PROJECT MANUAL
Specifications and Contract Documents

VIRGINIA COMMUNITY COLLEGE SYSTEM
RICHMOND, VIRGINIA

SOUTHWEST VIRGINIA COMMUNITY COLLEGE
NEW ELECTRONIC ENTRANCE SIGN

PC#: 260-A1260-078

SOUTHWEST VIRGINIA COMMUNITY COLLEGE
P.O. Box SWCC
Richlands, VA 24641

724 Community College Road
Cedar Bluff, Virginia 24609

THE LANE GROUP
Architects . Engineers . Planners . Environmental Specialists
146 West Main Street, Suite B
Wytheville, Virginia 24382
☎ 276-223-1216  Fax: 276-223-1509
TLG PROJECT #: 1176

OCTOBER 19, 2011

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PC# 260-A0260-078  
Richlands, Virginia

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BIDDING REQUIREMENTS
NOTICE OF INVITATION FOR BIDS (IFB)

Sealed bids are invited for the New Electronic Entrance Sign at Southwest Virginia Community College, Richlands, Virginia, PC# 260-A1260-078. The project is generally described as the construction of an elevated LED display sign on a stone veneered masonry support wall and columns, associated site work, and electrical connection.

Sealed bids will be received by Dr. Leonard V. Kogut, Southwest Virginia Community College, Purchasing Department, Tazwell Hall, Suite 334 (for courier delivery); Southwest Virginia Community College, Purchasing Department, PO Box SVCC, Richlands, VA 24641 (for USPS); Southwest Virginia Community College, Purchasing Department, 724 Community College Road, Cedar Bluff, VA 24609 (for UPS or FEDEX Delivery). **The deadline for submitting bids is 2:00 P.M. sharp, as determined by the Bid Officer, on November 28, 2011.** The bids will be opened publicly and read aloud **beginning** at 2:00 P.M., on November 29, 2011, at the same location.

A Bid Bond is required.

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

Procedures for submitting a bid, claiming an error, withdrawal of bids and other pertinent information are contained in the Instructions to Bidders, which is part of the Invitation for Bids. Withdrawal due to error in bid shall be permitted in accord with Section 9 of the Instructions to Bidders and § 2.2-4330, Code of Virginia. The Owner reserves right to reject any or all bids.

A pre-bid conference will be held at Southwest Virginia Community College, Tazewell Hall, Room 302 at **2:00 pm, on November 8, 2011.** Attendance shall be optional for those submitting a bid.

The contract shall be awarded on a lump sum basis as follows: the **Total Base Bid Amount including any properly submitted and received bid modifications** in the manner set forth in Paragraph 12 of the Instructions to Bidders. ‘**Notice of Award**’ or ‘**Notice of Intent to Award**’ will be posted on the bulletin board at Southwest Virginia Community College and on the agency’s website www.eva.virginia.gov.

Contractor registration in accordance with Section 54.1-1103 of the Code of Virginia, is required. See the Invitation for Bids for additional qualification requirements.

The Invitation for Bids for the above project, including the drawings and the specifications containing the information necessary for bidding, may be obtained from the office of The Lane Group, Inc., Telephone: (276)-223-1216, Fax: (276)-223-1509.

A deposit of $75 for each set of the Invitation for Bids documents will be required as a guarantee of the safe return of the documents within ten days after the bid opening. In addition, a non-refundable shipping and handling charge of $25 per set is required for all sets requiring shipment.

Copies of the Invitation for Bids documents, including the plans and the specifications, will also be available for inspection at the following locations:

The Lane Group, Inc. - Wytheville, VA
Southwest Virginia Community College – Richlands, VA
DGS-30-256
(Rev. 02/10)

Associated General Contractors – Blountville, TN
Valley Construction News – Roanoke, VA
INSTRUCTIONS TO BIDDERS

The Invitation For Bids (IFB) consists of the Notice, this Instructions To Bidders, the Bid Form, the Pre-Bid Question Form, the General Conditions of the Construction Contract, the Supplemental General Conditions (if any), the Special Conditions (if any), the Forms to be used, and the Scope of Work as described by the Plans and Specifications, other documents listed in the Specifications, and any addenda which may be issued, all of which request qualified bidders to submit competitive prices or bids for providing the described work on the project.

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

1. CONDITIONS AT SITE OR STRUCTURE: Bidders shall visit the site and shall be responsible for ascertaining pertinent local conditions such as location, accessibility, general character of the site or building, and the character and extent of existing conditions, improvements or work within or adjacent to the site. Claims, as a result of failure to have done so, will not be considered by the Owner. See Section 7 of the General Conditions entitled "Conditions at Site."

2. EXPLANATIONS 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. The Owner shall not be responsible for any conclusions, assumptions or interpretations made by bidders during the preparation of bids that are contrary to the drawings and specifications and their clear intent. Discrepancies, conflicts, errors, omissions or doubts as to the meaning of drawings and specifications shall be communicated in writing to the Architect/Engineer for interpretation. Bidders must use the "Prebid Question Form" provided in the bid documents. Bidders must so act to assure that questions reach the Architect/Engineer at least six (6) days prior to the time set for the receipt of bids to allow a sufficient time for an addendum to reach all bidders before the submission of their bids. If, however, there are two (2) weeks or less between the first bid advertisement and the time set for receipt of bids, then bidders must submit questions so that they reach the A/E no later than 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 shall be acknowledged by the bidder on Bid Forms. If such discrepancies, conflicts, errors, omissions or doubts are reasonably apparent or should have been reasonably apparent to the bidder, and the bidder failed to submit questions to the A/E in the time and manner required herein and the Contract is awarded to the bidder, then any claims shall be deemed waived and the bidder shall not be entitled to additional compensation or time, or entitled to sue the Owner based on such discrepancies, conflicts, errors, omissions, or doubts.

3. TIME FOR COMPLETION:

(a) "Time for Completion" shall be designated by the Owner on the Invitation for Bids or other prebid documents and shall mean the number of consecutive calendar days following the issuance of the Notice to Proceed which the Contractor has to substantially complete all Work required by the Contract. In some instances, the Time for Completion may be stated in the form of a Contract Completion Date based on a stipulated date of Notice to Proceed.

Unless otherwise specified, the Contractor shall achieve Final Completion within thirty (30) days after the date of Substantial Completion.

(b) When the Notice to Proceed is issued, it will state a Contract Completion Date, which has been set by the Owner based on date of the Notice to Proceed and the Time for Completion.
(c) The Contractor, in preparing and submitting his bid, is required to take into consideration normal weather conditions. Normal weather does not mean statistically average weather, but rather means a range of weather conditions which might be anticipated, (i.e., conditions which are not extremely unusual). Normal weather conditions shall be determined from the public historical records available, including the U.S. Department of Commerce, Local Climatological Data Sheets, Oceanic and Atmospheric Administration/Environmental Data and Information Service, National Climatic Center and the National Weather Service. The data sheets to be used shall be for the locality or localities closest to the site of the work. No additional compensation will be paid to the Contractor because of adverse weather conditions; however, an extension of time for abnormal weather will be considered by the Owner as indicated in the General Conditions.

(d) If the Owner designates the public historical climatological records to be used, the bidder shall use those records in computing bids. If the Owner requests each bidder to indicate the records used, each bidder may select the public historical climatological records upon which he will rely in computing his bid. In the latter situation, each bidder shall designate in the space provided which of such climatological data records he used when formulating his bid. A bidder's failure to designate climatological records when submitting a bid shall not disqualify his bid, but shall constitute a waiver of the right to claim any extension of time as the result of abnormal weather. In either case, the bid submitted and the time of completion shall be presumed to have been based upon normal weather derived from the climatological records used.

4. PREPARATION AND SUBMISSION OF BIDS:

(a) Bids shall be submitted on the forms furnished, or copies thereof, and shall be signed in ink. Erasures or other changes in a bid must 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 Owner as being incomplete or nonresponsive.

(b) Each bid must give the complete legal name and full business address of the bidder and be signed by the bidder, or the bidder's authorized representative, with his usual signature. Bids by partnerships must be signed in the partnership name by one of the general partners of the partnership or an authorized representative, followed by the designation/title of the person signing, and a list of the partners. Bids by joint ventures must be signed in the joint venture name by one of the joint venturers or an authorized representative of one of the joint venturers, followed by the designation/title of the person signing, and a list of the joint venturers. Bids by corporations must be signed with the legal name of the corporation followed by the signature and title of the person authorized to bind it in this matter. The name of each person signing shall be typed or printed below the signature. A signature on a bid by a person who identifies his title as "President," "Secretary," "Agent" or other designation without disclosing the principal firm, shall be held to be the bid of the individual signing. When requested by the Owner, satisfactory evidence of the authority of the officer signing on behalf of the corporation shall be furnished. Trade or fictitious names may be referenced by using "t/a _ _ _ ", but bids shall be in the legal name of the person or entity submitting the bid.

(c) Bids with the bid guarantee shall be enclosed in a sealed envelope which shall be marked and addressed as indicated by the advertisement. If a contract is for one hundred twenty thousand dollars ($120,000) or more, or if the total value of all construction, removal, repair or improvements undertaken by the bidder within any twelve-month period is seven hundred fifty thousand dollars ($750,000) or more, the bidder is required under Title 54.1, Chapter 11, Section 1100, Code of Virginia, as amended, to be licensed in Virginia as a "Class A
If a contract is for seven thousand five hundred dollars ($7,500) or more, but less than one hundred twenty thousand dollars ($120,000), the bidder is required to be licensed in Virginia as a "Class B Contractor." The bidder shall place on the outside of the envelope containing the bid and shall place in the bid over his signature whichever of the following notations is appropriate and insert his Contractor license/registration number:

- Licensed Class A Virginia Contractor No. ______________
- Licensed Class B Virginia Contractor No. ______________

If the bidder is not properly licensed in Virginia at the time the bid is submitted, or if the bidder fails to provide this information on his bid or on the envelope containing the bid and fails to promptly provide said Contractor license number to the Owner in writing when requested to do so before the opening of bids, he shall be deemed to be in violation of Section 54.1-1115 of the Code of Virginia, as amended, and his bid will not be considered.

(d) The Board for Contractors has interpreted its regulations to mean "a licensed Contractor can bid on a contract which contains work outside his license classification(s) as long as he subcontracts those items for which he is not qualified to perform to licensed contractors with the appropriate License Classification and the work of the second party is incidental to the contract." Therefore, the Owner may, as a part of determining whether the bidder is "responsible," require the apparent low bidder to submit a listing of his subcontractors along with the license number and classification or specialty of each.

(e) The bidder must also place its Employer Identification Number (SSN or FEIN) in the space provided on the Bid Form.

(f) Every bidder organized as a stock or nonstock corporation, limited liability company, business trust, or limited partnership or registered as a registered limited liability partnership must be authorized to transact business in the Commonwealth as a domestic or foreign business entity if so required by Title 13.1 or Title 50 of the Code of Virginia, as amended, or as otherwise required by law. Any bidder organized or authorized to transact business in the Commonwealth pursuant to Title 13.1 or Title 50 must include in its bid the identification number issued to it by the State Corporation Commission. Any bidder that is not required to be authorized to transact business in Virginia that fails to provide the required information shall not receive an award unless a waiver of this requirement and of any administrative policies and procedures established to implement Section 2.2-4311.2 of the Code of Virginia, as amended, is granted by the chief executive of the Owner.

If awarded the Contract, the bidder shall not allow its existence to lapse or its certificate of authority or registration to transact business in the Commonwealth, if so required under Title 13.1 or Title 50, to be revoked or cancelled at any time during the term of the Contract. Doing so shall be deemed to be a violation of Section 2.2-4311.2 and the bidder understands and agrees that the Owner may void the Contract if the bidder fails to comply with this provision.

5. BID GUARANTEE:

(a) Any bid (including the Total Base Bid plus all Additive Bid Items) which exceeds one hundred thousand dollars ($100,000) shall be accompanied by a Commonwealth of Virginia Standard Bid Bond, Form CO-10.2, payable to the Owner as obligee in an amount equal to five percent (5%) of the amount of the bid. A Bid Bond may be required for projects having bids of less
than one hundred thousand dollars ($100,000) if such requirement is stated in the Notice of
Invitation for Bids. The Bid Bond must be issued by a surety company which is legally
authorized by the Virginia State Corporation Commission to do surety business in the
Commonwealth of Virginia. Such Bid Bond shall guarantee that the bidder will not withdraw
his bid during the period of thirty (30) days following the opening of bids; that if his bid is
accepted, he will enter into a formal contract with the Owner in accordance with the Contract
Between Owner and Contractor, Form CO-9, included as a part of the IFB Documents; that he
will submit a properly executed and authorized Standard Performance Bond and Standard
Labor and Material Payment Bond on the forms included in the IFB documents; and that in the
event of the withdrawal of said bid within said period, or failure to enter into said contract and
give said bonds within ten (10) days after he has received notice of acceptance of his bid, the
bidder shall be liable to the Owner for the difference between the amount specified in said bid
and such larger amount for which the Owner may contract with another party to perform the
work covered by said bid, up to the amount of the bid guarantee. This amount represents the
damage to the Owner on account of the default of the bidder in any particular hereof.  See §
2.2-4336 of the Code of Virginia, as amended.

(b) See § 2.2-4338 of the Code of Virginia for provisions allowing alternative forms of bid security
in lieu of a Bid Bond. Forms of Security listed in § 2.2-4338.B must be approved prior to
submission of a Bid on the Bid Receipt date and time to be acceptable as Bid Security.

(c) The Bid Bonds or other bid security will be returned to all except the three lowest bidders after
the formal opening of bids. The remaining Bid Bonds or bid security will be returned to the
bidders after the Owner and the accepted bidder have executed the Contract and the
Performance Bond and the Payment Bond have been approved by the Owner.

(d) If the required Contract and bonds have not been executed within thirty (30) days after the date
of the opening of the bids, then the bond or other bid security of any bidder will be returned
upon his request, provided he has not been notified of the acceptance of his bid prior to the date
of such request.

6. WITHDRAWAL OR MODIFICATION OF BIDS: Bids may be withdrawn or modified by
written or telefaxed notice received at the designated location from bidders prior to the deadline
fixed for bid receipt. E-mail modifications are not acceptable. The withdrawal or modification may
be made by the person signing the bid or by an individual(s) who is authorized by him on the face
of the bid. Written modifications may be made on the bid form itself, on the envelope in which the
bid is enclosed, or on a separate document. Written modifications, whether the original is delivered
or telefaxed, must be signed by the person making the modification or withdrawal. The
modification must state specifically what is to be modified and by what amount or it must state the
item to be modified and what the corrected amount should be. (e.g. “Deduct $25,000 from Part A
and from the Total Base Bid Amount”; or “Add $23,456 to the Total Base Bid Amount”; or
“Deduct $15,650 from the Additive # 2 amount”. A modification to “Deduct $25,000 from Part A”
will only be applied to Part A and not to the Total Base Bid Amount) Unless otherwise specified
by the Bidder in the modification, the modification will be applied to the TOTAL BASE BID
AMOUNT shown on the Bid Form. (e.g. a modification stating only “Deduct $25,000” which is
properly signed will be deducted from the Total Base Bid Amount shown on the Bid Form)

7. RECEIPT OF BIDS:

(a) Bids will be received at or before the date and the hour and at the place stipulated in the
Invitation for Bids as may be modified by subsequent Addenda.
(b) It is the responsibility of the bidder to assure that his bid and any bid modifications are delivered to the place designated for receipt of bids by the date and hour (deadline) set for receipt of bids. Therefore, it is the bidder’s responsibility to take into account all factors which may impact on its bid deliverer / courier's ability to deliver the bid and to implement whatever actions are necessary to have the bid delivered to the proper bid receipt location prior to the bid receipt deadline. No bids or bid modifications submitted or offered after the date and hour designated for receipt of bids will be accepted or considered.

(c) The Bid Officer is the Owner's representative designated to receive bids at the time and place noted in the IFB and to open the bids received at the appointed time.

(d) The official time used for the receipt of responses is determined by reference to the clock designated by the Bid Officer. The Bid Officer shall determine when the Bid Receipt Deadline has arrived and shall announce that the Deadline has arrived and that no further bids or bid modifications will be accepted. All bids and bid modifications in the possession of the Bid Officer and his assistants at the time the announcement is completed are deemed to be timely, whether or not the bid envelope has been physically date/time stamped or otherwise marked by the time the Bid Officer makes the deadline announcement.

8. OPENING OF BIDS:

(a) Bids will be opened at the time and place stated in the Invitation for Bids or as modified by subsequent Addenda, and their contents publicly announced. The Bid Officer shall decide when the specified time for bid opening has arrived. No responsibility will be attached to any officer or agent for the premature opening of a bid not properly addressed and identified. Bid opening shall be no sooner than 24 hours after the time set for receipt of bids.

(b) The provisions of § 2.2-4342 of the Code of Virginia, as amended, shall be applicable to the inspections of bids received.

9. ERRORS IN BIDS: A bidder may withdraw his bid from consideration if the price bid was substantially lower than the other bids due solely to a mistake therein, 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 a 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.

In accordance with § 2.2-4330.A.(ii) of the Code of Virginia, the bidder must submit to the Owner his original work papers, documents and materials used in the preparation of the bid within one day after the date fixed for submission of bids. Such work papers must be submitted in an envelope or package separate and apart from the envelope containing the bid and marked clearly as to the contents and shall be delivered to the Owner by the bidder in person or by registered mail prior to the time fixed for the opening of bids and may not be withdrawn until after the two-hour period (referred to later) has elapsed. The bids shall be opened at the time designated in the IFB, as amended by addendum. Bid opening is usually one day following the time fixed by the Owner for the submission of bids, but no sooner. Once the bids have been opened, the bidder shall have two (2) hours after the opening of bids within which to claim in writing any mistake as defined herein and withdraw his bid. The Contract shall not be awarded by the Owner until such two-hour period has elapsed. Such mistake shall be proved only from the original work papers, documents and materials delivered to the Owner prior to bid opening. This procedure (ii) shall not apply to when the entire bid is required to be submitted on a unit price basis.
Failure of a bidder to submit his original work papers, documents and materials used in the preparation of his bid on or before the time, date and place required shall constitute a waiver by that bidder of his right to withdraw his bid due to a mistake.

No bid may be withdrawn under this section when the result would be the awarding of the Contract on another bid of the same bidder or of another bidder in which the ownership of the withdrawing bidder is more than five (5%) percent.

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. The person or firm to whom the Contract was awarded and the withdrawing bidder are jointly liable to the Owner 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 lowest remaining bid shall be deemed to be the low bidder on the project.

10. REJECTION OF BIDS: The Owner reserves the right to cancel the Invitation for Bids, to reject any and all bids at its sole discretion when such rejection is in the interest of the Owner, or to reject the bid of any bidder who is determined to be not responsive or not responsible. See § 2.2-4319, Code of Virginia, as amended.

11. DETERMINATION OF RESPONSIBILITY

Each bidder shall be prepared, if so requested by the Owner, to present evidence of his experience, qualifications and financial ability to carry out the terms of the Contract.

Prior to award of the Contract, an evaluation will be made to determine if the low bidder has the capability, in all respects, to perform fully the contract requirements and the moral and business integrity and reliability which will assure good faith performance, and who has been prequalified, if required. Factors to be evaluated include, but are not limited to:

(a) sufficient financial ability to perform the contract as evidenced by the bidder's ability to obtain payment and performance bonds from an acceptable surety;
(b) appropriate experience to perform the Work described in the bid documents;
(c) any judgments entered against the bidder, or any officers, directors, partners or owners for breach of a contract for construction;
(d) any substantial noncompliance with the terms and conditions of prior construction contracts with a public body without good cause where the substantial noncompliance is documented; or
(e) a conviction of the bidder or any officer, director, partner, project manager, procurement manager, chief financial officer, or owner in the last five years of a crime relating to governmental or nongovernmental construction or contracting;
(f) any current debarment of the contractor, any officer, director or owner, from bidding or contracting by any public body of any state, any state agency, or any agency of the federal government.

The Owner reserves the right to disqualify or refuse to accept the bid of any bidder who 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 whether federal, state, or local, or who 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.
A bidder who, despite being the apparent low bidder, is determined not to be a responsible bidder shall be notified in writing in conformance with the procedures in §2.2-4359 of the Code of Virginia, as amended.

12. AWARD OF CONTRACT

(a) **Basis for Contract Award:** The Contract, if awarded, will be awarded to the lowest responsive and responsible bidder, if any, provided his bid is reasonable and it is in the best interest of the Owner to accept it and subject to the Owner's right to reject any and all bids and to waive informality in the bids and in the bidding. The Bid Form contains a multi-part Base Bid and may contain Additive Bid Items. Determination of the lowest responsible bidder, if any, will be based on the Total Base Bid Amount entered on the Bid Form including any properly submitted bid modifications plus as many Additive Bid Items taken in sequence as the Owner in its discretion chooses to Award. Where the sum of the values entered in the multiple parts do not agree with the Total Base Bid amount, the Total Base Bid amount entered on the bid form, including any properly submitted bid modifications, shall take precedence.

In the event that the Total Base Bid from the lowest responsible bidder exceeds available funds, the Owner may negotiate the Total Base Bid amount with the apparent low bidder to obtain a contract price within available funds, pursuant to § 2.2-4318 of the Code of Virginia, as amended, and Section 12(c) herein.

