority, (4) two (2) binders containing all product and equipment manuals, warranties and guarantees, and (5) as-built drawings. If any Subcontractor refuses to furnish a release or waiver required by the Authority, the Contractor may furnish a bond satisfactory to the Authority to indemnify it against any such lien. If any such lien remains unsatisfied after all payments are made, the Contractor shall refund to the Authority all

monies that the latter may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

- (c) If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by the issuance of Change Orders affecting final completion, and the Engineer so confirms, the Authority shall, upon application by the Contractor and certification by the Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance of the Contract Sum is less than the retainage stipulated in the Contract Documents, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Engineer prior to certification of such payment. Such payment shall then be made under the terms and conditions governing final payment. However, that payment shall not constitute a waiver of any claims the Authority may then or thereafter have.
- (d) The acceptance of final payment shall constitute a waiver of all claims by the Contractor except those previously made in writing, properly reserved pursuant to these General Conditions, and identified by the Contractor as unsettled at the time of the final Application for Payment. Such contractual claims, whether form money or other relief, shall be submitted in writing not later than 60 days after final payment. The Authority's Capital Programs Director shall review such contractual claims and issue a final decision in writing within 90 days after receipt.

Article 34: INSURANCE

(a) Contractor's Liability Insurance

The Contractor shall purchase and maintain such insurance as will protect it from claims set forth below which may arise out of or result from the Contractor's operations under the Contract, whether such operations be by itself or by any Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

- (1) claims under workers' or workmen's compensation, disability benefit and other similar employee benefit acts;
- (2) claims for damages because of bodily injury, occupational sickness or disease, or death of its employees;
- (3) claims for damages because of bodily injury, sickness or disease, or death of any person other than its employees;
- (4) claims for damages insured by usual personal injury liability coverage, which are sustained (1) by any person as a result of an offense directly or indirectly related to the employment of such person by the Contractor, or (2) by any other person;
- (5) claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting there from; and
- (6) claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

Liability insurance shall include all major divisions of coverage and be on a comprehensive basis including:

- (1) Premises Operations (including X, C and U coverage);
- (2) Independent Contractor's Protective;
- (3) Products and Completed Operations;
- (4) Personal Injury Liability with Employment Exclusions deleted;
- (5) Contractual, including provisions for indemnity obligations under this Agreement;

- (6) Owned, non-owned and hired motor vehicles;
- (7) Broad Form Property Damage including Completed Operation

Contractor shall have and maintain the following insurance in the amounts set forth below unless otherwise agreed to by the Owner in writing:

- (1) Workers' Compensation Insurance in an amount as required by state law. Workers' Compensation per statutory limits and employer's liability in the following minimum amounts: EL Each Accident - \$500,000, EL Disease Policy Limit - \$500,000, EL Disease Each Employee - \$500,000.
- (2) Commercial General Liability Insurance including coverage for bodily injury, property damage, contractual liability and products/completed operations with a minimum coverage of \$1,000,000 per occurrence and \$2,000,000 in the aggregate. Property damage coverage shall include coverage for explosion, collapse and underground hazards. Coverage for products/completed operations shall extend for a period of three (3) years after the date of substantial completion. Property damage in the amount of not less than \$1,000,000 for any one accident. Additional limits may be required.
- (3) Comprehensive Automobile Liability Insurance for bodily injury and property damage with a minimum coverage of \$1,000,000 per occurrence and \$1,000,000 in the aggregate.
- (4) Excess or Umbrella insurance supplementing coverage under the Commercial General Liability, Comprehensive Automobile Liability Insurance and Employer's Liability Insurance policies with a minimum coverage of \$1,000,000 per occurrence and \$1,000,000 in the aggregate

The Contractor shall endorse the Authority on its insurance policy as an additional insured to protect the interests of the public. Certificates of Insurance and Additional Insured Endorsements acceptable to the Authority shall be filed with the Authority prior to commencement of the Work. These Certificates and Endorsements shall contain a provision that coverages afforded under the policies will not be cancelled until at least thirty days prior written notice has been given to the Authority. Insurance certificates must include an additional insured endorsement naming the following as an additional insured: "The Northern Virginia Regional Park Authority, its officers, directors, agents, employees, and volunteers." The endorsement must be completed on endorsement form CG 20 10 11 85 or CG 20 10 07 04 or such other form acceptable to the Authority.

(b) The Authority's Liability Insurance

The Authority shall be responsible for purchasing and maintaining its own liability insurance and, at its option, may purchase and maintain such insurance as will protect it against claims that may arise from operations under the Contract.

(c) Property Insurance

Unless otherwise provided, the Authority shall purchase and maintain property insurance upon the entire Work at the site to the full insurable value thereof. This insurance shall include the interests of the Authority, the Contractor, Subcontractors, and Sub-subcontractors in the Work and shall insure against the perils of fire and extended coverage and shall include "all risk" insurance for physical loss or damage including, without duplication of coverage, theft, vandalism and malicious mischief. If the Authority does not intend to purchase such insurance for the full insurable value of the entire Work, it shall inform the Contractor in writing prior to commencement of the Work. The Contractor may then affect insurance that will protect the interests of itself, its Subcontractors and Sub-subcontractors in the Work, and by appropriate Change Order the cost thereof shall be charged to the Authority. If not covered under the all risk insurance or otherwise provided in the Contract Documents, the Contractor shall effect and maintain similar property insurance on portions of the

Work stored off the site or in transit when such portions of the Work are to be included in an Application for Payment.