(b) **Informalities:** The Owner reserves the right to waive any informality in the bids when such waiver is in the interest of the Owner.

(c) **Negotiation With Lowest Responsible Bidder:** If award of a contract to the lowest responsive and responsible bidder is precluded because of limitations on available funds, under the provisions of § 2.2-4318 of the Code of Virginia (the Public Procurement Act), the Owner reserves the right to negotiate the Total Base Bid amount with the lowest responsive, responsible bidder to obtain a contract price within the available funds. This may involve changes in either the features or scope of the work include in the Base Bid. Such negotiations with the apparent low bidder may include reducing the quantity, quality, or other cost saving mechanisms involving items in the Total Base Bid. Negotiations for Additive Bid Items are excluded. The Owner shall notify the lowest responsive and responsible bidder that such a situation exists and the Owner and bidder shall then conduct their negotiations in person, by mail, by telephone or by any means they find convenient. If an acceptable contract can be negotiated, the changes to the Invitation for Bid documents agreed upon in the negotiations shall be summarized in a "Post Bid Modification" and included in the contract. If an acceptable contract cannot be negotiated, the Owner shall terminate negotiations and reject all bids.

(d) **Notice of Intent to Award or Notice of Award:** The Notice of Award or the Notice of Intent to Award will be posted at the Agency’s standard location for posting notices as shown on the “Notice of Invitation to Bid”. In addition the Agency may also post such notice on the Agency’s Website and/or the DGS central electronic procurement Website. Any bidder or offeror who desires to protest the award or decision to award a contract shall submit the protest in writing to the public body no later than ten days after the posting of the Notice of Award or Notice of Intent to Award, whichever comes first (§ 2.2-4360).
13. **CONTRACT SECURITY**: For contracts of more than $100,000, the Standard Performance Bond (Form CO-10) and the Standard Labor and Material Payment Bond (Form CO-10.1) shall be required, as specified in the Invitation for Bids documents. See the General Conditions and § 2.2-4337 and §2.2-4338 of the Code of Virginia, as amended. The Owner reserves the right to require such bonds for contracts less than $100,000. If the Owner so elects, the requirement shall be set forth in the Invitation For Bids.

14. **CERTIFICATION**: The bidder, by his signature on the Bid Form, certifies that neither his organization nor any of its officers, directors, partners or owners is currently barred from bidding on contracts by any Agency of the Commonwealth of Virginia, or any public body or agency of another state, or any agency of the federal government. See the statement "Disqualification of Contractors" in the Bid Form.

15. **ETHICS IN PUBLIC CONTRACTING**: The provisions, requirements and prohibitions as contained in Title 2.2, Chapter 43, Article 6, §2.2-4367 et seq., Code of Virginia, as amended, pertaining to bidders, offerers, contractors, and subcontractors are applicable to this project.

16. **BUILDING PERMITS**: Because this is a Project of the Commonwealth of Virginia, codes or zoning ordinances of local political subdivisions do not apply. However, the Virginia Uniform Statewide Building Code shall apply to the Work and shall be administered by the Building Official for State-owned Buildings. The Building Permit will be obtained and paid for by the Owner. All other permits, local license fees, business fees, taxes, or similar assessments imposed by the appropriate political subdivision shall be obtained and paid for by the Contractor. See Section 25 of the General Conditions for utility connection fees and services.

17. **MINORITY UTILIZATION**: It is the policy of the Commonwealth of Virginia to contribute to the establishment, preservation, and strengthening of minority business enterprises and to encourage the participation of minority businesses in State procurement activities. Towards that end, the Owner encourages firms to provide for the participation of minority owned businesses through partnerships, joint ventures, subcontracts, and other contractual opportunities.

18. **BID DOCUMENTS**: Bid Documents are the property of the Owner and a deposit in an amount as stated in the Invitation for Bids is required for each paper set or for each set provided on removable electronic media as a guarantee of the safe return of the documents within ten (10) days of bid opening. This deposit will be refunded in full on not more than two paper sets or sets provided on removable electronic media to each bidder who submits a prime contract bid and who returns the documents in good condition. Refund will be made on paper sets and sets provided on removable electronic media to non-bidders and subcontractors in the amount of half of the deposit when the sets are returned in good condition within 10 days. A deposit is not required for downloading of electronic construction documents through an FTP site. A non-refundable shipping charge may be required for paper sets or sets provided on removable electronic media if stated in the Notice or the Invitation For Bids.

19. **GENERAL CONDITIONS**: The General Conditions of the Construction Contract, G. S. Form E&B CO-7, are incorporated in the bid documents. If the General Conditions are incorporated by reference, the bidder may obtain a copy of the current edition of the General Conditions of the Construction Contract, G. S. Form E&B CO-7 at no cost by written request to the A/E and/or the Agency where the bid documents are obtained. Copies may also be obtained from the DGS Forms Center (http://forms.dgs.virginia.gov).

20. **PREBID CONFERENCE**: See the Invitation For Bids for requirements for a prebid conference and whether such conference is mandatory or optional.

22. **DRUG-FREE WORKPLACE REQUIRED:** Bidders are reminded that Section 2.2-4312 of the Code of Virginia requires that the during the performance of the contract resulting form this solicitation, the contractor agrees to (i) provide a drug-free workplace for the contractor's employees; (ii) post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana is prohibited in the contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition; (iii) state in all solicitations or advertisements for employees placed by or on behalf of the contractor that the contractor maintains a drug-free workplace; and (iv) include the provisions of the foregoing clauses in every subcontract or purchase order of over $10,000, so that the provisions will be binding upon each subcontractor or vendor.

For the purposes of this section, "drug-free workplace" means a site for the performance of work done in connection with a specific contract awarded to a contractor in accordance with this solicitation, the employees of whom are prohibited from engaging in the unlawful manufacture, sale, distribution, dispensation, possession or use of any controlled substance or marijuana during the performance of the contract. Paragraphs which have been added or revised since prior edition are identified with a line to the right of the paragraph.

**NOTE:** These CO-7A, Instructions to Bidders, have been created specifically for the use of agencies of the Commonwealth of Virginia, which may not alter their provisions without the express written approval of the Virginia Department of General Services, Division of Engineering and Buildings. These Instructions to Bidders have significant legal implications and shall not be altered or modified. Nothing in the CO-7A, Instructions to Bidders, shall be amended or deleted or its intent changed, except by an approved and properly issued ‘Supplemental Instruction to Bidders’. The Commonwealth makes no representation as to their suitability for any other purpose.
PREBID QUESTION FORM
(Use separate Form for each question submitted.)

Date: ______________

Project: Virginia Community College System
  SWCC – New Electronic Entrance Sign
  Richlands, Virginia

PC#: 260-A1260-078

The following question concerns Drawing Sheet (number) __________:

_________________________________________________________________________

_________________________________________________________________________

_________________________________________________________________________

_________________________________________________________________________

_________________________________________________________________________

The following question concerns Specifications Section (number) ________, page ________, paragraph ________,

_________________________________________________________________________

_________________________________________________________________________

_________________________________________________________________________

_________________________________________________________________________

_________________________________________________________________________

All responses to questions will be made by Addendum.

Question submitted by: ___________________________ Name ___________________________ Organization

Mail Form To: Sandra P. Graham
  The LANE Group, Inc.
  Re: WCC Bathroom Improvements
  146 West Main Street, Suite B
  Wytheville, Virginia 24382

Fax: 276.223.1509
Email: sgraham@thelanegroupinc.com
BID FORM

DATE: November ___, 2011

PROJECT: Southwest Virginia Community College
New Electronic Entrance Sign
Richlands, Virginia 24641

Project Code: 260-A1260-078

To: Virginia Community College System
   James Monroe Building
   101 North 14th Street
   Richmond, VA 23219

In compliance with and subject to your Invitation for Bids and the documents therein specified, all of which are incorporated herein by reference, the undersigned bidder proposes to furnish all labor, equipment, and materials and perform all work necessary for construction of this project, in accordance with the Plans and Specifications dated October 19, 2011 and the Addenda noted below, as prepared by The Lane Group, Inc., Wytheville, VA for the consideration of the following amount:

BASE BID (including the following parts but excluding work in Additive Bid Items):

PART A.
Lump sum price for construction of the building within a perimeter extending 5 feet from the walls of the building, complete, and in accordance with the Plans and Specifications:

PART A = ________________________ Dollars ($ ________________).

TOTAL BASE BID AMOUNT (For PART A) IS:

________________________________________ DOLLARS ($ ________________)

Contract award will be based on the TOTAL BASE BID AMOUNT shown above (including any properly submitted bid modifications).

The bidder has relied upon the following public historical climatological records:
NWS Weather Forecast Office for Blacksburg, VA.
The undersigned understands that time is of the essence and agrees that the time for Substantial Completion of the entire project shall be **120 consecutive calendar days** from the date of commencement of the Work as specified in the Notice to Proceed, and Final Completion shall be achieved within 30 consecutive calendar days after the date of Substantial Completion as determined by the A/E.

Acknowledgment is made of receipt of the following Addenda: ______________________________________________________________

If notice of acceptance of this bid is given to the undersigned within 30 days after the date of opening of bids, or any time thereafter before this bid is withdrawn, the undersigned will execute and deliver a contract in the prescribed form (Commonwealth of Virginia Contract Between Owner and Contractor, Form CO-9) within 10 days after the contract has been presented to him for signature. The required payment and performance bonds, on the forms prescribed, shall be delivered to the Owner along with the signed Contract.


DISQUALIFICATION OF CONTRACTORS: By signing this bid or proposal, the undersigned certifies that this Bidder or any officer, director, partner or owner is not currently barred from bidding on contracts by any Agency of the Commonwealth of Virginia, any public body or agency of another state, or any agency of the federal government, nor is this Bidder a subsidiary or affiliate of any firm/corporation that is currently barred from bidding on contracts by any of the same. We have attached an explanation of any previous disbarment(s) and copies of notice(s) of reinstatement(s).

Either the undersigned or one of the following individuals, if any, is authorized to modify this bid prior to the deadline for receipt of bids by writing the modification and signing his name on the face of the bid, on the envelope in which it is enclosed, on a separate document, or on a document which is telefaxed to the Owner:

_________________________________________________________________

_________________________________________________________________

_________________________________________________________________

_________________________________________________________________
I certify that the firm name given below is the true and complete name of the bidder and that the bidder is legally qualified and licensed by the Virginia Department of Professional and Occupational Regulation, Board for Contractors, to perform all Work included in the scope of the Contract.

Virginia License No. ______________  Bidder ______________________________
Contractor Class ________________  (Name of Firm)
Specialty ______________________  By___________________________________
Valid until ______________________  (Signature)
FEIN/SSN: ______________________  (Typed Name)

Title ______________________________

If General Partnership (List Partners' Names) Business Address:
________________________________________________
________________________________________________
________________________________________________
________________________________________________
Telephone # ________________________
FAX # ______________________________

If Corporation, affix Corporate Seal & list State of Incorporation
State: _____________________________
(Affix Seal)

Virginia State Corporation Commission ID No.: ______________; or

If Contractor is a foreign business entity not required to be authorized to transact business in the Commonwealth under Titles 13.1 or 50 of the Code of Virginia, or as otherwise required by law, please provide an explanation as to why such entity is not required to be so authorized: ____________________________
________________________________________________
________________________________________________
________________________________________________
________________________________________________.
COMMONWEALTH OF VIRGINIA
STANDARD BID BOND

KNOW ALL MEN BY THESE PRESENTS: That _____, the Contractor (“Principal”) whose principal place of business is located at _____ and _____ (“Surety”) whose address for delivery of ‘Notices’ is located at _____ are held and firmly bound unto the Commonwealth of Virginia, _____, the Owner (“Obligee”) in the amount of five percent (5%) of the Amount (Total Base Bid plus all Additive Bid Items) Bid by Principal, for the payment whereof, Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a bid for _____

NOW, THEREFORE, the conditions of this obligation are as follows. This Bid Bond shall guarantee that the Principal will not withdraw his bid during the period of thirty (30) days following the opening of bids; that if his bid is accepted, Principal will enter into a formal contract with the Owner in accordance with the Contract Between Owner and Contractor, Form CO-9, included as a part of the Invitation for Bids (IFB Documents); that Principal will submit a properly executed and authorized Standard Performance Bond and Standard Labor and Material Payment Bond on the forms included in the IFB documents; and that in the event of the withdrawal of said bid within said period, or failure to enter into said contract and give said bonds within ten (10) days after Principal has received notice of acceptance of his bid, Principal and Surety shall be jointly and severally liable to the Owner for the difference between the amount specified in said bid and such larger amount for which the Owner may contract with another party to perform the work covered by said bid, up to the amount of the bid guarantee. This amount represents the damage to the Owner of account of the default of the bidder in any particular thereof.

The Surety represents to the Principal and to the Obligee that it is legally authorized to do business in the Commonwealth of Virginia.
Signed and sealed this day of

__________________________

Contractor / Principal

(SEAL)

__________________________

By:

Witness

Typed Name: _____

Title: _____

__________________________

Surety

(SEAL)

__________________________

By:

Attorney-in-Fact

Typed Name: _____

AFFIDAVIT AND ACKNOWLEDGEMENT OF ATTORNEY-IN-FACT

COMMONWEALTH OF VIRGINIA
(or alternatively, Commonwealth or State of _____)

CITY of _____

I, the undersigned notary public, do certify that _____, whose name is signed to the foregoing bid bond in the amount of five percent (5%) of the Total Bid Amount and which names the Commonwealth of Virginia, _____, as Obligee, personally appeared before me today in the above jurisdiction and made oath that he/she is the attorney-in-fact of _____, a _____ corporation which is the Surety in the foregoing bond, that he/she is duly authorized to execute on the above Surety’s behalf the foregoing bond pursuant to the Power of Attorney noted above and attached hereto, and on behalf of the surety, he/she acknowledged the foregoing bond before me as the above Surety’s act and deed.

She/he has further certified that her/his Power of Attorney has not been revoked.

[Complete if Power is recorded: Clerk’s Office: _____;
Deed Book/Page No. or Instrument No.: _____.]

Given under my hand this _____ day of _____.

__________________________

Notary Public

(SEAL)

My name (printed) is: _____

My registration number is: _____

My commission expires: _____
Vendor eVA Registration Requirements

**eVA Vendor Registration:** The eVA Internet electronic procurement solution, www.eVA.virginia.gov, streamlines and automates government purchasing activities for the Commonwealth. The eVA portal is the gateway for vendors to conduct business with state agencies and public bodies. All vendors desiring to provide construction and/or professional services to the Commonwealth shall participate in the eVA electronic procurement solution whether through the eVA Basic Vendor Registration Service or through the eVA Premium Vendor Registration Service. All bidders or offerors must register in eVA; failure to register will result in their bid/proposal being rejected.

a. **eVA Basic Vendor Registration Service:** $0.00 annual registration fee* plus the appropriate order Transaction Fee specified below.

b. **eVA Premium Vendor Registration Service:** $0.00 annual registration fee* plus the appropriate order Transaction Fee specified below. eVA Premium Vendor Registration Service includes all benefits of the eVA Basic Vendor Registration Service plus electronic notification of business opportunities that match the vendor’s registered commodities.

c. For orders issued August 16, 2006 and after, the Vendor Transaction Fee shall be:
   (i) DMBE-certified Small Businesses: 1%, capped at $500 per order.
   (ii) Businesses that are not DMBE-certified Small Businesses: 1%, capped at $1,500 per order.

**eVA Contracts and Orders:** The solicitation/contract will result in (__________) purchase order(s) with the eVA transaction fee specified below assessed for each order.

a. For orders issued August 16, 2006 and after the Vendor Transaction Fee shall be:
   (i) DMBE-certified Small Businesses: 1%, capped at $500 per order.
   (ii) Businesses that are not DMBE-certified Small Businesses: 1%, capped at $1,500 per order.

The eVA transaction fee will be assessed approximately 30 days after each purchase order is issued. Any adjustments (increases/decreases) will be handled through eVA change orders.

* Per eVA Fee Schedule, revised 7/1/2009.
CONDITIONS OF THE CONTRACT
# COMMONWEALTH OF VIRGINIA

# GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Notice: All written notices, including demands, instructions, claims, approvals and disapprovals, required or authorized under the Contract Documents. Any written notice by either party to the Contract shall be sufficiently given by any one or combination of the following, whichever shall first occur: (1) delivered by hand to the last known business address of the person to whom the notice is due; (2) delivered by hand to the person's authorized agent, representative or officer wherever they may be found; or (3) enclosed in a postage prepaid envelope addressed to such last known business address and delivered to a United States Postal Service official or mailbox. Notice is effective upon such delivery. All notices to the Owner should be directed to the Project Manager.
If the Owner and the Contractor agree in writing that Notices transmitted by Facsimile (Fax) are acceptable for the Project, such Notice shall be transmitted to the Fax number listed in the agreement and shall have a designated space for the Fax Notice recipient to acknowledge his receipt by authorized signature and date. The Fax Notice with authorized signature acknowledging receipt shall be Faxed back to the sender. The Faxed Notice shall be effective on the date it is acknowledged by authorized signature. All Faxed Notices shall also be sent by hard copy, which shall be effective upon delivery, as provided herein. Notice shall be effective upon the date of acknowledgment of the Faxed Notice or the date of delivery, whichever occurs first.

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

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

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

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

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

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

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

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

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

**Specifications:** That part of the Contract Documents containing the written administrative requirements and the technical descriptions of materials, equipment, construction systems, standards, and workmanship which describe the proposed Work in sufficient detail and provide sufficient information for the Building Official to determine code compliance and for the Contractor to perform the Work. (The General Conditions, any Supplemental General Conditions, various bidding information and instructions, and blank copies of various forms to be used during the execution of the Work are usually bound with the Specifications.)
Subcontractor: A person having a direct contract with Contractor or with any other Subcontractor for the performance of the Work. Subcontractor includes any person who provides on-site labor but does not include any person who only furnishes or supplies materials for the Project.

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

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

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

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

Time for Completion: The number of consecutive calendar days following the issuance of the Notice to Proceed which the Contractor has to substantially complete all Work required by the Contract. When the Notice to Proceed is issued, it states a Contract Completion Date, which has been set by the Owner based on the Time for Completion.

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

Work: The services performed under this Contract including, but not limited to, furnishing labor, and furnishing and incorporating materials and equipment into the construction. The Work also includes the entire completed construction, or the various separately identifiable parts thereof, required to be furnished under the Contract Documents.

2. CONTRACT DOCUMENTS

(a) The Contract Between Owner and Contractor (CO-9), the Workers' Compensation Certificate of Coverage (CO-9a), the Standard Performance Bond (CO-10), the Standard Labor and Material Payment Bond (CO-10.1), the Schedule of Values and Certificate for Payment (CO-12), the Affidavit of Payments of Claims (CO-13), the Contractor's Certificate of Substantial Completion (CO-13.2a), and the Contractor's Certificate of Completion (CO-13.2) issued by the Commonwealth of Virginia in its Construction and Professional Services Manual are forms incorporated in these General Conditions by reference and are made a part hereof to the same extent as though fully set forth herein. They must be used by the Contractor for their respective purposes.

(b) All time limits stated in the Contract Documents, including but not limited to the Time for Completion of the Work, are of the essence of the Contract.
(c) The Contract Between Owner and Contractor shall be signed by the Owner and the Contractor in as many original counterparts as may be mutually agreed upon, each of which shall be considered an original.

(d) Anything called for by one of the Contract Documents and not called for by the others shall be of like effect as if required or called for by all, except that a provision clearly designed to negate or alter a provision contained in one or more of the other Contract Documents shall have the intended effect. In the event of conflicts among the Contract Documents, the Contract Documents shall take precedence in the following order: the Contract Between Owner and Contractor; the Supplemental General Conditions; the General Conditions; the Special Conditions; the specifications with attachments; and the plans.

(e) If any provision of this Contract shall be held invalid by any court of competent jurisdiction, such holding shall not invalidate any other provision.

(f) All correspondence, invoices, memoranda, submittals and other documents related to this Project whether generated by the Owner, the A/E, the Contractor or others should be identified at the beginning of the document with the eight digit (XXX-XXXXX) Project Code Number. Additional identification such as a job number, purchase order number or such may also be shown at the generator's option.

3. LAWS AND REGULATIONS

(a) The Contractor shall comply with all laws, ordinances, rules, regulations and lawful orders of any public authority bearing on the performance of the Work and shall give all notices required thereby. The Contractor shall assure that all Subcontractors and tradesmen who perform Work on the project are properly licensed by the Department of Professional and Occupational Regulation as required by Title 54.1, Chapter 11, Articles 1 and 3 and by applicable regulations.

(b) This Contract and all other contracts and subcontracts are subject to the provisions of Articles 3 and 5, Chapter 4, Title 40.1, Code of Virginia, relating to labor unions and the "right to work." The Contractor and its Subcontractors, whether residents or nonresidents of the Commonwealth, who perform any Work related to the Project shall comply with all of the said provisions.

(c) IMMIGRATION REFORM AND CONTROL ACT OF 1986: By signing this Contract, the Contractor certifies that it does not and shall not during the performance of this Contract violate the provisions of the Federal Immigration Reform and Control Act of 1986, which prohibits employment of illegal aliens, or knowingly employ an unauthorized alien as defined in the Federal Immigration Reform and Control Act of 1986.

(d) The provisions of all rules and regulations governing safety as adopted by the Safety Codes Commission of the Commonwealth of Virginia and as issued by the Department of Labor and Industry under Title 40.1 of the Code of Virginia shall apply to all Work under this Contract. Inspectors from the Department of Labor and Industry shall be granted access to the Work for inspection without first obtaining a search or administrative warrant.

(e) Building Permit: Because this Project is on Commonwealth of Virginia property, codes or zoning ordinances of local political subdivisions do not apply to Work on the property. The Virginia Uniform Statewide Building Code applies to the Work and is administered by the Building Official for State-owned Buildings. The Building Permit will be obtained and paid for by the Owner. All other permits, local license fees, business fees, taxes, or similar assessments imposed by the appropriate political subdivision shall be obtained and paid for by the Contractor. See Section 25 for utility connection fees and services.
(f) The Contractor shall include in each of its subcontracts a provision requiring each Subcontractor to include or otherwise be subject to the same payment and interest requirements in Subsections (a), (b), and (c) of Section 37 of these General Conditions with respect to each lower-tier Subcontractor and Supplier.

(g) The Contractor, if not licensed as an asbestos abatement contractor in accordance with §54.1-514, Code of Virginia, shall have all asbestos-related Work performed by subcontractors who are duly licensed as asbestos contractors for the Work required.

(h) Lead Based Paint Activities: If the Contract Documents indicate that lead based paint is present on existing materials, components, or surfaces, the Contractor shall conform to the following:

(1) The requirements set forth in 59 Federal Register 45,872 (September 2, 1994) Proposed Rule - Lead; Requirements for Lead based Paint Activities (Proposed Rules) in selecting and performing the means, methods and procedures for performing the Work. This includes, but is not limited to, training of personnel, lead abatement, encapsulation of lead containing materials, removal and handling of lead containing materials, and methods of disposal. When the Final Rule, to be codified at 40 CFR 745, supersedes the Proposed Rule, the Contractor shall be responsible for conforming to the Final Rule, as of the effective date set forth therein.


(3) The Virginia Department of Labor and Industry's (DLI) Emergency Regulation published in the May 27, 1996 Virginia Register, requiring, among other things, that a permit be issued to the lead abatement contractor, or any subsequent regulation issued by DLI.

(i) If the Contractor violates laws or regulations that govern the Project, the Contractor shall take prompt action to correct or abate such violation and shall indemnify and hold the Owner harmless against any fines, penalties, losses, costs and/or expenses that result from such violation. To the extent that such violation is the result of negligence or other actionable conduct of the Contractor, the Contractor shall indemnify and hold the Owner harmless against any third party claims, suits, awards, actions, causes of action or judgments, including but not limited to attorney's fees and costs incurred thereunder, that arise or result from such violation.

(j) If the Work includes any land disturbing activities, the Contractor shall have on-site an individual certified by the Department of Conservation and Recreation as a Responsible Land Disturber in accordance with §10.1-563, Code of Virginia.

4. NONDISCRIMINATION

(a) §2.2-4311 of the Code of Virginia shall be applicable. It provides as follows:

“1. During the performance of this Contract, the Contractor agrees as follows:

a. The Contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, disability, or other basis prohibited by state law relating to discrimination in employment, except where there is a bona fide occupational qualification reasonably necessary to the normal operation of the contractor. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.

b. The Contractor, in all solicitations or advertisements for employees placed by or on behalf of the contractor, will state that such Contractor is an equal opportunity employer.
c. Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting the requirements of this section.

2. The Contractor will include the provisions of the foregoing paragraphs a, b and c in every subcontract or purchase order of over $10,000, so that the provisions will be binding upon each subcontractor or vendor.”

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

5. PROHIBITION OF ALCOHOL AND OTHER DRUGS

(a) §2.2-4312 of the Code of Virginia shall be applicable. It provides as follows:

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

(b) The Contractor shall also establish, maintain and enforce policies which prohibit the following acts by all Contractor, Subcontractor and Supplier personnel at the Site:

(1) The manufacture, distribution, dispensation, possession, or use of alcohol, marijuana or other drugs, except possession and medically prescribed use of prescription drugs; and

(2) The impairment of judgment or physical abilities due to the use of alcohol, marijuana or other drugs, including impairment from prescription drugs.

6. TIME FOR COMPLETION

(a) The Time for Completion shall be designated by the Owner on the Invitation for Bids or other prebid documents. In some instances, the Time for Completion may be stated on the Invitation for Bids or other prebid document in the form of a Contract Completion Date. The Work must be substantially completed by the Time for Completion or the Contract Completion Date. Unless otherwise specified, the Contractor shall achieve Final Completion within thirty (30) days after the date of Substantial Completion.

(b) The Time for Completion shall be stated in the Contract Between Owner and Contractor and shall become a binding part of the Contract upon which the Owner may rely in planning the use of the facilities to be constructed and for all other purposes. If the Contractor fails to substantially complete the Work within the Time for Completion or Contract Completion Date, as set forth in the Contract, he shall be subject to payment of actual damages incurred by the Owner or liquidated damages, if provided for in the Contract.

(c) The Contractor, in submitting his bid, acknowledges that he has taken into consideration normal weather conditions. Normal weather does not mean statistically average weather, but rather means a range of weather patterns which might be anticipated based on weather data for the past ten (10)
years, (i.e., conditions which are not extremely unusual). Normal weather conditions shall be
determined from the public historical records available, including the U.S. Department of
Commerce, Local Climatological Data Sheets, National Oceanic and Atmospheric Administration /
Environmental Data and Information Service, National Climatic Center and National Weather
Service. The data sheets to be used shall be those for the locality or localities closest to the site of
the work. No additional compensation will be paid to the Contractor because of adverse weather
conditions; however, an extension of time for abnormal weather will be considered by the Owner
under the following conditions:

(1) The request for additional time shall be further substantiated by weather data collected
during the period of delay at the Site. Said data must demonstrate that an actual departure
from normal weather occurred at the Site during the dates in question.

(2) The extension requested must be supported by a delay in completion of the entire Project
shown on the critical path of the accepted CPM Schedule or the approved bar graph
schedule required for the Project. Extensions will be granted only for delays in
completion of the Project, not for that portion of any delay which consumes only "float"
time.

(3) A request for extension of time based on abnormal weather must be made in writing
within five (5) calendar days of the completion of the calendar month during which
abnormal weather is claimed at the Site.

(4) All of the evidence and data supporting the request (including both historical data and the
recordings at the Site during the time of delay) must be furnished to the Owner before
any consideration will be given to the request. That supporting data shall be submitted by
the end of the calendar month following the month for which the request is made.

(d) The Contractor represents and agrees that he has taken into account in his bid the requirements of
the bid documents, the Contract Documents, local conditions, availability of materials, equipment,
and labor, and any other factors which may affect the performance of the Work. The Contractor
agrees and warrants that he will achieve Substantial Completion of the Work to allow the Owner
to have Beneficial Occupancy not later than the Time for Completion or Contract Completion
Date. The Contractor agrees and warrants that he will achieve Final Completion of the Work (the
entire completion of all Work, including "punch list" items), not later than thirty (30) days after
achieving Substantial Completion.

7. CONDITIONS AT SITE

(a) The Contractor shall have visited the Site prior to bidding and is totally responsible for having
ascertained pertinent local conditions such as location, accessibility and general character of the
Site, and the character and extent of existing conditions, improvements and work within or
adjacent to the Site. Claims, which result from the Contractor's failure to do so, will be deemed
waived.

(b) If, in the performance of the Contract, hidden physical conditions of a building being modified are
exposed revealing unusual or materially different conditions from those ordinarily encountered or
inherent in work of this nature, or if subsurface or latent conditions at the Site are found which are
materially different from those frequently present in the locality or from those indicated in the
Contract Documents, the Contractor must report such conditions to the Owner and to the
Architect/Engineer before the conditions are disturbed. Upon such notice, or upon his own
observation of such conditions, the Architect/Engineer shall promptly propose such changes in the
Contract Documents as he finds necessary to conform to the different conditions. Any change in
the cost of the Work or additional time needed for completion must be requested pursuant to
Sections 38, 39 and/or 43 of these General Conditions.
(c) If the Contractor, during the course of the Work, observes the existence of any material which he knows, should know, or has reason to believe is hazardous to human health, the Contractor shall promptly notify the Owner. The Owner will provide the Contractor with instructions regarding the disposition of the material. The Contractor shall not perform any Work involving the material or any Work causing the material to be less accessible prior to receipt of special instructions from the Owner.

8. CONTRACT SECURITY

(a) For contracts with a value exceeding one hundred thousand dollars ($100,000), the Contractor shall deliver to the Owner or its designated representative, a Commonwealth of Virginia Standard Performance Bond, DGS-30-084 (Form CO-10) and a Commonwealth of Virginia Standard Labor and Material Payment Bond, DGS-30-088 (Form CO-10.1) each fully executed by the Contractor and one or more surety companies legally licensed to do business in Virginia and each in an amount equal to one hundred percent (100%) of the accepted bid. If more than one Surety executes a bond, each shall be jointly and severally liable to the Owner for the entire amount of the bond. Sureties shall be selected by the Contractor, subject to approval by the Owner. No payment on the Contract shall be due and payable to the Contractor until the bonds have been approved by the Owner and the Office of the Attorney General of Virginia. In order to facilitate review of the bonds by the Office of the Attorney General, the power of attorney from the surety company to its agent who executes the bond shall be attached to the bond, or, prior to the execution of the bonds by the surety, recorded in the Office of the Clerk of Court for the City of Richmond, Virginia, at the John Marshall Court Building, 400 North Ninth Street, except when the Owner is one of the following, in which case the power of attorney must be recorded with the Clerk of Court in the place shown:

<table>
<thead>
<tr>
<th>OWNER</th>
<th>PLACE OF RECORDATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Virginia</td>
<td>City of Charlottesville</td>
</tr>
<tr>
<td>Old Dominion University</td>
<td>City of Norfolk</td>
</tr>
<tr>
<td>Norfolk State University</td>
<td>City of Norfolk</td>
</tr>
<tr>
<td>Christopher Newport University</td>
<td>City of Newport News</td>
</tr>
<tr>
<td>Virginia Polytechnic Institute And State University</td>
<td>County of Montgomery</td>
</tr>
</tbody>
</table>

(b) For the purposes of all Standard Labor and Material Payment Bonds entered into, the term "subcontractors" as used in § 2.2-4337(A)(2) of the Code of Virginia is interpreted to mean any contractors who participated in the prosecution of the Work undertaken by the Contractor (referred to in § 2.2-4337(A)(2) of the Code of Virginia as the "prime contractor"), whether such contractor had a direct contract with the Contractor (prime contractor) or whether there were one or more other intervening Subcontractors contractually positioned between it and the Contractor (prime contractor).

(c) See § 2.2-4338 of the Code of Virginia, for alternative forms of security for payment and/or performance bonds.

(d) For contracts with a value of less than one hundred thousand dollars ($100,000), the Contractor will not be required to provide a Standard Performance Bond and a Standard Labor and Material Payment Bond as described above unless the Invitation for Bid states that such bonds will be required.
9. SUBCONTRACTS

(a) The Contractor shall, as soon as practicable after the signing of the Contract, notify the Owner and Architect/Engineer in writing of the names of all Subcontractors proposed for the principal parts of the Work and of such others as the Architect/Engineer may direct. Where the specifications establish qualifications or criteria for Subcontractors, manufacturers, or individuals performing Work on the Project, the Contractor shall be responsible for ascertaining that those proposed meet the criteria or qualifications. The Contractor shall not employ any Subcontractor that the Owner may, within a reasonable time, object to as unsuitable. Neither the Owner nor the Architect/Engineer shall direct the Contractor to contract with any particular Subcontractor unless provided in the specifications or Invitation for Bids.

(b) The Owner may select a particular Subcontractor for a certain part of the Work and designate on the Invitation for Bids that the Subcontractor shall be used for the part of the Work indicated and that the Subcontractor has agreed to perform the Work for the subcontract amount stipulated on the bid form. The Contractor shall include the stipulated amount plus his Contractor markups in the bid. In such case, the Contractor shall be responsible for that Subcontractor and its work and the Subcontractor shall be responsible to the Contractor for its work just as if the Contractor had selected the Subcontractor.

(c) The Owner shall, on request, furnish to any Subcontractor, if practicable, the amounts of payments made to the Contractor, the Schedule of Values and Requests for Payment submitted by the Contractor and any other documentation submitted by the Contractor which would tend to show what amounts are due and payable by the Contractor to the Subcontractor.

(d) The Contractor shall be fully responsible to the Owner for all acts and omissions of his agents and employees and all succeeding tiers of Subcontractors and Suppliers performing or furnishing any of the Work. Nothing in the Contract Documents shall create any contractual relationship between Owner or Architect/Engineer and any such Subcontractor, Supplier or other person or organization, nor shall it create any obligation on the part of Owner or Architect/Engineer to pay for or to see to the payment of any moneys due any such Subcontractor, Supplier or other person or organization, except as may otherwise be required by law.

(e) The Contractor shall be fully responsible for his invitees at the Site and for those of his Subcontractors, Suppliers, and their employees, including any acts or omissions of such invitees.

(f) The Contractor agrees that he alone is responsible for all dealings with his Subcontractors and Suppliers, and their subcontractors, employees and invitees, including, but not limited to, the Subcontractors' or Suppliers' claims, demands, actions, disputes and similar matters unless specifically provided otherwise by the Contract or by statute.

10. SEPARATE CONTRACTS

(a) The Owner reserves the right to let other contracts in connection with the Project, the Work under which may proceed simultaneously with the execution of this Contract. The Contractor shall afford other separate contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work. The Contractor shall cooperate with them and shall take all reasonable action to coordinate his Work with theirs. If the Owner has listed other separate contracts in the Invitation for Bids which it expects to proceed simultaneously with the Work of the Contractor, and has included the estimated timing of such other Contracts in the Invitation for Bids, the Contractor shall integrate the schedule of those separate contracts into his scheduling. The Contractor shall make every reasonable effort to assist the Owner in maintaining the schedule for all separate contracts. If the work performed by the separate contractor is defective or performed so as to prevent or threaten to prevent the Contractor from carrying out his Work
according to the Contract, the Contractor shall immediately notify the Owner and the Architect/Engineer upon discovering such conditions.

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

11. CONTRACTOR’S AND SUBCONTRACTOR’S INSURANCE

(a) The Contractor shall not commence Work under this Contract until he has obtained all the insurance required hereunder from an insurer authorized to do business in Virginia and such insurance has been approved by the Owner; nor shall the Contractor allow any Subcontractor to commence Work on his subcontract until the same types of insurance in an appropriate amount have been obtained by the Subcontractor and approved by the Contractor. Approval of insurance by the Owner shall not relieve or decrease the liability of the Contractor hereunder.

(b) The Contractor shall take out, and shall maintain in force at all times during the performance of the Work, Workers' Compensation and Employers' Liability Insurance for all of his employees engaged in the Work in an amount not less than the minimum required by § 2.2-4332 and § 65.2-100 et seq. of the Code of Virginia. In case any of the Work is sublet, the Contractor shall require each Subcontractor similarly to provide Workers' Compensation and Employers' Liability Insurance for all of the latter's employees to be engaged in the Work. Prior to award of the Contract, the Contractor shall submit a Certificate of Coverage verifying Workers' Compensation coverage on the form provided by the Owner. The Contractor shall likewise obtain a Certificate of Coverage for Workers' Compensation coverage from each subcontractor prior to awarding the subcontract and shall provide a copy to the Owner.

(c) During the performance of the Work under this Contract, the Contractor shall maintain commercial general liability insurance to include Premises / Operations Liability, Products and Completed Operations Coverage, Independent Contractor's Liability, Owner's and Contractor's Protective Liability, and Personal Injury Liability, which shall insure him against claims of personal injury, including death, as well as against claims for property damage, which may arise from operations under this Contract, whether such operations be by himself or by any Subcontractor, or by anyone directly or indirectly employed by either of them. The amounts of general liability insurance shall be not less than $1,000,000 per occurrence and $2,000,000 aggregate combined limit. The Commonwealth of Virginia, its officers, employees and agents, shall be named as an additional insured with respect to the Work being procured. The Supplemental General Conditions may require the Contractor to provide an Umbrella insurance policy in a specified amount for the Project.

(d) During the performance of the Work under this Contract, the Contractor shall maintain automobile liability insurance which shall insure him against claims of personal injury, including death, as well as against claims for property damage, which may arise from operations under this Contract, whether such operations be by himself or by any Subcontractor, or by anyone directly or indirectly employed by either of them. The amounts of automobile insurance shall be not less than $1,000,000 combined limit for bodily injury and property damage per occurrence.

(e) The Asbestos Contractor or Subcontractor, as the case may be, shall provide occurrence-based liability insurance with asbestos coverages in an amount not less than $1,000,000 and shall name the following as additional insureds: The Commonwealth of Virginia, its officers, its employees and its agents; the Architect/Engineer (if not the Asbestos Project Designer); and the Contractor (where the asbestos work is being performed by the Asbestos Subcontractor).
12. "ALL RISK" BUILDER'S RISK INSURANCE

(a) The Contractor, at his cost, shall obtain and maintain in the names of the Owner and the Contractor "all-risk" builder's risk insurance (or fire, extended coverage, vandalism and malicious mischief insurance, if approved by the Owner and the Director, Division of Engineering and Buildings) upon the entire structure or structures on which the Work of this Contract is to be done and upon all material in or adjacent thereto which is intended for use thereon, to one hundred percent (100%) of the insurable value thereof. Such insurance may include a deductible provision if the Owner so provides in the Supplemental General Conditions, in which case the Contractor will be liable for such deductions, whenever a claim arises. The loss, if any, is to be made adjustable with and payable to the Owner, in accordance with its interests, as they may appear. The Owner, its officers, employees and its agents, shall be named as an additional insured in any policy of insurance issued. Written evidence of the insurance shall be filed with the Owner no later than thirty (30) days following the award of the Contract. In the event of cancellation of this insurance, not less than thirty (30) days prior written notice must be sent to the Owner. A copy of the policy of insurance shall be given to the Owner upon demand.

(b) The value of the builder's risk insurance shall exclude the costs of excavations, backfills, foundations, underground utilities and Sitework.

(c) The Owner maintains insurance coverage on its buildings. On reroofing, renovation, and interior modifications of existing building projects where the Owner continues to occupy the building, or a portion thereof, while the Work is being performed, the Contractor shall provide "all risk" builders risk insurance, as describe above, in an amount equal to one hundred percent (100%) of the Contract Price for the Work. In those instances, the Supplemental General Conditions for the project shall expressly exclude the project from the requirements of Subsection 12(a). The Contractor is responsible for providing any desired coverage for Contractor's or Subcontractors' buildings, equipment, materials, tools or supplies that are on-site.

(d) Any insurance provided through the Department of Treasury, Division of Risk Management, on buildings, construction, additions or renovations will not extend to Contractor's nor Subcontractors' buildings, equipment, materials, tools or supplies unless these items are to become property of the Owner upon completion of the Project and the Owner has assumed responsibility for such items at the time of the loss.

13. TAXES, FEES AND ASSESSMENTS

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

14. PATENTS

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

15. ARCHITECT/ENGINEER'S STATUS

(a) The Architect/Engineer shall have authority to endeavor to secure the faithful performance by Owner and Contractor of the Work under the Contract. He shall review the Contractor's Submittals for conformance to the requirements of the Contract Documents and return copies to the Contractor with appropriate notations. He shall interpret the requirements of the plans and specifications and issue Field Orders to the Contractor as may be required. He shall recommend to the Owner suspension of the Work (in whole or in part) whenever such suspension may be necessary to ensure the proper execution of the Contract. He shall have authority to reject, in writing, Work, including material, installation or workmanship, which does not conform to the requirements of the plans and specifications. He shall determine the progress and quality of the Work, subject to the right of the Owner to make an overriding decision to the contrary. Upon request by the Contractor, the Architect/Engineer shall confirm, in writing within ten (10) days, any oral order or determination made by him.

(b) The Architect/Engineer shall have no authority to approve or order changes in the Work which alter the design concept or which call for an extension of time or a change in the Contract Price.

(c) Although the Owner is bound by the terms of the Contract with the Contractor, including the plans and specifications, the Owner shall have the right, but not the duty, to countermand any decision of the Architect/Engineer and to follow or reject the advice of the Architect/Engineer, including but not limited to acceptance of the Work, as it deems best. In those instances where the Architect/Engineer has been given authority to act, the Architect/Engineer shall promptly do so, but in the case of disagreement between the Architect/Engineer and the Owner, the decision of the Owner shall be final. The Contractor shall not be bound by any determination, interpretation or decision of the Architect/Engineer, if it is later determined that the same is not in accord with the Contract Documents. The party taking issue with the determination, interpretation or decision of the Architect/Engineer shall give the other party written notice of such fact within ten (10) days after the determination, interpretation or decision is communicated by the Architect/Engineer. In the actual performance of the Work, however, the Contractor shall, in the first instance, proceed in accordance with instructions given by the Architect/Engineer unless the Owner and the Contractor mutually agree that the Contractor shall proceed otherwise.