- (d) The Authority shall purchase and maintain such boiler and machinery insurance as may be required by the Contract Documents or by law. This insurance shall include the interests of the Authority, the Contractor, Subcontractor and Sub-subcontractors in the Work**
- (e) Any loss insured under Article 34(c) is to be adjusted with the Authority and made payable to the Authority as trustee for the insured's, as their interests may appear. The Contractor shall pay each Subcontractor a just share of any insurance monies received by the Contractor, and by appropriate agreement, written where legally required for validity, shall require each Subcontractor to make payments to its Sub-subcontractors in similar manner.**
- (f) If the Contractor requests in writing that insurance for risks other than those described in Article 34(c) or (d) or other special hazards be included in the property insurance policy, the Authority may, if possible and in its sole discretion, include such insurance, and the cost thereof shall be charged to the Contractor by appropriate Change Order.**
- (g) The Authority and the Contractor waive all rights against (1) each other and the Subcontractors, Sub-subcontractors, agents and employees each of the other, and (2) the Engineer and separate contractors, if any, and their subcontractors, sub-contractors, agents and employees, for damages caused by fire or other perils to the extent covered by insurance obtained pursuant to Article 34(c) or (d) or any other property insurance applicable to the Work, except such rights as they may have to the proceeds of such insurance held by the Engineer as trustee. The foregoing waiver afforded the Engineer, its agents and employees shall not extend to the liability imposed by Article 36(a). The Authority or the Contractor, as appropriate, shall require of the Engineer, separate contractors, Subcontractors and Sub-subcontractors by appropriate agreements, written where legally required for validity, similar waivers each in favor of all other parties enumerated in this Article 34(g).**
- (h) If required in writing by the Contractor, the Authority as trustee shall, upon the occurrence of an insured loss, deposit in a separate account any money so received, and shall distribute it in accordance with the interests of the parties. If after such loss no other special agreement is made, replacement of damaged work shall be covered by an appropriate Change Order.**
- (i) The Authority as trustee shall have power to adjust and settle any loss with the insurers.**
- (j) If the Authority finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion thereof, such occupancy or use shall not commence prior to a time mutually agreed to by the Authority and the Contractor and to which the insurance company or companies providing the property insurance have consented by endorsement to the policy or policies. This insurance shall not be cancelled or lapsed on account of such partial occupancy or use. Consent of the Contractor and of the insurance company or companies to such occupancy or use shall not be unreasonably withheld.**

Article 35: ASSIGNMENTS

Neither the Contractor nor the Authority shall sell, transfer, assign, or otherwise dispose of the Contract or any portion thereof, or of its rights, title, or interest therein, or its obligations thereunder, without written consent of both parties.

Article 36: INDEMNIFICATION

- (a) To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Authority, the Engineer and their agents, officers, directors and employees from and against all claims, damages, losses and expense, including but not limited to attorney's fees, arising out of or resulting from the performance of the Work, provided that any such claim, damage, loss or expense (1) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself) including the loss of use resulting therefrom and (2) is caused in whole or in part by any negligent act or omission of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity that would otherwise exist as to any party or person described in this Article.
- (b) In any and all claims against the Authority or the Engineer or any of their agents or employees by any employee of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone whose acts any of them may be liable, the indemnification obligation under this Article shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any Subcontractor under workers' or workmen's compensation acts, disability benefit acts or other employee benefit act.
- (c) The Authority shall retain such monies due or to become due the Contractor under the Contract as considered necessary by the Authority until such suits, claims for damages costs or losses have been settled or otherwise disposed of or satisfactory evidence to that effect has been furnished to the Authority.

Article 37: CONTRACTOR LIABILITY

The Contractor shall be liable to Authority for all costs the Authority incurs as a result of the Contractor's failure to perform this Contract in accordance with its terms. The Contractor's failure to perform shall include the failure of its suppliers and or Subcontractors of any tier to perform. Contractor's liability shall include, but not be limited to, (1) damages, liquidated damages, and other delay costs payable to the Authority; (2) the Authority's increased costs of performance, such as extended overhead and increased performance costs resulting from Contractor-caused delays, improper Contractor work, or termination of the Contractor; (3) warranty and rework costs; (4) liability to third parties; (5) excess costs; and (6) attorney's fees and related costs.

Article 38: SEPARATE CONTRACTS

- (a) The Authority reserves the right to let other contracts in connection with this Project. The Contractor shall afford other contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work and shall properly connect and coordinate its work with theirs. If the proper execution or results of any part of the Contractor's work depends upon the work of any other contractor, the Contractor shall inspect and promptly report to the Engineer any defects in such work that render it unsuitable for such proper execution and results. The commencement of work by the Contractor shall indicate an acceptance of the previous contractor's work.
- (b) The Authority may perform additional work related to the Project by itself, or it may let other contracts containing provisions similar to these. The Contractor shall afford the other contractors who are parties to such contracts, the Authority, if it is performing the additional work itself, reasonable opportunity for the introduction and storage of materials and equipment and the execution of work and shall properly connect and coordinate it Work with theirs.