(d) All orders from the Owner to the Contractor shall either be transmitted through the Architect/Engineer or communicated directly to the Contractor and the Architect/Engineer by the Owner.

(e) Should the Owner choose to employ another or different Architect/Engineer, the status of the Architect/Engineer so employed shall be the same as that of the former Architect/Engineer.

(f) The Architect/Engineer will provide to the Owner and the Contractor after each visit to the Site, a written report indicating the date, time of day, weather conditions and the names of the persons representing the Architect/Engineer who participated in the visit. The report will advise the Owner of any problems that were noted and shall compare the Architect/Engineer's observations of the actual progress of the Work with that reported by the Contractor. On the basis of his on-Site observations as Architect/Engineer, he will make every reasonable effort to guard the Owner against defects and deficiencies in the Work of the Contractor. He shall have the authority to inspect the Work, to note and report Defective Work and deviations from the Contract Documents to the Owner, to reject same, and to recommend to the Owner the suspension of the Work when necessary to prevent Defective Work from proceeding or being covered.
(g) The Architect/Engineer shall not be responsible for construction means, methods, techniques, sequences or procedures (other than those expressly specified in Contract Documents), or for safety precautions and programs in connection with the Work, and he shall not be responsible for the Contractor's failure to carry out the Contractor's own responsibilities.

(h) The Architect/Engineer generally conveys written decisions and notices to the Contractor through the Project Manager and shall generally receive information and Notices from the Contractor through the Project Manager unless otherwise agreed. The Owner may delegate from the Architect/Engineer to the Project Manager certain inspection, verification, acceptance, rejection, and administrative duties and authority, but any such delegation shall be in writing and a copy thereof provided to the Contractor.

(i) The provisions of this section are included as information only to describe the relationship between the Owner, A/E, and Contractor. No failure of the A/E to act in accordance with this section shall relieve the Contractor from his obligations under the Contract or create any rights in favor of the Contractor.

16. INSPECTION

(a) All material and workmanship shall be subject to inspection, examination and testing by the Owner, the Architect/Engineer, the Project Inspector, authorized inspectors and authorized independent testing entities at any and all times during manufacture and/or construction. The Architect/Engineer and the Owner shall have authority to reject defective material and workmanship and require its correction. Rejected workmanship shall be satisfactorily corrected and rejected material shall be satisfactorily replaced with proper material without charge therefor, and the Contractor shall promptly segregate and remove the rejected material from the Site. If the Contractor fails to proceed at once with replacement of rejected material and/or the correction of defective workmanship, the Owner may, by contract or otherwise, replace such material and/or correct such workmanship and charge the cost to the Contractor, or may terminate the right of the Contractor to proceed as provided in Section 41 of these General Conditions, the Contractor and surety being liable for any damage to the same extent as provided in Section 41 for termination thereunder.

(b) Site inspections, tests conducted on Site or tests of materials gathered on Site, which the Contract requires to be performed by independent testing entities, shall be contracted and paid for by the Owner. Examples of such tests are the testing of cast-in-place concrete, foundation materials, soil compaction, pile installations, caisson bearings and steel framing connections. The Contractor shall promptly furnish, without additional charge, all reasonable facilities, labor and materials necessary and convenient for making such tests. Except as provided in (d) below, whenever such examination and testing finds defective materials, equipment or workmanship, the Contractor shall reimburse the Owner for the cost of reexamination and retesting. Although conducted by independent testing entities, the Owner will not contract and pay for tests or certifications of materials, manufactured products or assemblies which the Contract, codes, standards, etc., require to be tested and/or certified for compliance with industry standards such as Underwriters Laboratories, Factory Mutual or ASTM. If fees are charged for such tests and certifications, they shall be paid by the Contractor. The Contractor shall also pay for all inspections, tests, and certifications which the Contract specifically requires him to perform or to pay, together with any inspections and tests which he chooses to perform for his own purposes, but are not required by the Contract.

(c) Where Work is related to or dependent on the Defective Work, the Contractor shall stop such related or dependent Work until the Defective Work or deficiency is corrected or an alternative solution is presented that is satisfactory to the Owner. Where Work is rejected because of defective material or workmanship, the Contractor shall stop like Work in other areas or locations on the Project until the matter is resolved and the Owner has approved corrective measures.
(d) Should it be considered necessary or advisable by Owner or the Architect/Engineer at any time before final acceptance of the entire Work to make an examination of any part of the Work already completed, by removing or tearing out portions of the Work, the Contractor shall on request promptly furnish all necessary facilities, labor and material to expose the Work to be tested to the extent required. If such Work is found to be defective in any respect, due to the fault of the Contractor or his Subcontractors, the Contractor shall defray all the expenses of uncovering the Work, of examination and testing, and of satisfactory reconstruction. If, however, such Work is found to meet the requirements of the Contract, the actual cost of the Contractor's labor and material necessarily involved in uncovering the Work, the cost of examination and testing, and Contractor's cost of material and labor necessary for replacement including a markup of fifteen (15%) percent for overhead and profit shall be paid to the Contractor and he shall, in addition, if completion of the Work has been delayed thereby, be granted a suitable extension of time. Notwithstanding the foregoing, the Contractor shall be responsible for all costs and expenses in removing and replacing the Work if the Contractor had covered the Work prior to any inspection or test contrary to the instructions of the A/E, Owner or Project Inspector.

(e) The Project Inspector has the authority to recommend to the Architect/Engineer and the Owner that the Work be suspended when in his judgment the Contract Documents are not being followed. Any such suspension shall be continued only until the matter in question is resolved to the satisfaction of the Owner. The cost of any such Work stoppage shall be borne by the Contractor unless it is later determined that no fault existed in the Contractor's Work.

(f) The Project Inspector has the right and the authority to:

1. Inspect all construction materials, equipment, and supplies for quality and for compliance with the Contract Documents and/or approved shop drawings and Submittals.

2. Inspect workmanship for compliance with the standards described in the Contract Documents.

3. Observe and report on all tests and inspections performed by the Contractor.

4. Recommend rejection of Work which does not conform to requirements of the Contract Documents.

5. Keep a record of construction activities, tests, inspections, and reports.

6. Attend all joint Site construction meetings and inspections held by the Owner and/or the A/E with the Contractor.

7. Check materials and equipment, together with documentation related thereto, delivered for conformance with approved Submittals and the Contract.

8. Check installations for proper workmanship and conformance with shop drawing and installation instructions.

9. Assist in the review and verification of the CO-12, Schedule of Values & Certificate for Payment, submitted by the Contractor each month.

10. Do all things for or on behalf of the Owner as the Owner may subsequently direct in writing.

(g) The Project Inspector has no authority to:
(1) Authorize deviations from the Contract Documents;

(2) Enter into the area of responsibility of the Contractor's superintendent;

(3) Issue directions relative to any aspect of construction means, methods, techniques, sequences or procedures, or in regard to safety precautions and programs in connection with the Work;

(4) Authorize or suggest that the Owner occupy the Project, in whole or in part; or

(5) Issue a certificate for payment.

Any inspections, examinations or testing performed pursuant to this Section 16 are for the benefit of the Owner only and not for the Contractor. The Contractor may not rely upon any act, statement, failure to act, or failure to properly perform their duties on the part of the Project Inspector, the Architect/Engineer, the Owner, or the Owner’s other inspectors and/or testing entities. An act, statement, or failure to act, or failure to properly perform their duties on the part of the Project Inspector, the Architect/Engineer, the Owner, or the Owner’s other inspectors and/or testing entities, shall not in any way excuse, or constitute or imply acceptance of Defective Work or improper performance of the Contract by the Contractor, or relieve the Contractor from its sole responsibility for performing the Work in accordance with the requirements of the Contract, and shall not be the basis for a claim, cause of action or right to sue the Owner.

17. SUPERINTENDENCE BY CONTRACTOR

(a) The Contractor shall have a competent foreman or superintendent, satisfactory to the Architect/Engineer and the Owner, on the Site at all times during the progress of the Work. The superintendent or foreman shall be familiar with and be able to read and understand the plans and specifications, and be capable of communicating orally and in writing with the Owner's inspectors and the Contractor's workers. The Contractor shall be responsible for all construction means, methods, techniques, sequences and procedures, for coordinating all portions of the Work under the Contract except where otherwise specified in the Contract Documents, and for all safety and worker health programs and practices. The Contractor shall notify the Owner, in writing, of any proposed change in superintendent, including the reason therefor, prior to making such change.

(b) The Contractor shall, at all times, enforce strict discipline and good order among the workers on the Project, and shall not employ on the Work, or contract with, any unfit person, anyone not skilled in the Work assigned to him, or anyone who will not work in harmony with those employed by the Contractor, the Subcontractors, the Owner or the Owner's separate contractors and their subcontractors.

(c) The Owner may, in writing, require the Contractor to remove from the Site any employee or Subcontractor's employee the Owner deems to be incompetent, careless, not working in harmony with others on the Site, or otherwise objectionable, but the Owner shall have no obligation to do so.

18. CONSTRUCTION SUPERVISION, METHODS AND PROCEDURES

(a) The Contractor shall be solely responsible for supervising and directing the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract. The Contractor shall be solely responsible for the means, methods, techniques, sequences and procedures of construction and for coordinating all portions of the Work under the Contract, except where otherwise specified in the Contract Documents. However, the Contractor shall not be responsible for the negligence of others in the design or selection of a specific means, method, technique, sequence or procedure of
construction which is indicated in and required by the Contract. The Contractor is solely responsible to the Owner that the finished Work complies with the Contract Documents.

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

(b) If a specific means, method, technique, sequence or procedure of construction is indicated in or required by the Contract Documents, the Contractor may furnish or utilize a substitute means, method, sequence, technique or procedure of construction acceptable to Architect/Engineer, subject to the Owner's right to disapprove. The Contractor must submit its written request for the substitution to the Architect/Engineer with sufficient information to allow the Architect/Engineer to determine that the substitute proposed is equivalent to that indicated or required by the Contract.

(c) The divisions and sections of the Specifications and the identification of any drawings shall not control the Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

19. **SCHEDULE OF THE WORK**

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

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

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

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

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

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

(1) For Contracts with a price of $1,500,000 or less, a bar graph schedule will satisfy the above requirement. The schedule shall indicate the estimated starting and completion dates for each major element of the work. See (b) below.

(2) For Contracts with a price over $1,500,000, a Critical Path Method (CPM) schedule shall be utilized to control the planning and scheduling of the Work. The CPM schedule shall be the responsibility of the Contractor and shall be paid for by the Contractor. See (c) below.

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

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

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

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

The CPM schedule shall be time-scaled on a weekly basis and shall be drawn or plotted at a level of detail and logic which will schedule all salient features of the Work, including not only the actual construction Work for each trade, but also the submission of shop drawings and other Submittals for approval, approval of shop drawings by Architect/Engineer, placing of orders for materials, the manufacture and delivery of materials, the testing and installation of materials and equipment, and all Work activities to be performed by the Contractor. Failure to include any element of Work required for the performance of this Contract shall not excuse the Contractor from completing all Work required within the Time for Completion, Contract Completion Date and any interim deadlines established by the Contract.
The Contractor shall allow sufficient time in his schedule for the A/E to conduct whatever associated reviews or inspections as may be required under the A/E's contract with the Owner. If the A/E and the Contractor are unable to agree as to what constitutes sufficient time, the Owner shall determine the appropriate duration for such Architect/Engineer activities. Each Work activity will be assigned a time estimate by the Contractor. One day shall be the smallest time unit used.

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

When completed, the CPM schedule shall be submitted to the Architect/Engineer and the Owner for review. The CPM schedule will identify and describe each activity, state the duration of each activity, the calendar dates for the early and late start and the early and late finish of each activity, and clearly highlight all activities on the critical path. "Total float" and "free float" shall be indicated for all activities. Float time, whether "free float" or "total float" as defined in Section 1, shall not be considered for the exclusive use or benefit of either the Owner or the Contractor, but must be allocated in the best interest of completing the Work within the Time for Completion or the Contract Completion Date. Extensions to the Time for Completion or the Contract Completion Date, when granted by Change Order, will be granted only when equitable time adjustment exceeds the Total Float in the activity or path of activities affected by the change. On contracts with a price over $5,000,000, the CPM schedule shall also show what part of the Contract Price (expressed in U.S. dollars) is attributable to each activity on the schedule, the sum of which for all activities shall equal the total Contract Price. On contracts with a price over $10,000,000, the CPM schedule shall also show the planned workforce (crew size and number of crews) and the major pieces of equipment required for each activity on the schedule. When acceptable to the Owner and Architect/Engineer as to compliance with the requirements of this Section, but not as to logic, the schedule shall become the CPM schedule for the Project. Acceptance of the schedule by the Owner does not indicate agreement with nor responsibility for the proposed or actual duration of any activity shown on the accepted schedule.

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

(e) Progress Delay: Should any of the following conditions exist, the Owner may require the Contractor to prepare, at no extra cost to the Owner, a plan of action and a recovery schedule for completing the Work by the Contract Time for Completion or the Contract Completion Date:

(1) The Contractor's monthly progress report indicates delays that are, in the opinion of the A/E or the Owner, of sufficient magnitude that the Contractor's ability to complete the
Work by the scheduled Time for Completion or the Contract Completion Date is brought into question;

(2) The CPM schedule sorted by early finish shows the Contractor to be thirty (30) or more days behind the critical path schedule at any time during construction up to thirty (30) days prior to scheduled Substantial Completion date;

(3) The Contractor desires to make changes in the logic (sequencing of Work) or the planned duration of future activities of the CPM schedule which, in the opinion of the Architect/Engineer or the Owner, are of a major nature.

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

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

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

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

20. **SCHEDULE OF VALUES AND CERTIFICATE FOR PAYMENT**

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

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

(b) If the Contractor requests, or intends to request, payment for materials stored in an approved and secure manner, the Schedule of Values must indicate the amount for labor and the amount for materials, and in a supplement thereto must include an itemized list of materials for that trade or Work section. The material breakdown shall be in sufficient detail to allow verification of the quantities required for the Project, the quantities delivered, the Work completed, and the quantities stored on or off Site.

(c) The "Value of Work Completed" portion of the Form CO-12 shall be completed, the Contractor's certification completed and signed, and the appropriate substantiating material attached to each Certificate for Payment (CO-12). Such substantiating material includes, but is not limited to, invoices for materials, delivery tickets, time sheets, payroll records, daily job logs/records, and similar materials which, in the opinion of the Owner and the A/E, are necessary or sufficient to justify payment of the amount requested.

(d) The labor progress for any task or activity shall be calculated based upon the percentage of Work complete up to fifty percent (50%) of the completion of the task or activity. Thereafter, the evaluation of labor progress will be based upon the effort required to complete that task or activity. The material progress shall be calculated as the invoiced dollar cost of materials used in relationship to the amount estimated as necessary to complete a particular element of Work. When calculating material progress, credit shall be given for installed material as well as that stored on the Site and any material stored off Site which has been certified by the Architect/Engineer in accordance with Section 36 of these General Conditions.

(e) Should Work included in previous Form CO-12 submittals, and for which payment has been made, subsequently be identified, by tests, inspection, or other means, as not acceptable or not conforming to Contract requirements, the "Value of Work Completed" portion of the first Form CO-12 submitted after such identification shall be modified to reduce the "completed" value of that Work by deleting the value of that which has been identified as not acceptable or nonconforming.

21. ACCESS TO WORK

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

22. SURVEYS AND LAYOUT

(a) The Owner shall furnish the Contractor all necessary documents showing property lines and the location of existing buildings and improvements. The Contractor shall provide competent surveying and engineering services to execute the Work in accordance with the Contract and shall be responsible for the accuracy of these surveying and engineering services.

(b) Such general reference points and benchmarks on the Site as will enable the Contractor to proceed with the Work will be established in the plans and specifications. If the Contractor finds that any previously established reference points have been lost or destroyed, he shall promptly notify the Architect/Engineer.

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

23. PLANS AND SPECIFICATIONS

(a) The general character and scope of the Work are illustrated by the plans and the specifications. If the Contractor deems additional detail or information to be needed, he shall request the same in writing from the Architect/Engineer. His request shall precisely state the detail or information needed and shall explain why it is needed. The Contractor shall also indicate a date when the requested information is required. The Architect/Engineer shall provide by Field Order such further detail and information as is necessary by the date required so long as the date indicated is reasonable. Any additional drawings and instructions supplied to the Contractor shall be consistent with the Contract Documents, shall be true developments thereof, and shall be so prepared that they can be reasonably interpreted as a part thereof. The Contractor shall carry out the Work in accordance with the additional detail drawings and instructions at no additional cost or time to the Owner.

(b) If the Contractor finds a conflict, error, omission, or other discrepancy in the plans or specifications, he shall notify the Architect/Engineer in writing as soon as possible, but before proceeding with the affected Work. The Architect/Engineer shall issue a clarification by Field Order to the Contractor stating the correct requirements. If the Contractor deems the Field Order requires additional Work, he shall notify the A/E of such prior to proceeding with that Work and he shall submit a request for Change Order along with a detailed substantiating cost proposal through the A/E to the Owner within ten (10) calendar days. If such conflict, error, omission or other discrepancy in plans or specifications was reasonably apparent or with reasonable diligence should have been apparent to the Contractor prior to submitting its bid, and the Contractor failed to submit questions to the A/E in the time and manner required by the Instructions to Bidders, then any claims shall be deemed waived and the Contractor shall not be entitled to additional compensation or time, or entitled to sue the Owner based on such conflict, error, omission or other discrepancy. If the Contractor performs any Work, or is delayed in performing any Work, where such Work involves a conflict, error, omission, or other discrepancy in the plans and specifications that the Contractor knew about, or with reasonable diligence should have known about, and fails to notify the A/E and Owner as required, the Contractor shall assume full responsibility for such performance or delay and shall bear all costs attributable to correcting any Work requiring correction or to any delay, and such conflict, error, omission, or other discrepancy shall not be the basis for a claim, cause of action or right to sue the Owner.

(c) In case of differences between small and large scale drawings, the large scale drawings shall govern. Where on any of the drawings a portion of the Work is drawn out and the remainder is indicated in outline, the parts drawn out shall apply also to all other like portions of the Work.

(d) Where the word "similar" appears on the drawings, it shall be interpreted in its general sense and not as meaning identical, and all details shall be worked out in relation to their location and their connection with other parts of the Work.

(e) The specifications are divided into several parts, or sections, for convenience only, since the entire specifications must be considered as a whole. The divisions of the specifications are not intended to control the Contractor in dividing the Work among Subcontractors or to limit the Work performed by any trade. The Contractor shall be solely responsible for the coordination of the trades, Subcontractors and vendors engaged in the Work.

(f) Measurements or dimensions shown on the drawings for Site features, utilities and structures shall be verified at the Site by the Contractor before commencing the Work. The Contractor shall not scale measurements or dimensions from the drawings. If there are discrepancies, the Architect/Engineer shall be consulted. If new Work is to connect to, match with or be provided in
existing Work, the Contractor shall verify the actual existing conditions and necessary dimensions prior to ordering or fabrication.

(g) As-Built Drawings: The Contractor shall maintain at the Site for the Owner one copy of all drawings, specifications, addenda, approved shop or setting drawings, Change Orders and other modifications (collectively referred to herein as "As-Built Drawings") in good order and marked to record all changes as they occur during construction. These shall be available to the Architect/Engineer, the Owner, the Project Inspector, the Owner's other inspectors and to the Owner's testing personnel. The drawings shall be neatly and clearly marked in color during construction to record all variations made during construction. The representation of such variations shall include such supplementary notes, symbols, legends, and details as may be necessary to clearly show the as-built construction.

(h) Record Drawings: Upon completion of the Work and prior to the final inspection, the Contractor shall deliver to the Architect/Engineer, for preparation of the Record Drawings, one complete set of "As-Built Drawings" referred to in the preceding subsection.

24. SUBMITTALS

(a) The Contractor shall submit a listing of all Submittals required by the Architect/Engineer or which the Contractor identifies as necessary, fixing the dates for the submission of shop or setting drawings, samples and product data. The listing shall be in a format acceptable to the Architect/Engineer. The Contractor shall identify all Submittals with the Owner's Project Code Number as required by Section 2(f).

(b) Submittals shall be forwarded to the Architect/Engineer for approval if required by the specifications or if requested by the Architect/Engineer or the Owner. No part of the Work dealt with by a Submittal shall be ordered, fabricated or installed by the Contractor, save at his own risk, until such approval has been given.

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

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

(d) Unless otherwise indicated or required elsewhere in the specifications, shop drawings shall be submitted in the form of one reproducible tracing and three blue line or black line prints. Catalog cuts, product data and other non-reproducible literature, except certificates, shall be submitted in six (6) copies minimum, of which three (3) will be retained by the Architect/Engineer and the remainder will be returned to the Contractor.

(e) Submittals shall be accompanied by a letter of transmittal which shall list the Project Code Number, the Submittals included, the specification section number applicable to each, and the date shown on each Submittal. Submittals shall be complete in every respect and bound in sets. Each
Submittal shall be clearly marked to show each item, component and/or optional feature proposed to be incorporated into the Project. Cross reference to the plans or specifications as needed to identify the use for which the item or component is intended.

(f) The Contractor shall check the Submittals for compliance with the requirements of the Contract Documents. The Contractor shall clearly note in writing any and all items which deviate from the requirements of the Contract Documents. Reasons for deviation shall be included with the Submittal. The Contractor shall be solely responsible for checking all dimensions and coordinating all materials and trades to ensure that the components or products proposed, individually or in combination, will fit in the space available and that they will be compatible with other components or products provided.

(g) After checking each submittal, the Contractor shall stamp each sheet of the Submittal with the Contractor's review stamp. Data submitted in a bound volume or on one sheet printed on two sides, may be stamped on the front of the first sheet only. The Contractor's review stamp shall be worded as follows:

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

| Reviewed by ________________________________ Date ____________________ |

The person signing the review stamp shall be the person designated in writing by the Contractor as having that authority. (A copy of such designation shall be forwarded to the A/E prior to or with the first Submittal.) The signature on the stamped review statement shall be handwritten in ink. Stamped signatures are not acceptable.

(h) The Contractor shall forward all Submittals sufficiently in advance of construction requirements to allow reasonable time for checking, correcting, resubmitting and rechecking.

(i) If a Submittal indicates a departure from the Contract requirements, the Architect/Engineer may reject the Submittal or, if he deems it to have merit, may recommend it to the Owner, who shall approve or reject it as the Owner, in its sole discretion, sees fit. The departure from the Contract requirements shall be further authorized by a Change Order, if a reduction or increase in the Contract Price is appropriate.

(j) The Architect/Engineer is responsible to the Owner, but not to the Contractor, to verify that the Submittals conform to the design concept and functional requirements of the plans and specifications, that the detailed design portrayed in shop drawings and proposed equipment and materials shown in Submittals are of the quality specified and will function properly, and that the Submittals comply with the Contract Documents.

(k) The Work shall be in accordance with approved Submittals. Approval of the Contractor's Submittals by the A/E does not relieve the Contractor from responsibility of complying with the Contract and all drawings and specifications, except as changed by Change Order.

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

(m) Additional Submittal requirements are shown in the specifications.

25. FEES, SERVICES AND FACILITIES

(a) The Contractor shall obtain all permits, except the Building Permit, and pay for all fees and
charges necessary for temporary access and public right-of-way blockage or use, for temporary
connections to utilities and for the use of property (other than the Site) for storage of materials and
other purposes unless otherwise specifically stated in the Contract Documents.

(b) Certain projects such as renovations and interior modifications of existing buildings will usually
have water and electric service to the building. In those instances, water and electric power, if
required for the Work under the Contract, will be furnished by the Owner subject to reasonable
use by the Contractor, only to the extent and capacity of present services. The Contractor shall
be responsible for providing required connections, temporary wiring, piping, etc. to these services in
a safe manner and in accordance with applicable codes. All temporary wire, pipe, etc. shall be
removed before the Substantial Completion inspection. Acceptance by the Contractor of the use of
Owner's water and electricity constitutes a release to the Owner of all claims and of all liability to
the Contractor for whatever damages which may result from power and water outages or voltage
variations.

(c) The Owner shall pay any connection charges for permanent utility connections directly to the
utility Supplier. The Contractor shall coordinate such connections with the utility Supplier.

(d) It is understood that, except as otherwise specifically stated in the Contract Documents, the
Contractor, either directly or through his Subcontractors, shall provide and pay for all material,
labor, tools, equipment, water, light, power, telephone and other services or facilities of every
nature whatsoever necessary to execute completely and deliver the Work within the Contract Time
for Completion or before the Contract Completion Date.

(e) The Contractor shall provide temporary facilities including Contractor’s office space, Owner’s
Project Inspector office space (if required by the specifications), toilet facilities, and storage space,
as required for the operations and the protection of the material and work. Number, sizes and
locations shall be subject to approval of the Owner. Sanitary facilities shall be an approved type of
chemical toilet and shall be regularly serviced.

26. EQUALS

(a) **Brand names:** Unless otherwise stated in the specifications, the name of a certain brand, make or
manufacturer denotes the characteristics, quality, workmanship, economy of operation and
suitability for the intended purpose of the article desired, but does not restrict the Contractor to the
specific brand, make, or manufacturer; it is set forth to convey to the Contractor the general style,
type, character and quality of the article specified.

(b) **Equal materials, equipment or assemblies:** Whenever in these Contract Documents, a particular
brand, make of material, device or equipment is shown or specified, such brand, make of material,
device or equipment shall be regarded merely as a standard. Any other brand, make or
manufacturer of a product, assembly or equipment which in the opinion of the Architect/Engineer
is the equal of that specified, considering quality, capabilities, workmanship, configuration,
economy of operation, useful life, compatibility with design of the Work, and suitability for the intended purpose, will be accepted unless rejected by the Owner as not being equal.

(c) **Substitute materials, equipment or assemblies:** The Contractor may propose to substitute a material, product, equipment, or assembly which deviates from the requirements of the Contract Documents but which the Contractor deems will perform the same function and have equal capabilities, service life, economy of operations, and suitability for the intended purpose. The proposal must include any cost differentials proposed. The Owner will have the A/E provide an initial evaluation of such proposed substitutes and provide a recommendation on acceptability and indicate the A/E's redesign fee to incorporate the substitution in the design. If the proposed substitute is acceptable to the Owner, a Change Order will be proposed to the Contractor to accept the substitute and to deduct the cost of the A/E redesign fee and the proposed cost savings from the Contract Price. The Owner shall have the right to limit or reject substitutions at its sole discretion.

(d) The Contractor shall be responsible for making all changes in the Work necessary to adapt and accommodate any equal or substitute product which it uses. The necessary changes shall be made at the Contractor's expense.

27. **AVAILABILITY OF MATERIALS**

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

28. **CONTRACTOR'S TITLE TO MATERIALS**

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

29. **STANDARDS FOR MATERIALS INSTALLATION & WORKMANSHIP**

(a) Unless otherwise specifically provided in the Contract, all equipment, material, and accessories incorporated in the Work are to be new and in first class condition.

(b) Unless specifically approved by the Owner or required by the Contract, the Contractor shall not incorporate into the Work any materials containing asbestos or any material known by the industry to be hazardous to the health of building construction workers, maintenance workers, or occupants. If the Contractor becomes aware that a material required by the Contract contains asbestos or other hazardous materials, he shall notify the Owner and the Architect/Engineer immediately and shall take no further steps to acquire or install any such material without first obtaining Owner approval.

(c) All workmanship shall be of the highest quality found in the building industry in every respect. All items of Work shall be done by craftsmen or tradesmen skilled in the particular task or activity to which they are assigned. In the acceptance or rejection of Work, no allowance will be made for lack of skill on the part of workmen. Poor or inferior workmanship (as determined by the Architect/Engineer, the Owner or other inspecting authorities) shall be removed and replaced at Contractor's expense such that the Work conforms to the highest quality standards of the trades concerned, or otherwise corrected to the satisfaction of the Architect/Engineer, the Owner, or other inspecting authority, as applicable.
(d) Under the various sections of the plans or specifications, where specified items are supplied with the manufacturer's printed instructions, recommendations, or directions for installation, or where such instructions, recommendations, or directions are available, installation of the specified items shall be in strict accordance with the manufacturer's printed instructions unless those instructions contradict the plans or specifications, in which case the Architect/Engineer will be notified for an interpretation and decision.

(e) Under the various sections of the plans or specifications, where reference is made to specific codes or standards governing the installation of specified items, installation shall in all cases be in strict accordance with the referenced codes and standards. Where no reference is made to specific codes or standards, installation shall conform to the generally recognized applicable standards for first-class installation of the specific item to be installed. Contractors are expected to be proficient and skilled in their respective trades and knowledgeable of the Codes and Standards of the National Fire Protection Association (NFPA), National Electric Code (NEC), Occupational Safety and Health Act (OSHA) and other codes and standards applicable to installations and associated work by his trade.

(f) Where the manufacturer's printed instructions are not available for installation of specific items, where specific codes or standards are not referenced to govern the installation or specific items, or where there is uncertainty on the part of the Contractor concerning the installation procedures to be followed or the quality of workmanship to be maintained in the installation of specific items, the Contractor shall consult the Architect/Engineer for approval of the installation procedures or the specific standards governing the quality of workmanship the Contractor proposes to follow or maintain during the installation of the items in question.

(g) During and/or at the completion of installation of any items, the tests designated in the plans or specifications necessary to assure proper and satisfactory functioning for its intended purpose shall be performed by the Contractor or by its Subcontractor responsible for the completed installation. All costs for such testing are to be included in the Contract Price. If required by the Contract Documents, the Contractor shall furnish prior to final inspection the manufacturers' certificates evidencing that products meet or exceed applicable performance, warranty and other requirements, and certificates that products have been properly installed and tested.

30. WARRANTY OF MATERIALS AND WORKMANSHIP

(a) The Contractor warrants that, unless otherwise specified, all materials and equipment incorporated in the Work under the Contract shall be new, in first class condition, and in accordance with the Contract Documents. The Contractor further warrants that all workmanship shall be of the highest quality and in accordance with the Contract Documents and shall be performed by persons qualified at their respective trades.

(b) Work not conforming to these warranties shall be considered defective.

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

31. USE OF SITE AND REMOVAL OF DEBRIS

(a) The Contractor shall:

(1) Perform the Work in such a manner as not to interrupt or interfere with the operation of any existing activity on, or in proximity to, the Site or with the Work of any other separate contractor;
(2) Store his apparatus, materials, supplies and equipment in such orderly fashion at the Site of the Work as will not unduly interfere with the progress of his Work or the work of any other separate contractor; and

(3) Place upon the Work or any part thereof only such loads as are consistent with the safety of that portion of the Work.

(b) The Contractor expressly undertakes, either directly or through his Subcontractor(s), to effect all cutting, filling or patching of the Work required to make the same conform to the plans and specifications, and, except with the consent of the Architect/Engineer, not to cut or otherwise alter the Work of any other separate contractor. The Contractor shall not damage or endanger any portion of the Work or Site, including existing improvements, unless called for by the Contract.

(c) The Contractor expressly undertakes, either directly or through his Subcontractor(s), to clean up frequently all refuse, rubbish, scrap materials and debris caused by his operations, to the end that at all times the Site shall present a neat, orderly and workmanlike appearance. No such refuse, rubbish, scrap material and debris shall be left within the completed Work nor buried on the building Site, but shall be removed from the Site and properly disposed of in a licensed landfill or otherwise as required by law.

(d) The Contractor expressly undertakes, either directly or through his Subcontractor(s), before Final Payment or such prior time as the Owner may require, to remove all surplus material, false Work, temporary structures, including foundations thereof, plants of any description and debris of every nature resulting from his operations and to put the Site in a neat, orderly condition; to thoroughly clean and leave reasonably dust free all finished surfaces including all equipment, piping, etc., on the interior of all buildings included in the Contract; and to clean thoroughly all glass installed under the Contract, including the removal of all paint and mortar splatters and other defacements. If the Contractor fails to clean up at the time required herein, the Owner may do so and charge the costs incurred thereby to the Contractor in accordance with Section 10 (b) of these General Conditions.

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

32. TEMPORARY ROADS

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

33. SIGNS

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

(a) The Contractor expressly undertakes, both directly and through his Subcontractors, to take every reasonable precaution at all times for the protection of all persons and property which may come on the Site or be affected by the Contractor's Work.

(b) The Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Any violation of these requirements or duties or any potential safety hazard that is brought to the attention of the Contractor by the Architect/Engineer, the Owner, or any other persons shall be immediately abated.

(c) The provisions of all rules and regulations governing health and safety as adopted by the Safety Codes Commission of the Commonwealth of Virginia, issued by the Department of Labor and Industry under Title 40.1 of the Code of Virginia, shall apply to all Work under this Contract.

(d) The Contractor shall continuously maintain adequate protection of all his Work from damage and shall protect the Owner's property from injury or loss arising in connection with this Contract. He shall make good any such damage, injury or loss, except as may be directly and solely due to errors in the Contract Documents or caused by agents or employees of the Owner. The Contractor shall adequately protect adjacent property to prevent any damage to it or loss of use and enjoyment by its owners. The Contractor shall provide and maintain all passageways, guard fences, lights and other facilities for protection as required by public authority, local conditions, or the Contract.

(e) In an emergency affecting the health, safety or life of persons or of the Work, or of the adjoining property, the Contractor, without special instruction or authorization from the Architect/Engineer or the Owner, shall act, at his discretion, to prevent such threatened loss or injury. Also, should he, to prevent threatened loss or injury, be instructed or authorized to act by the Architect/Engineer or the Owner, he shall act immediately, without appeal. Any additional compensation or extension of time claimed by the Contractor on account of any emergency work shall be determined as provided by Section 38 of these General Conditions.

(f) When necessary for the proper protection of the Work, temporary heating of a type approved by the Architect/Engineer must be provided by the Contractor, at the Contractor's expense, unless otherwise specified.

35. CLIMATIC CONDITIONS

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

36. PAYMENTS TO CONTRACTOR

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

(1) The Contractor must notify the Owner in writing, at least ten (10) days prior to the submission of the payment request, through the Architect/Engineer, that specific items will be stored off Site in a designated, secured place within the Commonwealth of Virginia. The Schedule of Values must be detailed to indicate separately both the value of the material and the labor/installation for trades requesting payment for stored materials. By giving such notification and by requesting payment for material stored off Site, the Contractor warrants that the storage location is safe and suitable for the type of material stored and that the materials are identified as being the property of the Contractor, and agrees that loss of materials stored off the Site shall not relieve the Contractor of the obligation to timely furnish these types and quantities of materials for the Project and meet the Time for Completion or Contract Completion Date, subject to Section 43 (b) of these General Conditions. If the storage location is more than 20 miles from the Site, the Contractor may be required to reimburse the Owner for the cost incurred for travel to the storage location to verify the Contractor's request for payment for materials stored off Site.

(2) Such notification, as well as the payment request, shall:

(a) Itemize the quantity of such materials and document with invoices showing the cost of said materials;

(b) Indicate the identification markings used on the materials, which shall clearly reference the materials to the particular project;

(c) Identify the specific location of the materials, which must be within reasonable proximity to the Site and within the Commonwealth of Virginia;

(d) Include a letter from the Contractor's Surety which confirms that the Surety on the Performance Bond and the Labor and Material Payment Bond has been notified of the request for payment of materials stored off the Site and agrees that the materials are covered by the bond; and

(e) Include a certificate of all-risk builder's risk insurance in an amount not less than the fair market value of the materials, which shall name the Owner and the Contractor as co-insureds.

(3) The Architect/Engineer shall indicate, in writing, to the Owner that Submittals for such materials have been reviewed and meet the requirements of the Contract Documents, that the stored materials meet the requirement of the plans and specifications, and that such materials conform to the approved Submittals. Should the A/E deem it necessary to visit the storage site to make such review, the Contractor shall bear the costs incurred therewith.

(4) The Owner, through the Architect/Engineer, shall notify the Contractor in writing of its agreement to prepayment for materials.
(5) The Contractor shall notify the Owner in writing, through the Architect/Engineer, when the materials are to be transferred to the Site and when the materials are received at the Site.

(b) Payment will not be made for materials or equipment stored on or off the Site which are not scheduled for incorporation into the Work within the six months next following submission of the request for payment, unless the Contractor has the prior consent of the Owner, which consent may be granted or withheld by the Owner in its discretion if, in the opinion of the Owner, it is not necessary to procure the materials more than six months in advance of use to assure their availability when needed.

(c) No payment shall be made to the Contractor until:

1. The Contractor furnishes to the Owner its Social Security Number (SSN) if an individual, or its Federal Employer Identification Number (FEIN) if a proprietorship, partnership, corporation or other legal entity.

2. Certificates of Insurance or other satisfactory evidence of compliance by the Contractor with all the requirements of Section 11 (and Section 12 if applicable) of these General Conditions have been delivered to the Owner.

3. Copies of any certificates of insurance required of a Subcontractor under Section 11 have been delivered to the Owner for payments based on Work performed by a Subcontractor.

4. The Contractor has (i) submitted a preliminary schedule which is acceptable to the Owner in accordance with Section 19(a), (ii) submitted a fully complete Project schedule accepted by the Owner in accordance with Section 19(a), (iii) maintained the monthly bar graphs or status reports required by Section 19(d), or (iv) provided a recovery schedule pursuant to Section 19(e), as each of them may be required.

(d) In making such partial payments, five percent (5%) of each payment to the Contractor shall be retained until Final Completion and acceptance of all Work covered by the Contract, unless otherwise provided by any law, regulation or program of the federal government. Such retainage shall be held to assure faithful performance of the Contract and may also be used as a fund to deduct amounts due to or claimed by the Owner, including, but not limited to, payment to the Owner of all moneys due for deductive change orders, credits, uncorrected Defective Work, interest, damages, and the like. (§2.2-4333 of the Code of Virginia) The Owner may, at its sole discretion, agree on an item by item basis to release the retainage on items which are fully 100% complete and which have accepted by the Owner as being tested and complete and on which no further action or work will be required. Retainage which is released by the Owner shall be distributed by the Contractor in conformance with Section 37 of these General Conditions.

(e) All material and Work for which partial payments are made shall thereupon become the sole property of the Owner, but this provision shall not relieve the Contractor from the sole responsibility for all materials and Work, including those for which payment has been made, or for the restoration of any damaged materials or Work. Nor shall this provision serve as a waiver of the right of the Owner to require the fulfillment of all of the terms and conditions of the Contract.

(f) The Final Payment, which shall include the retainage, less any amounts due to or claimed by the Owner, shall not become due until the Architect/Engineer and the Owner agree that Final Completion has been achieved and until the Contractor shall deliver to the Owner through the Architect/Engineer a Certificate of Completion by the Contractor (Form CO-13.2) and an Affidavit of Payment of Claims (Form CO-13), stating that all Subcontractors and Suppliers of either labor or materials have been paid all sums claimed by them for Work performed or
materials furnished in connection with this Project less retainage. Amounts due the Owner which may be withheld from the Final Payment may include, but are not limited to, amounts due pursuant to Section 3(i), Section 16(a)-(d), Section 31(d), costs incurred to repair or replace Defective Work, costs incurred as a result of the Contractor's negligent acts or omissions or omissions of those for whom the Contractor is responsible, delay damages under Section 43(h), and any liquidated or actual damages. If all Subcontractors and Suppliers of labor and materials have not been paid the full amount claimed by them, the Contractor shall list each to which an agreed amount of money is due or which has a claim in dispute. With respect to all such Subcontractors and Suppliers, the Contractor shall provide to the Owner, along with the Affidavit of Payment of Claims (Form CO-13), an affidavit from each such Subcontractor and Supplier stating the amount of their subcontract or supply contract, the percentage of completion, the amounts paid to them by the Contractor and the dates of payment, the amount of money still due if any, any interest due the Subcontractor or Supplier pursuant to Section 37(b) below, and whether satisfactory arrangements have been made for the payment of said amounts. If no agreement can be reached between the Contractor and one or more Subcontractors or Suppliers as to the amounts owed to the Subcontractors or Suppliers, the Owner may, in its discretion, pay such portion of the moneys due to the Contractor which is claimed by the Subcontractor or Supplier into a Virginia Court or Federal Court sitting in Virginia, in the manner provided by law. Said payment into court shall be deemed a payment to the Contractor. Nothing in this Section shall be construed as creating any obligation or contractual relationship between the Owner and any Subcontractor or Supplier, and the Owner shall not be liable to any Subcontractor or Supplier on account of any failure or delay of the Owner in complying with the terms hereof.

(g) Upon successful completion of the final inspection and all Work required by the Contract, including but not limited to the delivery of As-Built drawings, equipment manuals, written warranties, acceptance of the Work by the Owner and the delivery of the affidavits required in Section 36(f) of these General Conditions, the Architect/Engineer shall deliver the written Certificate of Completion by the Architect/Engineer (Form CO-13.1) to the Owner, with a copy to the Contractor, stating the entire amount of Work performed and compensation earned by the Contractor, including extra work and compensation therefor. The Owner may accept the Work for occupancy or use while asserting claims against the Contractor; disputing the amount of compensation due to the Contractor; disputing the quality of the Work, its completion, or its compliance with the Contract Documents; or any other reason.

(h) Unless there is a dispute about the compensation due to the Contractor, Defective Work, quality of the Work, compliance with the Contract Documents, completion itself, claims by the Owner, other matters in contention between the parties, or unless monies are withheld pursuant to the Comptroller's Debt Setoff Program, within thirty (30) days after receipt and acceptance of the Schedule of Values and Certificate for Payment (Form CO-12) in proper form by the Architect/Engineer at the monthly pay meeting, which shall be considered the receipt date, the Owner shall pay to the Contractor the amount approved by the Architect/Engineer, less all prior payments and advances whatsoever to or for the account of the Contractor. In the case of Final Payment, the completed Affidavit of Payment of Claims (Form CO-13), the Certificate of Completion by the Contractor (Form CO-13.2) and the Certificate of Completion by the Architect/Engineer (Form CO-13.1) shall accompany the final Schedule of Values and Certificate for Payment (Form CO-12) which is forwarded to the Owner for payment. The date on which payment is due shall be referred to as the Payment Date. In the event of disputes, payment shall be mailed on or before the Payment Date for amounts and Work not in dispute, subject to any set offs claimed by the Owner; provided, however in instances where further appropriations are required by the General Assembly or where the issuance of further bonds is required, in which case, payment shall be made within thirty (30) days after the effective date of such appropriation or within thirty (30) days after the receipt of bond proceeds by the Owner. All prior estimates and payments including those relating to extra Work may be corrected and adjusted in any payment and shall be corrected and adjusted in the Final Payment. In the event that any request for payment (CO-12) by the Contractor contains a defect or impropriety, the Owner shall notify the Contractor
of any defect or impropriety which would prevent payment by the Payment Date, within five (5) days after receipt of the Schedule of Values and Certificate for Payment (Form CO-12) by the Owner from the Architect/Engineer.