- (c) If the performance of additional work by other contractors or the Authority is not specified in the Contract Documents prior to the execution of the Contract, Written Notice thereof shall be given to the Contractor prior to starting any such additional work. If the Contractor believes that the performance of such additional work by the Authority or others will result in additional expense to the Contractor or entitle it to an extension of the Contract Time, it may make a claim therefore as provided in Articles 25, 26 and 27.

Article 39: SUBCONTRACTING

- (a) The Contractor may utilize the services of Subcontractors – which will have been approved by the Authority prior to commencement of the work – on those parts of the Work that, under normal contracting practices are performed by Subcontractors. The Contractor shall submit a list of proposed Subcontractors prior to commencement of the Work for the Authority’s review and approval. The Contractor shall not employ a Subcontractor to which the Authority may object. The Authority shall not withhold its approval unreasonably.
- (b) The Contractor shall not award work to a single Subcontractors in excess of 50 percent of the Contract Price without prior written approval of the Authority.
- (c) The Contractor shall be fully responsible to the Authority for the acts and omissions of its Subcontractors and of persons either directly or indirectly employed by them, as it is for the acts and omissions of person directly employed by it. The Contractor shall be fully responsible for the coordination of the work of the trades, Subcontractors and suppliers, and their officers, agents and employees.
- (d) By an appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by the terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities that the Contractor, by the Contract Documents, assumes toward the Authority and the Engineer. The agreement shall preserve and protect the rights of the Authority and the Engineer under the Contract Documents with respect to the Work to be performed by the Subcontractor so that the subcontracting thereof will not prejudice such rights, and shall allow the Subcontractor, unless specifically provided otherwise in the Contractor-Subcontractor agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by these Documents, has against the Authority. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with its Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the Subcontract, copies of the Contract Documents to which the Subcontractor will be bound by this Paragraph and identify to the Subcontractor any terms and conditions of the proposed Subcontract that may be at variance with the Contract Documents. Each Subcontractor shall similarly make copies of such Documents available to its Sub-subcontractors.
- (e) Nothing contained in the Contract Documents shall create any contractual arrangement between any Subcontractor and the Authority.
- (f) Within seven (7) days after receipt of amounts paid to it, contractor shall either:
- (1) Pay its subcontractors for the proportionate share of the total payment received attributable to the work performed by the subcontractor under the contract; or
 - (2) Notify the Authority and subcontractor in writing of his intentions to withhold all or part of the subcontractor’s payment with the reasons for the nonpayment.
- (g) 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 with respect to each lower-tier subcontractor that the contractor is subject to in subparagraph (f) and Article 32(e).

Article 40: ENGINEER

- (a) The Engineer will act as the Authority's representative during the construction period and until final payment.
- (b) The Engineer will visit the site at intervals appropriate to the stage of construction to familiarize itself and determine in general if the work is proceeding in accordance with the Contract Documents. However, the Engineer will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. On the basis of its on-site observations, it will keep the Authority informed of the progress of the Work, and will endeavor to guard the Authority against defects and deficiencies in the Work of the Contractor.
- (c) The Engineer will not be responsible for and will not have control or charge of construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Work, and it will not be responsible for the Contractor's failure to carry out the Work in accordance with the Contract Documents. The Engineer will not be responsible for or have control or charge over the acts or omissions of the Contractor, Subcontractors, or any of their agents or employees, or any other persons performing any of the Work. This Article shall in no way change the Engineer's responsibilities or liability to Authority.
- (d) The Engineer will render interpretations necessary for the proper execution or progress of the Work, with reasonable promptness and in accordance with any time limit agreed upon. Either party to the Contract may make a written request to the Engineer for such interpretations.
- (e) Claims, disputes, and other matters in question between the Contractor and the Authority relating to the execution or progress of the Work or the interpretation of the Contract Documents shall be referred initially to the Engineer for decision, which it will render in writing within a reasonable time. Unless the Contractor provides written notice to the Authority and the Engineer of any objection to the Engineer's decision, the Engineer's decision shall be final and binding.
- (f) All interpretations and decisions of the Engineer shall be consistent with the intent of and reasonably inferable from the Contract Documents and will be in writing or in the form of drawings. The Engineer will endeavor to secure faithful performance by both the Authority and The Contractor, will not show partiality to either, and will not be liable for the result of any interpretation or decision rendered in good faith in such capacity.
- (g) The Engineer's decisions in matters relating to artistic effect will be final if consistent with the intent of the Contract Documents and agreed to by the Authority.
- (h) The parties agree to perform the Work, accept the interpretation or otherwise follow the decision of the Engineer so as to not delay the progress of the Work. Notwithstanding this provision, the Authority may stop the Work pending a judicial review of the Engineer's decision.
- (i) The Engineer will have authority to reject Work, which does not conform to the Contract Documents.
- (j) The Engineer will review and approve or take other appropriate action upon the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for conformance with the design concept of the Work and with the information given in the Contract Documents. Such action shall be taken with reasonable promptness so as to cause no delay. The Engineer's approval of a specific item shall not indicate approval of an assembly of which the item is a component.
- (k) The Engineer will conduct inspections to determine the dates of Substantial Completion and final completion, will receive and forward to the Authority for the Authority's review written warranties and related documents required by the Contract and assembled by the Contractor, and will issue a final Certificate for Payment upon compliance with the requirements of Article 34.
- (l) Notwithstanding any other provision to the contrary, Article 40(e) to (h) shall not apply to this project if there IS no Project Engineer.