(i) Interest shall accrue on all amounts owed by the Owner to the Contractor which remain unpaid seven (7) days following the Payment Date. Said interest shall accrue at the discounted ninety-day U.S. Treasury bill rate as established by the Weekly Auction and as reported in the publication entitled The Wall Street Journal on the weekday following each such Weekly Auction. During the period of time when the amounts due to the Contractor remain unpaid following the seventh (7) day after the Payment Date, the interest accruing shall fluctuate on a weekly basis and shall be that established by the immediately prior Weekly Auction. It shall be the responsibility of the Contractor to gather and substantiate the applicable weekly interest rates to the satisfaction of the Owner and to calculate to the satisfaction of the Owner the interest due. In no event shall the rate of interest charge exceed the rate of interest charged pursuant to §58.1-1812 of the Code of Virginia. No interest shall accrue on retainage or when payment is delayed because of disagreement between the Owner and the Contractor regarding the quantity, quality or timeliness of the Work, including, but not limited to, compliance with Contract Documents or the accuracy of any Request for Payment received. This exception to the accrual of interest stated in the preceding sentence shall apply only to that portion of a delayed payment which is actually the subject of such a disagreement and shall apply only for the duration of such disagreement. Nothing contained herein shall be interpreted, however, to prevent the withholding of retainage to assure faithful performance of the Contract. These same provisions relating to payment of interest to the Contractor shall apply also to the computation and accrual of interest on any amounts due from the Contractor to the Owner for deductive change orders and to amounts due on any claims by the Owner. The date of mailing of any payment by the U.S. Mail is deemed to be the date of payment to the addressee.

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

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

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

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

(a) Within seven (7) days after receipt of amounts paid to the Contractor by the Owner for Work performed by the Subcontractor or Supplier under this Contract,

   (1) Pay the Subcontractor or Supplier for the proportionate share of the total payment received from the Owner attributable to the Work performed by the Subcontractor or the materials furnished by the Supplier under this Contract; or

   (2) Notify the Subcontractor or Supplier, in writing, of his intention to withhold all or a part of the Subcontractor or Supplier's payment with the reason for nonpayment;
(b) Pay interest to the Subcontractor or Supplier on all amounts owed by the Contractor that remain unpaid after seven (7) days following receipt by the Contractor of payment from the Owner for Work performed by the Subcontractor or materials furnished by the Supplier under this contract, except for amounts withheld as allowed under subsection (a) (2) of this Section.

(c) Include in each of his subcontracts a provision requiring each Subcontractor to include in each of its subcontracts a provision requiring each subcontractor to include or otherwise be subject to the same payment and interest requirements with respect to each lower tier subcontractor. Each Subcontractor shall include with its invoice to, or request for payment from, the Contractor, a certification that that Subcontractor has paid each of its suppliers and lower tier subcontractors their proportionate share of previous payments received from the Contractor attributable to the Work performed or the materials furnished by it under this Contract.

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

38. CHANGES IN THE WORK

(a) The Owner may at any time, by written order utilizing the Commonwealth of Virginia Change Order Form CO-11 and without notice to the sureties, make changes in the Work which are within the general scope of the Contract, except that no change will be made which will increase the total Contract Price to an amount more than twenty percent (20%) in excess of the original Contract Price without notice to sureties. At the time of the Preconstruction Meeting described in Section 50(b), the Contractor and the Owner shall advise each other in writing of their designees authorized to accept and/or approve changes to the Contract Price and of any limits to each designee's authority. Should any designee or limits of authority change during the time this Contract is in effect, the Contractor or Owner with such a change shall give written notice to the other within seven (7) calendar days, utilizing the procedures set forth in these General Conditions. The Contractor agrees and understands that the authority of the Owner's designee is limited by Virginia Code §2.2-4309 and any other applicable statute.

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

1. **Fixed Price:** By a mutually agreed fixed amount change to the Contract Price and/or time allowed for completion of the Work. The Change Order shall be substantiated by documentation itemizing the estimated quantities and costs of all labor, materials, and equipment required as well as any mark-up used. The price change shall include the Contractor's reasonable overhead and profit, including overhead for any unreasonable delay arising from or related to the Change Order and/or the change in the Work. See Subsections (d), (e) and (f), below.

2. **Unit Price:** By using unit prices and calculating the number of net units of Work in each part of the Work which is changed, either as the Work progresses or before Work on the change commences, and by then multiplying the calculated number of units by the applicable unit price set forth in the Contract or multiplying by a mutually agreed unit price if none was provided in the Contract. No additional percentage markup for overhead or profit shall be added to the unit prices.

3. **Cost Reimbursement:** By ordering the Contractor to perform the changed Work on a cost reimbursement basis by issuing two Change Orders citing this Subsection, an initiating Change Order, authorizing the changed Work, and a confirming Change Order
approving the additional cost and time for the changed Work. The initiating Change Order shall:

(i) Describe the scope or parameters of the change in the Work;

(ii) Describe the cost items to be itemized and verified for payment and the method of measuring the quantity of work performed;

(iii) Address the impact on the schedule for Substantial Completion;

(iv) Order the Contractor to proceed with the change to the Work;

(v) Order the Contractor to keep in a form acceptable to the Owner, an accurate, itemized account of the actual cost of the change in the Work, including, but not limited to, the actual costs of labor, materials, equipment, and supplies;

(vi) Order the Contractor to annotate a copy of the Project schedule to accurately show the status of the Work at the time this first Change Order is issued, to show the start and finish dates of the changed Work, and the status of the Work when the changed Work is completed; and

(vii) State that a confirming Change Order will be issued to incorporate the cost of the ordered changed in the Work into the Contract Price and any change in the Contract Time for Completion or Contract Completion Date.

The Contractor shall sign the initiating Change Order acknowledging he has been ordered to proceed with the change in the Work. The Contractor's signature on each initiating Change Order citing this Subsection 38(a)(3) as the method for determining the cost of the Work shall not constitute the Contractor's agreement on the cost or time impact of the ordered Work.

Except as otherwise may be agreed to in writing by the Owner, the Contractor’s costs shall not exceed those prevailing for the trades or crafts, materials, and equipment in the locality of the Project, may include only those items listed as allowable in Subsection 38(e), and shall not include any of the costs listed as not allowable in Subsection 38(f). The Owner shall be permitted, on a daily basis, to verify such records and may require such additional records as are necessary to determine the cost of the change to the Work.

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

(b) The Contractor shall review any change requested or directed by the Owner and shall respond in writing within fourteen (14) days after receipt of the proposed change (or such other reasonable time as the Owner may direct), stating the effect of the proposed change upon his Work, including any increase or decrease in the Time for Completion or Contract Completion Date and the Contract Price. The Contractor shall furnish to the Owner an itemized breakdown of the quantities and prices used in computing the proposed change in Contract Price.
The Owner shall review the Contractor's proposal and respond to the Contractor within thirty (30) days of receipt. If a change to the Contract Price and Time for Completion or Contract Completion Date are agreed upon, both parties shall sign the Change Order. If the Contract Price and Time for Completion or Contract Completion Date are not agreed upon, the Owner may direct the Contractor to proceed under Subsection 38(a)(3), above. Change Orders shall be effective when signed by both parties, unless approval by the Governor or his designee is required, in which event the Change Orders shall be effective when signed by the Governor or his designee.

(c) In figuring changes, any instructions for measurement of quantities set forth in the Contract shall be followed.

(d) Overhead and profit for both additive and deductive changes in the Work (other than changes covered by unit prices) shall be paid by applying the specified percentage markups only on the net cost of the changed Work (i.e. difference in cost between original and changed Work excluding overhead and profit). Said percentages for overhead and profit shall reasonably approximate the Contractor’s overhead and profit, but shall not exceed the percentages for each category listed below:

1. If a Subcontractor does all or part of the changed Work, the Subcontractor's markup for overhead and profit on the Work it performs shall be a maximum of fifteen percent (15%). The Contractor's markup for overhead and profit on the Subcontractor's price shall be a maximum of ten percent (10%).

2. If the Contractor does all or part of the changed Work, its markup for overhead and profit on the changed Work it performs shall be a maximum of fifteen percent (15%).

3. If a Sub-subcontractor at any tier does all or part of the changed Work, the Sub-subcontractor's markup on that Work shall be a maximum of fifteen percent (15%). The markup for overhead and profit on a sub-subcontractor's Work by the Contractor and all intervening tiers of Subcontractors shall not exceed a total of ten percent (10%).

4. Where Work is deleted from the Contract prior to commencement of that Work without substitution of other similar Work, one hundred percent (100%) of the Contract Price attributable to that Work shall be deducted from the Contract Price. However, in the event that material Submittals have been approved and orders placed for said materials, a lesser amount, but in no case less than eighty percent (80%) of the Contract Price attributable to that Work, shall be deducted from the Contract Price. The credit to the Owner for reduced premiums on labor and material bonds and performance bonds shall in all cases be one hundred percent (100%).

(e) Allowable costs for changes in the Work may include the following:

1. Labor costs for employees directly employed in the change in the Work, including salaries and wages plus the cost of payroll charges and fringe benefits and overtime premiums, if such premiums are explicitly authorized by the Owner.

2. Materials incorporated into the change to the Work, including costs of transportation and storage, if applicable. If applicable, all cash discounts shall accrue to the Contractor, unless the Owner deposits funds with the Contractor to make such payments, and all trade discounts, rebates, refunds, and returns from the sale of surplus materials shall accrue to the Owner.

3. Equipment incorporated in the changed Work or equipment used directly in accomplishing the Work. If rented expressly for accomplishing the change in the Work,
the cost shall be the rental rate according to the terms of the rental agreement, which the Owner shall have the right to approve. If owned by the Contractor, the costs shall be a reasonable price based upon the life expectancy of the equipment and the purchase price of the equipment. If applicable, transportation costs may be included.

(4) Costs of increases in premiums for the Standard Labor and Material Payment Bond and the Standard Performance Bond, provided coverage for the cost of the change in the Work results in such increased costs. At the Owner's request, the Contractor shall provide proof of his notification to the Surety of the change in the Work and of the Surety's agreement to include such change in its coverage. The cost of the increase in premium shall be an allowable cost but shall not be marked up.

(5) Contractor and Subcontractor overhead costs as set forth in Subsection (d) markups above.

(6) **Agreed Compensation for Overhead for Changes to Time for Completion or Contract Completion Date for Changes to the Work:** If the change in the Work also changes the Time for Completion or the Contract Completion Date by adding days to complete the Work, an itemized accounting of the following direct Site overhead and home office overhead and other indirect overhead expenses set forth in subparagraphs (i) and (ii) below may be considered as allowable costs for compensation in addition to those shown above:

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

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

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

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

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

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

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

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

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

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

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

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

All Change Orders, except the initiating Change Orders under Subsection 38(a)(3), shall include all time and monetary impacts of the change, whether the Change Order is considered alone or with any or all other changes during the course of the Project. Failure to include a change to Time for Completion, Contract Completion Date and Contract Price in Change Orders under Subsections 38(a)(1) or (2) or a confirming Change Order under Subsection 38(a)(3) shall waive any change to the Time for Completion, Contract Completion Date and Contract Price unless the parties mutually agree in writing to postpone a determination of the change to time and price resulting from the Change Order. Such a determination may be postponed not more than forty-five (45) days to give the Contractor an opportunity to demonstrate a change in the time and price needed to complete the Work. During any such postponement, the Work shall proceed, unless the Owner agrees otherwise.

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

(h) The acceptance by the Contractor of any payment made by the Owner under a Change Order shall be and operate as a release to the Owner of all claims by the Contractor and of all liability owing to the Contractor for all things done or furnished in connection with the Work described in the Change Order. The execution of any Change Order by the Owner shall not be an acceptance of any Work or materials not in accordance with the Contract Documents, nor shall it relieve the Contractor of responsibility for faulty materials or workmanship or operate to release the Contractor or his surety from any obligation under the Contract, the Standard Performance Bond, or the Standard Labor and Material Payment Bond.

(i) Payments will not be made for any Work, labor, or materials performed on a unit price or a Subsection 38(a)(3) basis until the Contractor has furnished the Owner documents, certified as true and correct by an authorized officer or agent of the Contractor, evidencing the cost of such Work, labor, and materials. The Owner may require any or all of the following documentation to be provided by the Contractor.

For Work performed on a Unit Price basis:

1. Certified measurements of authorized and approved excavations, over-excavations, fills and/or backfills, and similar work;
2. Certified measurements of piling installed, caissons installed, and similar work; and/or
3. Daily records of waste materials removed from the Site and/or fill materials imported to the Site.

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

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

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

39. EXTRAS

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

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

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

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

(a) If the Contractor should be adjudged as bankrupt, or if he should make a general assignment for the benefit of his creditors, or if a receiver should be appointed on account of his insolvency, the Owner may terminate the Contract. If the Contractor should refuse or should repeatedly fail, except in cases for which extension of time is provided, to supply enough properly skilled workmen or proper materials and equipment, or if he should fail to perform the Work in a diligent, efficient, workmanlike, skillful, and careful manner, or if he should fail or refuse to perform the Work in accordance with the Contract Documents, or if he should fail to make prompt payment to Subcontractors or Suppliers of material or labor, or if he should disregard laws, ordinances or the written instructions of the Architect/Engineer or the Owner, or otherwise be in substantial violation of any provision of the Contract, then the Owner may terminate the Contract.

(b) Prior to termination of the Contract for cause, the Owner shall give the Contractor and his surety ten (10) days written notice of such termination in the manner provided in Section 1 (definition of "Notice") of these General Conditions and allow ten (10) days during which the Contractor and/or his surety may rectify the basis for the notice. If rectified to the satisfaction of the Owner within said ten (10) days, the Owner may rescind its notice of termination. If not, the termination for cause shall become effective at the end of the ten (10) day notice period without further notice to the Contractor. In the alternative, the Owner may, in writing, postpone the effective date of the termination for cause, at its sole discretion, if it should receive reassurances from the Contractor and/or its surety that the basis for the termination will be remedied in a time and manner which the Owner finds acceptable. If at any time after such postponement, the Owner determines that Contractor and/or its surety has not or is not likely to rectify the causes of termination in an acceptable manner or within the time allowed, then the Owner may immediately terminate the Contract for cause, without the necessity of further ten (10) day notice, by notifying the Contractor and his surety in writing of the termination. In no event shall termination for cause terminate the obligations of the Contractor's surety on its payment and performance bonds.
(c) Upon termination of the Contract becoming effective, the Owner shall take possession of the Site and of all materials, tools and equipment thereon and shall proceed as follows:

(1) **No Security Provided:** If no security has been provided pursuant to Section 8 herein, the Owner shall finish the Work by whatever method he may deem expedient. If the expense of finishing the Work, including compensation for additional managerial and administrative services, shall exceed the unpaid balance of the Contract Price, the Contractor shall pay the difference to the Owner, together with any other expenses of terminating the Contract and having it completed by others.

(2) **Security Provided:** If security has been provided pursuant to Section 8 herein, the Owner shall provide written notice to the Surety that termination of the Contract became effective and proceed as set forth in the Standard Performance Bond, CO-10, Form # DGS-30-084, and the Terms and Conditions therein. If the expense of finishing the Work, including compensation for additional managerial and administrative services, shall exceed the unpaid balance of the Contract Price and the penal amount of the Standard Performance Bond, the Contractor shall pay the difference to the Owner, together with any other expenses of terminating the Contract and having it completed by others.

(d) If it should be judicially determined that the Owner improperly terminated this Contract for cause, then the termination shall be deemed to be a termination for the convenience of the Owner and the Contractor’s rights and remedies shall be solely limited to those provided by Section 42 of these General Conditions.

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

42. **TERMINATION BY OWNER FOR CONVENIENCE**

(a) The Owner may terminate this Contract, in whole or in part, at any time without cause upon giving the Contractor written notice of such termination in the manner provided in Section 1 (definition of "Notice") of these General Conditions. Upon such termination, the Contractor shall immediately cease Work and remove from the Site all of its labor forces, equipment and such of its materials as Owner elects not to purchase or to assume in the manner hereinafter provided. Upon such termination, the Contractor shall take such steps as Owner may require to assign to the Owner the Contractor's interest in all Subcontracts and purchase orders designated by Owner. After all such steps have been taken to Owner's satisfaction, the Contractor shall receive as full compensation for termination and assignment the following:

(1) Amounts due for Work performed in accordance with the Contract subsequent to the latest approved Schedule of Values and Certificate for Payment (Form CO-12) through the date of termination; and

(2) All amounts then otherwise due under the terms of this Contract associated with the Work performed prior to the date of termination;

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

(b) In no event shall termination for the convenience of the Owner terminate the obligations of the Contractor's surety on its payment and performance bonds.

(c) Any actions by the Owner permitted herein shall not be deemed a waiver of any other right or remedy of the Owner under the Contract or under the law. The provisions of this Section shall survive termination of the Contract.

43. DAMAGES FOR DELAYS; EXTENSION OF TIME

(a) **Excusable Non-Compensable Delays:** If and to the extent that the Contractor is delayed at any time in the progress of the Work by strikes, fires, unusual delays in transportation or unavoidable casualties, or other unforeseeable causes outside the control of the Owner or the Contractor, with the exception of delays caused by weather provided for in Section 6, for which the Contractor intends to request an extension of either the Time for Completion or the Contract Completion Date, as the case may be, then the Contractor shall give the Owner and Architect/Engineer written notice of the delay within ten (10) days of the inception of the delay. The Contractor shall also give written notice to the Owner and Architect/Engineer of the termination of the delay not more than ten (10) days after such termination. If the Owner agrees with the existence and the impact of the delay, the Owner shall extend the Time for Completion, the Contract Completion Date or Final Completion Date, as the case may be, for the length of time that the date for Substantial Completion or Final Completion was actually delayed thereby, and the Contractor shall not be charged with liquidated or actual damages for delay during the period of such extension nor shall the Contractor be due compensation or damages of any kind, under any theory of law, as a result of such delay, the impact of such delay, or acceleration of Work as a result of such delay. No extension of the Time for Completion or Contract Completion Date shall be granted unless the Contractor demonstrates a delay in the critical path of the approved CPM schedule or approved bar graph schedule.

(b) **Excusable Compensable Delays:** If and to the extent that the Contractor is unreasonably delayed at any time in the progress of the Work by any acts or omissions of the Owner, its agents, employees, or the Owner's separate, independent contractors, and due to causes within the Owner's control, and the Contractor intends to request an extension of either the Time for Completion or the Contract Completion Date, as the case may be, and/or additional compensation for damages, if any, caused by the delay, then the Contractor shall notify the Owner and the Architect/Engineer immediately at the time of the occurrence giving rise to the delay by the fastest means available and shall give written notice no later than two (2) working days after inception of the delay. The Contractor's written notice shall specify the nature of the delay claimed by the Contractor, the cause of the delay, and the impact of the delay on the Contractor's Work schedule. The Owner shall then have three (3) working days to respond to the Contractor's notice with a resolution, remedy, direction to alleviate the delay, or rejection of the Contractor's notice of delay. The Owner's failure to respond within the time required shall be deemed to be a rejection of the Contractor’s notice. The Contractor shall also give written notice to the Owner and Architect/Engineer of the termination of the delay not more than ten (10) days after such termination. If and to the extent that a delay is caused by or due to the Owner or A/E taking any actions permitted or required by the Contract, the Contractor shall be entitled to an extension of time or additional compensation only for the portion of the delay that is unreasonable, if any.
(c) **Non-Excusable Non-Compensable Delays:** The Contractor shall not be entitled to an extension of the Time for Completion or Contract Completion Date or to any additional compensation for delays if and to the extent they are (1) caused by acts or omissions, fault or negligence of the Contractor or his subcontractors, agents or employees or due to foreseeable causes within their control, including, but not limited to, delays resulting from Defective Work including workmanship and/or materials, from rejected work which must be corrected before dependent work can proceed, from Defective Work or rejected work for which corrective action must be determined before like work can proceed, from incomplete, incorrect, or unacceptable Submittals or samples, or from the failure to furnish enough properly skilled workers, proper materials or necessary equipment to diligently perform the work in a timely manner in accordance with the Project schedule; or (2) due to causes that would entitle the Owner to recover delay costs or damages.

(d) No extension of time or additional compensation, if applicable, will be granted for any delay unless the claimed delay directly affects the critical path of the approved CPM schedule or the schedule shown on the approved bar graph schedule, whichever is applicable, and any float has been consumed. No extension of time or additional compensation shall be given for a delay if the Contractor failed to give notice in the manner and within the time prescribed in Subsections 43(a) or (b) above, whichever applies. Furthermore, no extension of time or additional compensation shall be given for any delay unless a written request therefor is made in writing to the Owner, with a copy to the Architect/Engineer, within twenty (20) days of the end of the delay. The request shall state the cause of the delay, the number of days of extension requested, and any additional compensation requested by the Contractor. Failure to give written notice of either the inception or the termination of the cause of delay or failure to present a request for extension of time and/or monetary compensation within the times prescribed shall constitute a waiver of any claim for extension or additional compensation based upon that cause.

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

**Agreed Compensation/Liquidated Damages for Owner Delay:**

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

(f) If the Contractor submits a claim for delay damages pursuant to Subsection 43(b) above, the Contractor shall be liable to the Owner for a percentage of all costs incurred by the Owner in investigating, analyzing, negotiating, and litigating or arbitrating the claim, which percentage shall
be equal to the percentage of the Contractor's total delay claim which is determined through litigation or arbitration to be false or to have no basis in law or in fact. (§ 2.2-4335, Code of Virginia)

(g) Any change in the Contract Time for Completion or Contract Completion Date shall be accomplished only by issuance of a Change Order.

(h) **Agreed Compensation/Liquidated Damages for Contractor Delay:** If the Contractor fails to complete the Work within the Time for Completion or the Contract Completion Date, the Contractor shall be liable to the Owner in the amounts set forth in the Supplemental General Conditions, if any, not as a penalty, but as fixed, agreed, and liquidated damages for delay until the Work is substantially or finally completed as the case may be. If liquidated damages are not so fixed in the Supplemental General Conditions, the Contractor shall be liable for any and all actual damages sustained as a result of delay. In addition to damages for delay, whether liquidated or actual, the Contractor shall also be liable for any and all actual damages sustained by the Owner as a result of any other breach of the Contract, including, but not limited to, Defective Work and abandonment of the Contract.

(i) If liquidated damages are provided by the Supplemental General Conditions, the following provisions apply:

1. If the Work is not substantially complete by the Time for Completion or Contract Completion Date, the Contractor shall owe to the Owner, not as a penalty but as Step One liquidated damages, the sum stated in the Supplemental General Conditions for Step One liquidated damages for each and every partial or total calendar day of delay in Substantial Completion.

2. Once the Work is substantially complete, the accrual of Step One liquidated damages shall cease and the Contractor shall have thirty (30) calendar days in which to achieve Final Completion of the Work.

3. If Final Completion of the Work is not achieved on or before the thirtieth (30th) calendar day after Substantial Completion, and if the Owner has not granted any extension of time, the Contractor shall owe to the Owner, not as a penalty but as Step Two liquidated damages, the sum stated in the Supplemental General Conditions as Step Two liquidated damages for each and every partial or total calendar day of delay in Final Completion.

(j) The Contractor waives any and all defenses as to the validity of any liquidated damage provisions in the General Conditions or other Contract Documents, or of any liquidated damages assessed against the Contractor, on the grounds that such damages are void as penalties or are not reasonably related to actual damages.

44. **INSPECTION FOR SUBSTANTIAL COMPLETION & FINAL COMPLETION**

(a) The Contractor shall notify the Owner, in writing on the Certificate of Partial or Substantial Completion by the Contractor (Form CO-13.2a), of the date when the Work or designated portion thereof, will be, in his opinion, substantially complete and ready for inspection and testing to determine if it has reached Substantial Completion. The notice shall be given at least ten (10) days in advance of said date and shall be forwarded through the Architect/Engineer, who will attach his written endorsement as to whether or not he concurs with the Contractor's statement that the Work will be ready for inspection and testing on the date given. The Architect/Engineer's endorsement is a convenience to the Owner only and shall not relieve the Contractor of his responsibility in the matter nor shall the Architect/Engineer's endorsement be deemed to be evidence that the Work was substantially complete and ready for inspection and testing. Inspection and testing shall take place at a time(s) mutually agreeable to the Contractor, Owner and Architect/Engineer.
The inspection shall include a demonstration by the Contractor that all equipment, systems and operable components of the project function properly and in accordance with the Contract Documents. The Contractor shall furnish access for the inspection and testing as provided in Section 21 of these General Conditions. The inspection and testing shall determine whether Substantial Completion has been accomplished and shall result in a written list of unfinished Work and Defective Work, commonly referred to as a "punch list", which must be finished and corrected to obtain Final Completion.

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

(b) The Contractor shall notify the Owner, in writing on the Certificate of Completion by the Contractor (form CO-13.2), of the date when the Work has reached or will reach Final Completion and will be ready for final inspection and testing. The notice shall be given at least five (5) days in advance of said date and shall be forwarded through the Architect/Engineer, who will attach his endorsement as to whether or not he concurs in the Contractor's statement that the Work will be ready for inspection and testing on the date given. That inspection and any necessary testing shall be conducted in the same manner as the inspection for Substantial Completion. When the Work is finally and totally complete, including the elimination of all defects, the Work shall be finally accepted by the Owner and Final Payment shall be made in accordance with Section 36 of these General Conditions.

(c) The Architect/Engineer shall conduct the inspections. The Owner may elect to have other persons of its choosing also participate in the inspections. If one or more Substantial or Final Completion reinspections are required, the Contractor shall reimburse the Owner for all costs of reinspection or, at the Owner's option, the costs may be deducted from payments due to the Contractor.

(d) A representative of the State Fire Marshal's Office will either be present at the Substantial and Final Completion inspections or otherwise inspect the completed Work and advise the Owner whether the Work meets the fire safety requirements of the applicable building code.

(e) Approval of Work at or as a result of any inspection required herein shall not release the Contractor or his surety from responsibility for complying with the Contract.

45. GUARANTEE OF WORK

(a) Except as otherwise specified, all Work shall be, and is hereby, guaranteed by the Contractor against defects resulting from the use of materials, equipment or workmanship, which are defective, inferior, or not in accordance with the terms of the Contract, for one (1) year from the date of Final Completion of the entire Project by the Owner. Equipment and facilities which have seasonal limitations on their operation (e.g. heating or air conditioning units) shall be guaranteed for one (1) full year from the date of seasonally appropriate tests and acceptance, in writing, by the Owner. Where the Owner agrees to take Beneficial Occupancy of a portion or phase of the Work which has been determined to be substantially complete before the entire Work is finally completed, the guarantees for the materials, equipment and workmanship in that portion or phase shall begin on the date that the Owner takes Beneficial Occupancy, unless otherwise specified in the Supplemental General Conditions, Special Conditions, or by separate agreement.
(b) If, within any guarantee period, Work which is not in accordance with the Contract, Defective Work, or inferior material, equipment or workmanship is noted by the Owner or Architect/Engineer which requires or renders necessary repairs or changes in connection with the guaranteed Work, the Contractor shall, promptly upon receipt of notice from the Owner, such notice being given not later than two weeks after the guarantee period expires, and without expense to the Owner:

1. Place in satisfactory condition in every particular all of such guaranteed Work and correct all defects, inferior materials, equipment or workmanship therein;

2. Make good all damage to the structure or Site or equipment or contents thereof, which, in the opinion of the Owner or the Architect/Engineer, is the result of the use of materials, equipment or workmanship which are inferior, defective or not in accordance with the terms of the Contract; and

3. Make good any Work or materials or the equipment and contents of structures and/or Site disturbance that results from fulfilling the provisions of this Section.

(c) In any case, when in fulfilling the requirements of the Contract and this guarantee or any other guaranty or warranty, the Contractor disturbs any work performed by a separate contractor, he shall restore such work to a condition satisfactory to the Architect/Engineer and Owner and guarantee such restored work to the same extent as if it was guaranteed under this Contract.

(d) If the Contractor, after notice, fails to proceed promptly to comply with the terms of the guarantee as set forth in this Section, the Owner may have the defects or inferior materials, equipment or workmanship corrected and the Contractor and his surety shall be liable for all expense incurred.

(e) All special warranties and guarantees applicable to definite parts of the Work that may be stipulated in or required by the Contract Documents shall be subject to the terms of this Section during the first year of the life of such special warranty or guarantee.

(f) The guarantee of this Section shall be in addition to and not in lieu of all other warranties, express or implied, applicable to or arising from this Contract or by law.

(g) Nothing contained in this Section shall be construed to establish a period of limitation with respect to any other obligation which the Contractor might have under the Contract Documents, including liability for Defective Work under Section 30. This Section relates only to the specific obligation of the Contractor as set forth in this Section to correct the Work and does not limit the time within which his obligation to comply with the Contract Documents may be sought to be enforced, nor the time within which proceedings may be commenced to establish the Contractor's liability with respect to his other obligations under the Contract Documents.

(h) In the event the Work of the Contractor is to be modified by another contractor, either before or after the Final Inspection provided by Section 44 of the General Conditions, the first Contractor shall remain responsible in all respects under this Section's Guarantee of Work and under any other warranties or guarantees, express or implied, applicable to or arising from this Contract or by law. However, the Contractor shall not be responsible for any defects in material or workmanship introduced by the contractor modifying his Work. The first Contractor and the contractor making the modifications shall each be solely responsible for his respective work. The contractor modifying the earlier Work shall be responsible for any damage to or defect introduced into the Work by his modification. If the first contractor claims that a subsequent contractor has introduced defects of materials and/or workmanship into his Work, it shall be the burden of the contractor making the claim to demonstrate clearly the nature and extent of such introduced defects and the
other contractor's responsibility for those defects. Any contractor modifying the work of another shall have the same burden if he asserts that defects in his work were caused by the contractor whose work he is modifying.

(i) The Contractor shall indemnify and hold harmless the Commonwealth of Virginia, the Owner and the Owner’s consultants, representatives, agents and employees from and against any and all claims, causes of action, losses, costs, expenses or damages, including but not limited to attorney's fees, of any kind or nature whatsoever, arising from or relating to any bodily injury, including sickness, disease or death, or any property damage, that result from or arise out of the work performed by the Contractor, or by or in consequence of any neglect in safeguarding the Work, through the use of unacceptable materials in the Work, or resulting from any act, omission, negligence, or misconduct of the Contractor, any of his subcontractors, anyone directly or indirectly employed by them or anyone for whose acts they may be liable. The Owner may retain as much of the moneys due the Contractor under the Contract as the Owner considers necessary to ensure that a fund will be available to pay a settlement or judgment of such suits, actions, or claims. If insufficient monies are or will become due, the Contractor’s surety and/or insurers will not be released from liability until all such claims and actions have been settled and suitable evidence to that effect has been furnished the Owner.

46. ASSIGNMENTS

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

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

(a) Contractual claims, whether for money or for other relief, shall be submitted, in writing, no later than sixty (60) days after Final Payment; however, written notice of the Contractor's intention to file such claim must be given within ten (10) days of the time of the occurrence or beginning of the Work upon which the claim is based. Such notice shall state that it is a “notice of intent to file a claim” and include a written statement describing the act or omission of the Owner or its agents that allegedly caused or may cause damage to the Contractor and the nature of the claimed damage. The submission of a timely notice is a prerequisite to recovery under this Section. Failure to submit such notice of intent within the time and in the manner required shall be a conclusive waiver of the claim by the Contractor. Oral notice, the Owner’s actual knowledge, or a written notice given after the expiration of ten (10) days of time of the occurrence or beginning of the Work upon which the claim is based, shall not be sufficient to satisfy the requirements of this Section. Although the Contractor may be required to submit certain classes of claims prior to Final Payment, and the Contractor is not prevented from submitting claims during the pendency of the Work, the Owner shall not be obligated to render a final written decision on any claim until after Final Payment. All claims shall state that they are “claims” pursuant to this Section, be submitted along with all practically available supporting evidence and documentation and the certification required by Subsection 47(f), and request a final decision. Certificates for payment, applications for payment, vouchers, invoices and similar requests for payment submitted for work done by the Contractor in accordance with the expected contract performance are routine submissions and shall not be considered claims under this Section. Proposed or requested change orders, demands for money compensation or other relief, and correspondence and e-mails to the Owner or its representatives, which do not strictly comply with the requirements of this Section, shall not be considered claims under this Section.
(b) No written decision denying a claim or addressing issues related to the claim shall be considered a denial pursuant to this Section unless the written decision makes express reference to this Section and is signed by the Agency head or his designee. The Contractor may not institute legal action prior to receipt of the Owner's final written decision on the claim unless the Owner fails to render such a decision within ninety (90) days of submission of the claim or within ninety (90) days of Final Payment, whichever is later.

(c) The decision of the agency head or other signatory on the Contract shall be final and conclusive unless the Contractor within six (6) months of the date of the final decision on a claim, initiates legal action as provided in § 2.2-4364 of the Code of Virginia. Failure of the Owner to render a decision within 90 days shall not result in the Contractor being awarded the relief claimed nor shall it result in any other relief or penalty. The sole result of the Owner's failure to render a decision within 90 days shall be the Contractor's right to immediately institute legal action. No administrative appeals procedure pursuant to § 2.2-4365 of the Code of Virginia has been established for contractual claims under this Contract.

(d) Pursuant to § 2.2-4366, Alternative Dispute Resolution, of the Code of Virginia, the Owner may enter into an agreement with the Contractor to submit disputes arising from the performance of this Contract to arbitration and utilize mediation and other alternative dispute resolution procedures. However, such procedures entered into by the Owner, the Commonwealth, or any department, institution, division, commission, board or bureau thereof, shall be non-binding and subject to § 2.2-514, as applicable.

(e) In the event that a dispute, claim or controversy between the Owner and the Contractor arises regarding the requirements of the Contract, the performance of the Work, payment due the Contractor, the terms of any Change Order, or otherwise, the Contractor shall not stop, suspend or delay the Work or any part of the Work to be performed under the Contract, or under any Change Order, or as ordered by the Owner. The Contractor shall continue to diligently prosecute the Work to completion, including work required in any Change Order or as directed by the Owner.

(f) Along with a claim submitted under this Section, the Contractor shall submit a claim certification form. Claims submitted without the certification form shall not constitute a proper claim and, if not submitted with the certification within the time required, shall be deemed to be waived.

(g) The remedies provided in these General Conditions, including costs, expenses, damages or extensions of time, shall be the Contractor’s sole remedies for the acts, omissions or breaches of the Owner, which shall survive termination or breach of the Contract.

48. ASBESTOS

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

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

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

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

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

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

(c) If asbestos abatement is included as part of the Work, the licensed asbestos Subcontractor shall obtain the insurance required under Section 11 (e) of these General Conditions.

49. TRAINING, OPERATION AND MAINTENANCE OF EQUIPMENT

(a) As a part of the Work, the Contractor in conjunction with his Subcontractors and Suppliers shall provide the Owner's operations and maintenance personnel with adequate instruction and training in the proper operation and maintenance of any equipment, systems, and related controls provided or altered in the Work. The training requirements may be further defined in the specifications.

(b) The Contractor shall provide the Owner with a minimum of two (2) copies of operating, maintenance and parts manuals for all equipment and systems provided in the Work. Further specific requirements may be indicated in the specifications.

50. PROJECT MEETINGS

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

(b) Preconstruction Meeting:

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

1. Persons involved from each entity and their chain of authority including the names of persons authorized to sign Change Orders and any limits to their authority. Name of Contractor’s on-site certified Responsible Land Disturber.
(2) Names, addresses, telephone numbers and FAX numbers to be used for Requests for Information (RFI), Requests for Clarification (RFC), Requests for Proposals (RFP), shop drawings, Submittals, and notices.

(3) Contractor's proposed construction schedule and Owner's sequencing requirements, if any.

(4) Schedule of Values and Certificate for Payment (Form C0-12) requirements and procedures.

(5) Procedures for shop drawings, product data and Submittals.

(6) Procedures for handling Field Orders and Change Order Form C0-11.

(7) Procedures for Contractor's request for time extension, if any.

(8) Construction Site requirements, procedures and clarifications to include:
   - Manner of conducting the Work
   - Site specialties such as dust and erosion control, stormwater management, project signs, clean up and housekeeping, temporary facilities, utilities, security, and traffic
   - Safety
   - Layout of the Work
   - Site visits by the A/E and others
   - Owner's Project Inspector duties
   - Running Punch List
   - As-Built Drawings

(9) Procedures and documentation of differing or unforeseen Site conditions

(10) Monthly Pay Meeting

(11) Project Close-Out requirements and procedures

(12) Project records

(c) Monthly Pay Meeting:

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

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

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

(1) Observations of status, quality and workmanship of Work in progress
(2) Validation of the Schedule of Values and Certificate for payment

(3) Conformance with proposed construction schedule

(4) Outstanding Requests for Information, Requests for Clarification and Requests for Proposal

(5) Submittals with action pending

(6) Status of pending Change Orders

(7) Status of Running Punch List items

(8) Work proposed for coming pay period

(9) Discussions of any problems or potential problems which need attention

(d) Other Meetings:

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

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

The Commonwealth of Virginia General Conditions of the Construction Contract, Form DGS-30-054 (CO-7), are modified and supplemented as hereinafter described.

1. Section 12 - INSURANCE FOR OWNER AND CONTRACTOR
   Delete Paragraphs (a), (b) and (c) as written and in its place add the following:
   “(a) The requirements of this section of the General Conditions for "all-risk" builders risk insurance on the full value of the entire building are waived for this project. The Owner maintains insurance on the existing building (including fire, vandalism and extended coverage). However, the Contractor shall provide “all risk” builders risk insurance for the Work in an amount equal to one hundred percent (100%) of the Contract Price for the Work. The loss, if any, is to be made adjustable with and payable to the Owner, in accordance with its interests, as they may appear. The Owner, its officers, employees and its agents, shall be named as an additional insured in any policy of insurance issued. Written evidence of the insurance shall be filed with the Owner no later than thirty (30) days following the award of the Contract. In the event of cancellation of this insurance, not less than thirty (30) days prior written notice must be sent to the Owner. A copy of the policy of insurance shall be given to the Owner upon demand.

   No change to paragraph (b) as written in the General Conditions.

   (c) The Contractor is responsible for providing any desired coverage for Contractor's or Subcontractors' buildings, equipment, materials, tools or supplies that are on-site.

   No change to paragraph (d) as written in the General Conditions.

2. Add the following Section 51 to the General Conditions of the Construction Contract:

   “51. Small Businesses and Women-Owned and Minority-Owned (SWAM) Business Procurement Plan
   The Owner has developed a “SWAM” plan for increasing procurement from small, women-owned, and minority-owned (SWAM) businesses in its construction program. The Owner’s SWAM aspirational goals and plan are included in the contract documents for use by the Contractor in developing its plan for involving small, women-owned, and minority-owned (SWAM) businesses through subcontracting, and through the purchasing of goods, materials, supplies and services in the Contractor’s construction program. The Owner’s plan provides criteria and goals for the Contractor in developing a plan, for submitting its plan and for reporting its achievements in meeting the goals established for the Contract.

   The Contractor shall, as soon as practicable after the posting of the Notice of Intent to Award but not later than 30 days after the effective date of the contract, provide a list of Subcontractors that are proposed to perform the work, including SWAM subcontractors, vendors and suppliers showing their DMBE certification numbers where applicable. Upon receipt of the list, the Owner may, based on the Agency SWAM Procurement Plan require the Contractor to provide additional information on work that has been bid by SWAM contractors, and areas in which the scope of work may be reduced in size to increase the pool of potential SWAM contractors. Selection of particular Subcontractors for a certain part of the work shall be made in accord with Section 9, Subcontracts of the General Conditions.

SUPPL GC 1
VCCS SWAM SPECIAL CONDITIONS

SMALL, WOMEN- AND MINORITY-OWNED BUSINESSES
SUBCONTRACTING REPORTING REQUIREMENTS & GOALS

A. It is the policy of the Virginia Community College System (VCCS) to contribute to the establishment, preservation, and strengthening of small businesses and businesses owned by women and minorities and to encourage their participation in State procurement activities.

B. Where it is practicable for any portion of the awarded contract to be subcontracted to other suppliers, the Contractor is encouraged to offer such business to minority and/or women-owned and/or small businesses.

C. When such business has been subcontracted to these firms and upon submission of each month’s pay request, the Contractor agrees to furnish the VCCS’s Facilities Management Services Department with the following information: name of firm, address, phone number, total dollar amount subcontracted or sub-subcontracted and percentage of the dollar amount to subcontractors and sub-subcontractors, type of product/service provided, and the firm’s Federal Employer Identification Number (FEIN). The Schedule of Values and Certificate of Payment (CO-12) requires that the Contractor also list its subcontractor’s and sub-subcontractors dollars and DMBE registration number beside each respective line item.

D. In accordance with Section 51 of the General Conditions to the contract, the Contractor shall, as soon as practicable after the signing of the contract but not later than 30 days after the effective date of the contract, provide it SWaM plan, as indicated in section “C” above. The submission of the SWaM plan is required before the first CO-12 will be approved for payment.

E. Upon submitting each CO-12 for payment, the Contractor shall accurately complete the SWaM utilization portion of the CO-12, including DMBE certification number of any subcontractor meeting the definition of a SWaM firm. It will be the responsibility of the Contractor to verify DMBE certification. The CO-12 shall be reviewed for accuracy at each monthly pay request meeting. Should the Owner determine that the Contractor has failed to adequately and correctly complete the SWaM section of the CO-12, subsequent CO-12 will not be approved for payment until an accurate and correct CO-12 is completed by the Contractor and re-submitted for approval.