Article 41: WARRANTY

- (a) The Contractor warrants to the Authority and the Engineer that all materials and equipment furnished under this Contract will be new unless otherwise specified and that all Work will be performed in a good and workmanlike manner and will be of good quality, free from faults and defects and in conformance with the Contract Documents and the Legal Requirements. All Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. If required by the Engineer, the Contractor shall furnish satisfactory evidence of the kind and quality of materials and equipment.
- (b) The Contractor shall promptly correct all Work rejected by the Engineer as defective or as failing to conform to the Contract Documents whether observed before or after substantial Completion and whether or not fabricated, installed, or completed. The Contractor shall bar all costs of correcting such rejected Work, including compensation for the Engineer's additional services made necessary thereby.
- (c) If, within one year after the Date of Substantial Completion of the Work or designated portion thereof or within one year after acceptance by the Authority of designated equipment or within such longer period of time as may be prescribed by law or by the terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be defective or not in accordance with the Contract Documents, the Contractor shall correct it promptly after receipt of a written notice from the Authority to do so unless the Authority has previously given the Contractor a written acceptance of such condition. This obligation shall survive termination of the Contract. The Authority shall give such notice promptly after discovery of the condition.

Article 42: CONTRACTUAL DISPUTES

Contractual claims, whether for money or for other relief, shall be submitted in writing not later than (60) sixty days after final payment; however, written notice of the Contractor's intention to file such claim must be given at the time of the occurrence or beginning of the work upon which the claim is based. A written decision upon any such claims will be made by the Authority within thirty (30) days after submittal. The Contractor may not institute legal action prior to receipt of the Authority's decision on the claim unless it fails to render such decision within 120 days. The decision of the Capital Programs Director 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 Authority to render a decision within 120 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 Authority's failure to render a decision within the time allotted 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 established for contractual claims under this Contract.

Revised 1/10/18

CONSTRUCTION CONTRACT

This Construction Contract is made this _____ day of _____, 2018 by and between NOVA Parks, 5400 Ox Road, Fairfax Station, Virginia 22039 ("Authority"), and _____ (Contractor) for the project known as _____.

Article 1.

1.1 The Contract Documents consist of this Construction Contract, the Conditions of the Contract (General Supplementary, Special, and other Conditions), the Drawings, the Specifications, all standard details that apply to any portion of the Work, and all addenda issued prior to and Change Orders issued after execution of this Construction Contract. The Contract Documents are more specifically listed in Exhibit A. Minimum contractor's liability insurance amounts are listed in Exhibit B.

Article 2. The Work

2.1 The Contractor shall furnish all labor, materials, and equipment necessary to perform _____ as shown, indicated or reasonably implied by the Contract Documents. The Work shall be done in strict accordance with the Contract Documents and all applicable federal, state, and local governmental specifications and requirements.

Article 3. Time of Commencement and Completion

3.1 The Contract Time will begin to run on the date indicated in the Authority's written Notice to Proceed. The Contractor shall start the Work within five (5) days of the date of the Notice to Proceed. The Contractor shall prosecute the work in such a manner as to achieve Substantial Completion of the base portion of the work within the time limits indicated in the Supplemental General Conditions.

3.2 If the Work is not Substantially Completed within the time required, as that time may be adjusted by Change Orders, there shall be imposed on the Contractor Liquidated Damages of \$1,000.00 per calendar day for each day beyond the Contract Time it takes to substantially complete the Work. Contractor is specifically referred to the General Conditions regarding its duties to notify the Authority in writing of any delays caused to it during the Work. The Liquidated Damages amount shall, in no event, be considered a penalty or other than the liquidated and adjusted damages to the Authority because of the delay. The Contractor and its surety agree that the stated sum per day shall be deducted and retained out of the monies which may become due hereunder and if not so deducted, the Contractor and its surety shall be liable therefore.

Article 4. Contract Sum

4.1 Authority agrees to pay Contractor _____ (Dollars) (\$ _____) for the Work including the Base Bid and Alternates _____, subject to additions and deductions by Change Order.

4.2 The Authority shall make monthly progress payments on account of the Contract Sum to the Contractor as provided in the Contract Documents for the period ending the last day of each month. Not later than fifteen (15) days after the end of the period covered by the Application for Payment, Contractor will submit to the Architect a Request for Payment based on the payment schedule of values agreed to by the Architect. The Contractor's submission of its Application for Payment, the Authority's and Architect's review, and the Authority's payment of progress and final payments shall all be in accordance with the General Conditions.

Article 5. Miscellaneous Provisions

5.1 This Contract shall be construed and enforced in accordance with the laws of the Commonwealth of Virginia.

5.2 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, or national origin, except where religion, sex, or national origin is a bona fide occupation 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.

The Contractor will include the provisions of subparagraphs A, B, and C above, in every subcontract or purchase order of over \$10,000 so that the provisions will be binding upon each subcontractor or vendor.

5.3 These terms and provisions supersede all previous communications, representations, or agreements, either oral or written, between the parties with respect to the subject matter of this Contract. This Agreement is entered into as of the day and year first written above.

NOVA Parks

CONTRACTOR

Company: _____

By: _____

By: _____

Title: _____

Title: _____

Date: _____

Date: _____

Exhibit A - Contract Documents

- Project Manual dated _____
-

Exhibit B - Contractor's Liability Insurance

- General liability in the amount of not less than \$1,000,000 per occurrence and \$2,000,000 aggregate.
- Property damage in the amount of not less than \$1,000,000 for any one accident. Additional limits may be required.
- Umbrella policy for not less than \$1,000,000.
- Auto liability insurance for not less than \$1,000,000 combined single limits.
- Workers' Compensation per statutory limits and employer's liability in the following minimum amounts: EL Each Accident - \$500,000, EL Disease Policy Limit - \$500,000, EL Disease Each Employee \$500,000.
- Contractor shall endorse the Authority on its insurance policy as an additional insured using form CG 20 10 11 85 or CG 20 10 07 04.

SOUTHERN GROUTS & MORTARS, INC.

**DIAMOND BRITE™
&
QUARTZ SERIES**

EXPOSED AGGREGATE FINISHES

INSTALLATION MANUAL

**1502 S.W. 2nd PLACE, POMPANO BEACH, FLORIDA 33069
(954) 943-2288 Fax (954) 943-2402
PLANT CITY, FLORIDA DALLAS, TEXAS
CORONA, CALIFORNIA**

INTRODUCTION

Diamond Brite is an exceptionally durable swimming pool and spa finish that is a unique blend of colored quartz aggregate and polymer modified cement. It was developed to answer both the consumer and contractor's demand for a longer lasting and more colorful pool finish that is resistant to traditional plaster problems. Diamond Brite will stand up to the harshest pool environments and can be cleaned by acid washing several times throughout its life span, without sustaining permanent damage.

In the late 1980's spot etching and other plaster problems had reached epidemic proportion throughout the United States. Traditional limestone-based finishes deteriorated rapidly, even with reasonable chemical maintenance, leading to customer dissatisfaction and frustration for contractors. This rapid deterioration was due to the weak, soluble nature of the marble aggregate and fine cement paste at the plaster surface. The dissolution of the cement paste and subsequent erosion of the marble aggregate produced unsightly "spot etching" and discoloration.

Minute fluctuations in water chemistry were sufficient to initiate the unstoppable process of deterioration that afflicted many pools and spas. Typical cleaning methods such as "acid washing" brought only temporary relief and in reality caused accelerated erosion. More than a few pool builders and service contractors went out of the plaster business as a result of the these problems.

Finally, in the early 1990s, SGM introduced Diamond Brite to the swimming pool and spa industry. With its revolutionary use of insoluble quartz and exposed aggregate technology, Diamond Brite quickly took the industry by storm. Pool and spa contractors everywhere eagerly embraced Diamond Brite as a true advancement over existing pool plaster technology.

In just five years there were over 100,000 Diamond Brite pools, including major water theme parks, international resorts, competition, commercial and residential pools and spas throughout the world.

There is no secret to Diamond Brite's success. Quartz aggregate, unlike marble, is completely insoluble, even in the presence of highly corrosive acid. And, by intentionally removing the highly susceptible cement paste during the exposure process, a colorful, slip resistant and extraordinary durable surface is revealed. Finally, polymer modification of the cement used in Diamond Brite, increases hardness, improves bonding and reduces water penetration.

Careful selection of the finest ingredients available and strict quality control procedures set SGM apart from all other manufacturers. Every batch of Diamond Brite, about 60 to 80 bags, produced at SGM manufacturing facilities in Pompano Beach Florida, Dallas Texas, and Corona California, is tested before shipping to insure our customers receive the highest quality product. Samples of each batch are stored at the factory for future reference in the event of a warranty claim.

Finally, this manual is intended as a reference source only. It is assumed that the user is experienced in the application of standard swimming pool plasters and water chemistry. There is no substitute for hands-on experience in the application of Diamond Brite. Training by skilled installers is available through SGM and is the only way to acquire the necessary skills. Revisions will be published yearly as more information is accumulated. For more information or to get on our mailing list to receive a revised copy each year, contact your local SGM representative or call us at (800) 641-9247.

I. DETERMINING COVERAGE

- A. Measure the total square footage of the pool's interior surface (walls and floor). Include extra material for steps, benches and swim outs.
- B. Determine the required number of bags by using 25 square feet per bag for the average pool. More material will be required for a rougher shell. Use 18 square feet per bag for Pearl, Golden Pearl and Tahoe Blue Golden Pearl due to the larger aggregate size.
- C. **Always add 5% to 10% more bags to allow for error.** It will not be possible to match areas plastered later due to shortages on the job site. Always take more than you need.

II. PREPARATION OF THE SUBSTRATE OR POOL SHELL

A. New Pool Shells

- 1. The shell must be free of any foreign material that may interfere with the bonding of the new plaster.
- 2. All loose material such as dripped thinset, grout, paint, dirt, patching or decking products must be removed by scraping, water blasting (pressure cleaning) or sand blasting.
- 3. Algae, mold and mildew must be eliminated by chlorine washing. Failure to do so will result in discoloration and bond failure (delaminations).
- 4. Remove any oil or grease with tri-sodium phosphate and water. Oils and grease left on the pool shell will cause bond failure and prevent proper etching and cleaning by waterborne acid solutions. To test for oil and grease, wet the entire pool shell surface and examine it carefully for beading water droplets. Heavily saturated areas may require soaking with liquid detergents until oil is removed.
- 5. Etch the surface with Muriatic Acid and water. Adjust the concentration as needed to properly clean and roughen the surface. Smoother shells will require a higher concentration of acid and vice versa.
- 6. All water penetration due to hydrostatic pressure (weepers) must be stopped. Use SGM Instant Hydraulic Cement to plug leaks and seal around fittings.
- 7. The shell must be fully cured at least 28 days.
- 8. All pool inlets and main drain lines should be plugged to prevent clogging during plasterwork and exposure. All plugs except the main drain should remain in place until the pool is filled to prevent drip stains.
- 9. Mark the location of all fittings with a small piece of tape placed on the coping directly above to prevent them from being accidentally covered during the plaster process. It may be best to draw a map indicating the locations of all fittings in projects with numerous inlets and outlets.

B. Resurfacing Projects

- 1. Follow all of the above procedures.
- 2. Undercut all existing tile and fittings 2" away and 3/8" deep into the existing plaster substrate.

3. Sound out and remove all hollow and delaminated plaster. Identify the hollow spots and saw an area 3" outside them. Remove the loose plaster inside the cut area.
4. Fill the hollow with SGM Vinyl Patching Compound or SGM Sand Topping Mix and Concrete Bonding Agent bringing the area level with the existing plaster.
5. Apply SGM Bond Kote as directed. Each unit of Bond Kote consists of one 5-gallon pail of Liquid Resin and two 65 lb., bags of Dry Mix and will cover approximately 500 square feet. Mix one 65 lb. bag of SGM Bond Kote with 1/2 pail of SGM Bond Kote Liquid Resin. Coat existing plaster using a 1 1/4" nap paint roller.

Allow material to set for one minute then create stipple texture by going over the area again with roller. Allow Bond Kote to cure for at least 6 hours before plastering. If Bond Kote is rained on or left to sit for more than a few days it may have to be reapplied.

III. MIXING

Note: **Diamond Brite** is made in batches of 60 to 80 bags using natural ingredients. For this reason there will be variations in shade between batches. Batch numbers are stamped on the ends of every bag. It is therefore incumbent upon the user to follow these instructions explicitly to ensure the most consistent color throughout the pool.

- A. Separate the bags according to the batch numbers stamped on the bottom of each bag. **Record all batch numbers. All warranties are rendered invalid without the batch numbers.**
- B. Blend different batches together in each mix according to the ratio present at the job site. For example: If there are 30 bags total on the job and there are 20 bags of Batch A and 10 bags of Batch B then use 2 bags of A to 1 bag of B in every mix.
- C. Measure and add water to mixer. Hold back a portion of the water and add as necessary as mixing progresses. Careful measuring of the mix water will produce the best material. Lower water to cement ratios will produce plaster of greater strength and density. It is therefore best to use as little water as needed to produce a workable mix. Excess water will reduce strength and increase shrinkage (check) cracks. Water requirements will vary according to job site conditions.

Note: Mix water quality is extremely important. Well water or water high in metal and mineral content will cause discoloration in finished Diamond Brite. Additionally, mix water of high hardness or alkalinity will cause the plaster to effloresce, releasing high levels of salts that produce calcium scale. This is especially true of colored Diamond Brite such as Midnite Blue, Onyx, Tahoe Blue and French Gray. Check mix water for metals, minerals, hardness and alkalinity before using.

- D. Start mixer and add Diamond Brite as quickly as possibly to ensure that all the material has the proper mix time. Failure to do so will produce uneven set times and result in washouts and streaking.
- E. Mix for a minimum of 5 minutes but no more than 10 minutes. This ensures even distribution of aggregates and increases the working time of the plaster. Insufficient mix time will result in uneven setting and shade variations. Too much mix time will produce an overall weaker plaster and may entrain undesirable air bubbles. As a rule of thumb, mix for only the amount of time required to produce a consistent, homogenous batter.
- F. Calcium Chloride may be used as an accelerator. It must be fully dissolved in water allowing impurities to settle out. Pour off the solution from the top being careful not to add impurities to the mix. The impurities found in calcium chloride flake and pellets have

been known to cause discoloration in pool plaster. No more than 2% by weight of cement (about 1/2 lb. per bag) can be used. Overuse will cause discoloration. For best results use SGM Accelerator 100 at a maximum rate of 1/4 gallon per bag.

IV. PUMPING

Note: Although it is not necessary to use a plaster pump many contractors do. Included here are some helpful hints for successful pumping.

- A. Increase the size of the pump manifold from 3" to 4". This can be expensive and not all plasterers have found it necessary. Change the valve ball from plastic to steel to improve longevity.
- B. Set plaster pump to the lowest gear by moving the belt. Always begin pumping with a full stroke on the main piston. This is accomplished by advancing the wheel until the cam is at its highest position.
- B. Prepare a slurry of cement and water and run it through the pump first to prime the pump and lubricate the hoses. A pump aid can be used as directed.
- C. Pour the mixed plaster slowly into the pump hopper. Do not pour all the material in at once. Agitate the material in the hopper to prevent separation of the cement and aggregate.
- D. Pump the complete batch without stopping. Avoid unnecessary stopping during the pumping process. Diamond Brite aggregate will tend to settle in the pump manifold and hoses when the pump is stopped.
- E. Do not try to clear a jam using the pump. Disassemble and clean the manifold and hoses when clogged. Do not water down mix. This will only cause the material to separate, clogging the pump and hoses.

V. APPLICATION

- A. Substrate should be cool and damp but not dripping wet. Mist the shell with cool, clean water but do not leave standing water. Standing water will weaken Diamond Brite in isolated areas and cause washouts.

Note: Hot, dry shells will cause rapid setting of the plaster and result in check or shrinkage cracking and delamination.

- B. Discard unmixed material (lumps). Breaking up and toweling in lumps changes the set of the Diamond Brite in that spot. This will also create a weak spot and cause washouts.
- C. Apply a scratch coat to the bowl first. The bowl will set up last and it will be necessary to walk on the bowl during the exposure process.
- D. Beginning with the shady walls and working to the sunny walls trowel a scratch coat on the walls and allow to set up slightly. The set time will vary according to temperature and humidity so constant inspection of the plaster during the set time is essential.
- E. Apply a finish coat to the entire pool surface working to 3/8" - 1/2" thick. Careful toweling will help to ensure even exposure, reduce washouts and produce a comfortable slip resistant finish. The technique of "Slick Toweling" is recommended. In this process the cement paste is brought to the surface during toweling and is removed with the trowel.

This produces a slick surface and minimized the exposure needed. The aggregate can be seen through a thin film of cement paste after toweling is complete.

- F. Special attention must be given to the filling in of shoe spike holes. Toweling in the paste from the surface will result in the hole having no aggregate. The applicator must be careful to fill all spike holes with Diamond Brite aggregate to avoid visible spike holes.
- G. Extra care must be taken to ensure proper toweling in the coves and corners. Insufficient toweling in these areas will result in roughness and washouts (loss of cement and aggregate) during the exposure process.

VI. EXPOSURE

Note: You must have one workman for every 300 square feet to properly expose Diamond Brite. The exposure time is limited to approximately one hour but will vary according to local conditions. Beginning too early or too late will result in uneven exposure. Some areas may be ready for exposure while other areas are still being troweled. Constant inspection of the Diamond Brite for readiness is imperative.

There are several techniques commonly used to expose Diamond Brite. The following is a list of the most popular techniques.

A. Water Washing With Brushes

Note: This is by far the most effective technique and produces the best results with standard **Diamond Brite Finishes. It is not recommended for the Quartz Series.**

1. When the Diamond Brite has lost its sheen or is no longer damp, it may be ready for exposure with soft bristle brushes and water. The material must be sufficiently set up to allow applicators to walk on the floor without leaving footprints. Wear white cotton socks or foam shoes when exposing Diamond Brite. Boots and bare feet are not recommended.
2. Test the plaster for readiness by carefully washing a small area with a soft bristle brush. If the cream washes away without losing aggregate the exposure process may begin.
3. Starting with sunny or fast setting areas begin washing away cement paste with water and brushes. Use a bucket first then progress to a soft flow of water from a garden hose as the material begins to harden. Begin using stiff bristle brushes as the set progresses.
4. Examine the plaster for hot spots that may be setting quickly. Mist these areas with water to allow longer exposure time. Over-cured cement paste will not remove easily and may require stiff bristle brushes to remove. Avoid slow setting areas like shady walls and the bowl. Washing too soon in these areas will cause washouts. If an area washes out it must be re-troweled immediately. Keep some extra Diamond Brite mixed up for use in patching washout areas. Use of torches or newspaper to dry wet areas is acceptable if done properly.
5. Keep a sump pump running in the main drain at all times to discharge the wash solution. Dispose of wash as directed by local requirements.
6. Avoid leaving hoses, buckets or any other items on the plaster during exposure. Any object left on the plaster during this critical phase may leave a "shadow" on the surface. In the event of shadowing heat may be carefully applied to remove the discoloration.
7. When all of the cement paste has been removed from the surface uniformly, the brush phase is complete. If done thoroughly, this will complete the exposure process. The process of acid washing as described below is optional.

8. If desired, an acidwash may now be performed using a 25% solution of Muriatic Acid (higher concentrations may be needed for stubborn areas) and water to remove the thin film that may remain on the surface. Proper safety equipment must be worn at all times. Begin washing the bowl first and work up to the shallow end. Following this procedure will minimize “rivers” or streaks on the floor. The use of an acidwash additive to reduce fumes and ensure uniform coverage is highly recommended. Neutralize and discard the wash solution according to local requirements. Neutralize acid remaining on the Diamond Brite with Soda Ash and water to avoid discoloration.

B. Acid Washing

Note: This technique is commonly used in cold climates or when the plasterers lack sufficient experience to undertake water washing. It is easier to do but can produce a less uniform finish. Use this technique when applying the **Quartz Series**.

1. After toweling, allow the plaster to fully set up. This may take anywhere from one to a few hours or overnight.
2. Begin acid washing by using a 25% solution of Muriatic Acid (higher concentrations may be needed for stubborn areas) and water to remove the cement film that may remain on the surface. Increase the concentration of the acid solution as needed. Proper safety equipment must be worn at all times. Begin washing the bowl first and work up to the shallow end. Following this procedure will minimize “rivers” or streaks on the floor. Acid wash walls and steps last. Do not allow acidwash solution to puddle in the bowl area. Use a sump pump to constantly discard the run off after it is diluted and neutralized.
3. The use of an acidwash additive to reduce fumes and ensure uniform coverage is highly recommended. Neutralize and discard the wash solution according to local requirements. Neutralize acid remaining on the Diamond Brite with Soda Ash and water to avoid discoloration.

C. Wet Acidwash.

Note: Also called Acid Start-up or No Drain Acidwash. This technique is sometimes used after water washing. It is also used in areas where the fill water is high in alkalinity and or hardness. When used alone without water washing this technique produces the least desirable results. It will not remove all of the cement paste evenly and will result in a streaked appearance.

1. Remove all metal such as ladders and lights from the pool and turn off the circulation system. If the ladder cannot be removed slip a plastic garbage over it to protect it from the acid.
2. After filling the pool test the alkalinity to determine the amount of Muriatic acid needed to lower the Total Alkalinity to zero.
3. Distribute the acid evenly throughout the pool.
4. Brush the pool thoroughly over the entire surface twice daily for 3 days.
5. Add a sequestering agent and raise the pH to the proper level with Soda Ash.
6. Start the circulation system and follow the start up instructions

VII. STARTUP AND WATER BALANCE

- A. After the finish is exposed, let it air dry for as long as conditions will allow. Delaying the fill water a few hours or until the next morning will reduce the occurrence of shade variations (mottling). Care must be taken not to over-dry the plaster and cause shrinkage cracking. There are no substitutes for experience and knowledge of local conditions, in determining how long to let a plaster air-dry.
- B. Pre-filter the water with a carbon tank and use a sequestering agent to eliminate stain-causing contaminants.
- C. Start the circulation system as soon as possible using the main drain line. **Do not** start the system until the water level is above the return inlets. Circulate the pool continuously for the first 3 days.
- D. On the first day test and record chlorine, pH, total alkalinity, calcium hardness and temperature levels. Adjust pH to 7.2 - 7.4 and the Total Alkalinity to 100 PPM. Dissolve all chemicals in water first and allow sufficient time for each chemical to be fully dispersed before adding others. **Do not** add chlorine or calcium chloride.
- E. Brush the entire surface twice each day for the first 3 days. Clean the filter as needed.
- F. On the second day repeat steps D. and E.
- G. On the third day, adjust **all** the chemistry to the following levels:
 Free chlorine: 1.0 - 3.0 PPM pH: 7.4 Total Alkalinity: 120 PPM
 Calcium Hardness: 200 PPM* Stabilizer: 30 PPM
***Note: Lower Calcium levels help to reduce scale and discoloration.**
- H. Adjust the pump timer to normal operating hours.
- I. Do not install automatic pool cleaners for 28 days.
- J. Do not vacuum the pool with a wheeled vacuum for 14 days, to avoid leaving "wheel marks". Brush type vacuums may be used immediately.
- K. Brush pool walls and floor daily for the first 2 weeks.

Note: These suggested guidelines are based on feedback from our customers throughout the nation. They represent an average of what has worked best for the majority and do not guarantee that you will not experience common plaster phenomenon such as staining, mottling, efflorescence and scale. Water supplies vary from one municipality to the next and therefore commonsense, experience and good testing procedures must be followed. Refer to the N.S.P.I. guidelines on start up and chemistry for more detailed information.

VIII. COLORED PLASTER

All pool plasters are subject to shade variations, mottling, scale and efflorescence problems. Colored or pigmented pool plasters are especially prone to these characteristics. Diamond Brite is no exception. We recommend the use of a "Colored Plaster Release" when installing Midnite Blue, Onyx, French Gray, Tahoe Blue and other pigmented Diamond Brite. This document should advise the customer of the nature of colored plasters thereby avoiding future conflicts.

VIII. USE OF DIAMOND BRITE ABOVE WATER

- A. Diamond Brite has been used in place of waterline tile, in fountains, waterfalls, negative edge pools, zero depth and beach entry applications where a more durable plaster is

required. It should be understood by the customer that the Diamond Brite above the water will have a dry appearance that differs from the plaster below water. Some check cracking may occur. Whenever possible water curing of exposed areas for 7 to 28 days will lessen the occurrence of shrinkage cracking and increase overall strength of the plaster.

- B.** Any blisters due to air trapped during troweling will fill with water and may delaminate during freezing temperatures due to the expansion of frozen water. It is therefore imperative that the Diamond Brite be free of any blisters in above water applications.
- C.** Diamond Brite is not impervious to water penetration and will therefore develop a water line ring due to the presence of oils and dirt at the water line that will require regular maintenance.

IX. MISCELLANEOUS

- A.** Recommended reading from the National Spa and Pool Institute (703) 838-0083: "Pool Plaster Technology".
- B.** Recommended reading from the National Plasterers Council (714) 459-8053: Start-up Do's & Don'ts for Newly Plastered Swimming Pools; Why You Should Use Plaster in Your Swimming Pool; Care Tips for New Swimming Pool Plaster and Technical Manual.