F. In addition to the CO-12, the Contractor shall complete the VCCS: Subcontractor/Sub-tier SWaM Participation Log Sub and Sub-tier SWAM Participation Log.xls, and submit an electronic version monthly to gwoodard@vccs.edu. The Contractor may request an electronic version of the log from VCCS Facilities Management.
# Subcontractor/Sub-Tier SWAM Participation Log

<table>
<thead>
<tr>
<th>Subcontractor/Sub-Tier</th>
<th>Contact</th>
<th>Telephone Number</th>
<th>Trade</th>
<th>SWAM Category</th>
<th>Contract Amount</th>
<th>Contract %</th>
<th>Comments</th>
<th>DEMBE Certificate #</th>
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<td>% of Project SWAM Participation:</td>
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CONTRACT FORMS
COMMONWEALTH OF VIRGINIA
CONTRACT BETWEEN OWNER AND CONTRACTOR

This Contract, dated this __________ day of ________________, ______ between
______________________________________________________________ (“Owner”) and
______________________________________________________________ (“Contractor”),
is binding among and between these parties as of the date of the Owner’s signature.

RECITALS

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

    Owner:

    Attn:
    Address:
    City, State, Zip:
    Telephone: FAX:

    Contractor:

    Attn:
    Address:
    City, State, Zip:
    Telephone: FAX:
    Contractor’s Virginia License #:
    FEIN/SSN:
    SCC ID #:

2. The Project is identified as:

    Project Title: Southwest Virginia Community College – New Electronic Entrance Sign.
    Project Code – PC#: 260-A1260-078
    General Project Description: The project is generally described as the installation of new backlight signs
    and new LED signs on stone veneered CMU columns and support walls.

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

3. After competitive sealed bidding pursuant to the Virginia Public Procurement Act, Contractor is awarded this
Contract to perform the Work described by the Contract Documents for the above-described project (“the
Project”).
THEREFORE, in consideration of the Recitals set forth above, and good and valuable consideration as set forth below, the parties agree as follows:

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

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

   - this Contract Between Owner and Contractor (Form CO-9);
   - the Bid Form submitted by the Contractor;
   - Post Bid Modification(s), if any, dated ______________________;
   - the General Conditions of the Construction Contract, 2010 edition (Form CO-7), (referred to as the “General Conditions”)
   - the Supplemental General Conditions, if any;
   - the Special Conditions attached to the Owner’s Invitation for Bids;
   - the Owner’s Project Plans and Specifications dated _________________;
   -
   -
   -

   All of these documents are incorporated herein by reference.

3. TIME FOR COMPLETION: The Work shall be commenced on a date to be specified in a written order of the Owner and shall be Substantially Completed within ______ calendar days or not later than the Contract Completion Date which is _________________. The Work shall be finally completed within 30 days after the date of Substantial Completion of the Work.

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

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

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

7. NON-DISCRIMINATION: § 2.2-4311 of the Code of Virginia applies to this contract. See Section 4 of the General Conditions.
8. AUTHORIZATION TO TRANSACT BUSINESS: The Contractor certifies that, if it is organized as a stock or nonstock corporation, limited liability company, business trust, or limited partnership or registered as a registered limited liability partnership, it is authorized to transact business in the Commonwealth as a domestic or foreign business entity if so required by Title 13.1 or Title 50 of the Code of Virginia, or as otherwise required by law, and shall not allow its existence to lapse or its certificate of authority or registration to transact business in the Commonwealth, if so required under Title 13.1 or Title 50, to be revoked or cancelled at any time during the term of the Contract. The Contractor understands and agrees that the Owner may void this Contract if the Contractor fails to comply with these provisions.

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

For the CONTRACTOR:

By: __________________________
    (signature in ink)          (date)

                               __________________________
                               (typed name)

                               __________________________
                               (typed title)

Attest:

                               __________________________
                               (signature in ink)          (date)

For the OWNER:

By: __________________________
    (signature in ink)          (date)

                               __________________________
                               (typed name)

                               __________________________
                               (typed title)

Attest:

                               __________________________
                               (signature in ink)          (date)

Attachments:

- Bid Form Submitted by the Contractor
- Post Bid Modification, if any
COMMONWEALTH OF VIRGINIA
WORKERS' COMPENSATION
Certificate of Coverage

Section 2.2-4332, Code of Virginia, requires construction contractors and subcontractors to obtain and maintain workers' compensation insurance while performing work on behalf of the Commonwealth of Virginia, its departments, institutions, or agencies. This same requirement applies on behalf of local governments.

Evidence of coverage must be provided prior to commencement of Work.

This form must be completed and returned to the organization contracting the Work.

The undersigned organization stipulates that it:

A. has workers' compensation insurance and is in compliance with the Workers' Compensation statutes of the Commonwealth of Virginia. _____ Yes _____ No
   Insurance Company ____________________________
   Policy expiration date __________________________

B. is self insured for workers' compensation. ______ Yes

Title of Construction Contract: __________________________________________________________

Contract Number: __________________________________________________________

Signed by: ____________________________________________
   Title:______________________________________________
   Firm Name: __________________________________________
   Address: ____________________________________________
   ________________________________________________
NOTICE OF AWARD

TO:        DATE:

Re: INSTITUTION/AGENCY: Virginia Community College System
PROJECT TITLE: SWCC – New Electronic Entrance Sign
PROJECT NO: 260-A1260-078

Gentlemen:

Your Bid dated ________________, 2011 for the above Project has been considered and you are the apparent successful bidder. You are hereby notified that you have been awarded a contract for the referenced project subject to the provisions stated below.

The Contract Price of your contract is

______________________________________________ Dollars ($ ____________).

Three (3) copies each of the proposed Contract Between Owner and Contractor (CO-9) and the Contract Documents accompany this Notice of Award.

You must comply with the following conditions precedent within ten days of the date of this Notice of Award, that is by ________________, 20__.

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

2. You must deliver to the OWNER three (3) fully executed counterparts of the Contract Between Owner and Contractor (CO-9) including all the Contract Documents. This includes the sets of Plans and Specifications. Each of the Contract Documents must bear your signature on the Index page of the Plans and on the Specification Table of Contents page.

3. You must deliver with the executed Contract, the Contract Security (Standard Performance Bond CO-10 and Standard Labor and Material Payment Bond CO-10.1) as specified in the General Conditions, Section 8.

Failure to comply with these conditions within the time specified will entitle OWNER to consider your bid abandoned, to annul this Notice of Award and to declare your Bid Security forfeited.

After you comply with those conditions, and upon approval of the Contract Security by the Owner and the Attorney General, the OWNER will return to you one fully signed counterpart of the Contract with the Contract Documents.

__________________________
(Owner)

By ______________________________
(Authorized Signature)

_____________________________________
(Typed Name & Title)
NOTICE TO PROCEED

DATE:

TO:

Re: INSTITUTION/AGENCY: Virginia Community College System  
PROJECT TITLE: SWCC – New Electronic Entrance Sign  
PROJECT NO: 260-A1260-078

Gentlemen:

In accordance with the Contract Between Owner and Contractor (C0-9), you are notified that the Time for Completion under the above Agreement will commence to run on _____________, 2011. By that date, you are to start performing your obligations under the Contract Documents. In accordance with the Contract Between Owner and Contractor, the Work shall be substantially completed within _____ calendar days from and after the said date, which is _______________, 20____.

Before you may start any Work at the site, SECTION 11, CONTRACTOR'S AND SUBCONTRACTOR'S INSURANCE, of the GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT requires that you deliver to the Owner the Certificates of Insurance which the Contractor is required to purchase and maintain in accordance with the Contract Documents.

You are also reminded of the requirements of the General Conditions, SECTION 8 - CONTRACT SECURITY and SECTION 12 - "ALL RISK" BUILDER'S RISK INSURANCE.

(Owner)

By

(Authorized Signature)

(Typed Name & Title)

cc: A/E  
BCOM
COMMONWEALTH OF VIRGINIA
STANDARD PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: That ______, the Contractor ("Principal") whose principal place of business is located at ______ and ______ ("Surety") whose address for delivery of ‘Notices’ is located at ______ are held and firmly bound unto the Commonwealth of Virginia, ______, the Owner ("Obligee") in the amount of ______ Dollars ($ ______) for the payment whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS,
Principal has by written agreement dated ______ entered into a contract with Obligee for ______ which contract (the "Contract") is by reference expressly made a part hereof;

NOW THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if the Principal shall promptly and faithfully perform said Contract in strict conformity with the plans, specifications and conditions of the Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

Provided, that any alterations which may be made in the terms of the Contract, or in the Work to be done under it, or the giving by the Obligee of any extension of time for the performance of the Contract, or any other alterations, extensions or forbearance on the part of either or both of the Obligee or the Principal to the other shall not in any way release the Principal and the Surety, or either of them, their heirs, executors, administrators, successors or assigns from their liability hereunder, notice to the Surety of any such alterations, extension, or forbearance being hereby waived.

No action shall be brought on this bond unless brought within one year after: (a) completion of the Contract and all Work thereunder, including expiration of all warranties and guarantees, or (b) discovery of the defect or breach of warranty or guarantee if the action be for such.

The Surety represents to the Principal and to the Obligee that it is legally authorized to do business in the Commonwealth of Virginia.
Signed and sealed this _____ day of _____

_________________________________________  
Contractor / Principal (SEAL)

_________________________________________  
Witness
Typed Name: _____
Title: _____

_________________________________________  
Surety (SEAL)
By:_______________________________
Typed Name: _____

_________________________________________  
Attorney-in-Fact
Typed Name: _____

AFFIDAVIT AND ACKNOWLEDGEMENT OF ATTORNEY-IN-FACT

COMMONWEALTH OF VIRGINIA  
(or alternatively, Commonwealth or State of _____)

CITY of _____

I, the undersigned notary public, do certify that _____, whose name is signed to the foregoing performance bond in the sum of _____ and dated _____ and which names the Commonwealth of Virginia, _____, as Obligee, personally appeared before me today in the above jurisdiction and made oath that he/she is the attorney-in-fact of _____, a _____ corporation which is the Surety in the foregoing bond, that he/she is duly authorized to execute on the above Surety’s behalf the foregoing bond pursuant to the Power of Attorney noted above and attached hereto, and on behalf of the surety, he/she acknowledged the foregoing bond before me as the above Surety’s act and deed.

She/he has further certified that her/his Power of Attorney has not been revoked.

[Complete if Power is recorded: Clerk’s Office: _____;  
Deed Book/Page No. or Instrument No.: _____.]

Given under my hand this _____ day of _____.  
Notary Public (SEAL)

My name (printed) is: _____  
My registration number is: _____  
My commission expires: _____  

APPROVED:

_________________________________________  
Attorney General/Designee  Date
Terms and Conditions of the Performance Bond

1 The Contractor and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the prompt and faithful performance of the Construction Contract, which is incorporated herein by reference.

2 If the Contractor promptly and faithfully performs the Construction Contract in strict conformity with the plans, specifications and conditions of the Construction Contract, the Surety and the Contractor shall have no obligations under this Bond.

3 In the event of the Contractor's Default, and subsequent notification to the Surety pursuant to Section 41 of the General Conditions of the Construction Contract, the Surety shall, within fourteen (14) days of receipt of such notice, contact the Owner in writing, and arrange a meeting with the Owner to discuss methods of completing the Construction Contract. See paragraph 4, below, for the options to be discussed. If the Surety fails to arrange a meeting or fails to attend such meeting, the Surety shall be deemed to be in default on this Bond and the Owner may, at its sole discretion, take what measures it deems necessary to protect the Owner's interests, without further notice to the Surety, and the Owner shall be entitled to enforce any remedy available to the Owner under the Construction Contract or under Virginia law.

4 Within thirty (30) days after such meeting, during which time the Surety may investigate and otherwise analyze the project, and which period shall not toll any Construction Contract time periods nor operate as a waiver of any of the Owner's rights, the Surety shall, at its own expense, notify the Owner in writing that it is taking one of the following actions, which shall be acceptable to the Owner, at the Owner's sole discretion:

   4.1 By written takeover agreement with the Owner, the Surety itself shall undertake to perform and complete the Construction Contract, which it may do through its licensed agents or through licensed independent contractors. If the Owner, at its sole discretion, consents, the Contractor may serve as the Surety's independent contractor (however, due to conflicts with the Virginia Public Procurement Act, the Owner may not directly contract with an otherwise qualified independent contractor produced by the Surety); or

   4.2 The Surety may, if acceptable to the Owner and at the Owner's sole discretion, waive its right to perform and complete the Construction Contract, and with reasonable promptness under the circumstances:

         4.2.1 Pay to the Owner all amounts for which it may be liable to the Owner as surety on this Performance Bond, including the damages described in paragraph 6 below; or

         4.2.2 Deny liability, in whole or in part, and provide written notice thereof to the Owner, citing reasons therefor.
If, after the meeting described in paragraph 4, above, the Surety does not proceed with reasonable promptness with one of the options provided in subparagraphs 4.1 or 4.2 (including its subparts), above, the Owner may send additional written notice to the Surety demanding that the Surety perform its obligations under the Bond. If the Surety does not proceed to perform its obligations under the Bond within fifteen (15) days after receipt of said notice, the Surety shall be deemed to be in default on this Bond. Thereafter, the Owner shall be entitled to enforce any remedy available to the Owner under the Bond, the Construction Contract or Virginia law. If the Surety proceeds as provided in Subparagraph 4.2, and the Surety and the Owner are unable to agree as to the amount for which the Surety may be liable to the Owner, or if the Surety has denied liability, in whole or in part, the Owner, without further notice, shall be entitled to enforce any remedy available to the Owner under the Bond, the Construction Contract or Virginia law. In such event, the Owner may immediately proceed to complete the work in any manner authorized by law.

6 After the Owner has terminated the Contractor’s right to complete the Construction Contract, and if the Surety elects to act under Subparagraph 4.1 or 4.2.1, above, then the responsibilities of the Surety to the Owner shall not be greater or less than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than or less than those of the Owner under the Construction Contract. To the limit of the amount of this Bond, plus the increased cost of any change orders under the Construction Contract, provided the Owner commits the balance of the Construction Contract Price to the prompt and faithful completion of the Construction Contract, the Surety is obligated without duplication for:

6.1 The responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

6.2 Additional legal, design professional and delay costs resulting from the Contractor’s Default, and resulting from the actions or failure to act of the Surety under Paragraph 4; and

6.3 Liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

The Owner, at its sole discretion, may waive its claim to delay costs and/or liquidated damages.

7 The Surety shall not be liable to the Owner for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner, its officers, agencies, administrators, successors or assigns.

8 The Surety hereby waives notice of any changes, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations. The Surety understands and agrees that the penal amount of the bond shall be increased or decreased by any changes to time and amount incorporated into any Change Orders.
Any proceeding by the Owner, legal or equitable, under this Bond may be instituted in any Virginia state court of competent jurisdiction, as permitted under Section 8 of the General Conditions of the Construction Contract and Virginia Code § 2.2-4337 and 2.2-4340, or by the Contractor or Surety, as permitted under the Construction Contract or under Virginia law.

Notice to the Surety shall be mailed or delivered to the address shown on the Standard Performance Bond in the space for Surety address for delivery of Notices.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond when furnished to comply with statutory requirements.

**DEFINITIONS**

12.1 **Balance of the Construction Contract Price**: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

12.2 **Construction Contract**: The agreement between the Owner and the Contractor identified on first page of the Standard Performance Bond, DGS-30-084, CO-10, including all Construction Contract Documents and duly executed modifications and change orders thereto.

12.3 **Contractor Default**: Failure of the Contractor, as defined under Section 41 of the General Conditions to the Construction Contract, which has neither been remedied, as permitted under Section 41 at the Owner's sole discretion, nor expressly waived by the Owner, to perform or otherwise to comply with the terms of the Construction Contract.

Nothing in these General Conditions shall prevent a surety from becoming involved in the Construction Contract prior to termination, upon notice from the Owner of the Contractor's failure to promptly and faithfully perform the Construction Contract in strict conformity with the plans, specifications and conditions of the Construction Contract.
COMMONWEALTH OF VIRGINIA
STANDARD LABOR AND MATERIAL PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: That _____, the Contractor ("Principal") whose principal place of business is located _____ and _____ ("Surety") whose address for delivery of ‘Notices’ is located at _____ are held and firmly bound unto the Commonwealth of Virginia, _____, the Owner ("Obligee") in the amount of _____ Dollars ($____) for the payment whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS,

Principal has by written agreement dated _____ entered into a contract with Obligee for _____ which contract (the "Contract") is by reference expressly made a part hereof;

NOW THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if the Principal shall promptly make payment to all claimants as hereinafter defined, for labor performed and material furnished in the prosecution of the Work provided for in the Contract, then this obligation shall be void; otherwise it shall remain in full force and effect, subject, however, to the following conditions.

The Principal and Surety, jointly and severally, hereby agree with Obligee as follows:

1. A claimant is defined as one having a direct contract with the Principal or with a subcontractor of the Principal for labor, material, or both for use in the performance of the Contract. A "subcontractor" of the Principal, for the purposes of this bond only, includes not only those subcontractors having a direct contractual relationship with the Principal, but also any other contractor who undertakes to participate in the Work which the Principal is to perform under the aforesaid Contract, whether there are one or more intervening subcontractors contractually positioned between it and the Principal (for example, a subcontractor). "Labor" and "material" shall include, but not be limited to, public utility services and reasonable rentals of equipment, but only for periods when the equipment rented is actually used at the work site.

2. Subject to the provisions of paragraph 3, any claimant who has performed labor or furnished material in accordance with the Contract documents in the prosecution of the Work provided in the Contract, who has not been paid in full therefor before the expiration of ninety (90) days after the day on which such claimant performed the last of such labor or furnished the last of such materials for which he claims payment, may bring an action on this bond to recover any amount due him for such labor or material, and may prosecute such action to final judgment and have execution on the judgment. The Obligee need not be a party to such action and shall not be liable for the payment of any costs, fees or expenses of any such suit.

3. Any claimant who has a direct contractual relationship with any subcontractor of the Principal from whom the Principal has not required a subcontractor payment bond, but who has no contractual relationship, express or implied, with the Principal, may bring an action on this bond only if he has given written notice to the Principal within one hundred eighty (180) days from the day on which the claimant performed the last of the labor or furnished the last of the materials for which he claims payment, stating with substantial accuracy the amount claimed and the name of the person for whom the Work was performed or to whom the material was furnished. Notice to the Principal shall be served by registered or certified mail, postage prepaid, in an envelope addressed to the Principal at any place where his office is regularly maintained for
the transaction of business. Claims for sums withheld as retainages with respect to labor performed or materials furnished shall not be subject to the time limitations stated in this paragraph 3.

4. No suit or action shall be commenced hereunder by any claimant.

a. Unless brought within one year after the day on which the person bringing such action last performed labor or last furnished or supplied materials, it being understood, however, that if any limitation embodied in this bond is prohibited by any law controlling the construction hereof, the limitation embodied within this bond shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.

b. Other than in a Virginia court of competent jurisdiction, with venue as provided by statute, or in the United States District Court for the district in which the project, or any part thereof is situated.

5. The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder.
Signed and sealed this ____ day of ____

______________________
Contractor / Principal

______________________
Witness

______________________
Surety

______________________
Attorney-in-Fact

AFFIDAVIT AND ACKNOWLEDGEMENT OF ATTORNEY-IN-FACT

COMMONWEALTH OF VIRGINIA
(or alternatively, Commonwealth or State of ____)

CITY of ____

I, the undersigned notary public, do certify that ____, whose name is signed to the foregoing labor and material payment bond in the sum of ____ and dated ____ and which names the Commonwealth of Virginia, ____., as Obligee, personally appeared before me today in the above jurisdiction and made oath that he/she is the attorney-in-fact of ____, a _____ corporation which is the Surety in the foregoing bond, that he/she is duly authorized to execute on the above Surety’s behalf the foregoing bond pursuant to the Power of Attorney noted above and attached hereto, and on behalf of the surety, he/she acknowledged the foregoing bond before me as the above Surety’s act and deed

She/he has further certified that her/his Power of Attorney has not been revoked.

[Complete if Power is recorded: Clerk’s Office: ____;
Deed Book/Page No. or Instrument No.: ____.]

Given under my hand this ____ day of ____.

______________________
Notary Public

My name (printed) is: ____
My registration number is: ____
My commission expires: ____

APPROVED:

______________________
Attorney General/Designee

Date
INSTRUCTIONS FOR COMPLETING
THE CO-11 and CO-11a FORMS

I. GENERAL INSTRUCTIONS

Please read all instructions carefully before using this spreadsheet to create the CO-11 and CO-11a forms.

Macros must be "enabled" to use this template.

   In order for macros to run in Excel, the Excel macro security setting must be set to "Medium". To adjust this setting, go to Tools / Macro / Security on the Excel menubar and adjust security setting to "Medium". You may need to exit Excel once and then re-open Excel for the new security setting to take effect.

   Excel/Office 2007 users may need to save this as a "Macro-Enabled Worksheet".

This spreadsheet contains a number of built-in calculations to simplify the creation of CO-11 and CO-11a forms. To ensure the integrity of the data, please do not attempt to modify the spreadsheet. Areas where data can be entered are highlighted in yellow.

It is recommended that the user print a copy of this instruction sheet to use as a reference when completing these forms.

The various Parts of the CO-11 and CO-11a are accessed by clicking on the blue tabs at the bottom of the screen.

Use the tab key to move forward to the next fillable field. |----->

Use the shift-tab to move backwards to the previous fillable field. <-----|

(You can also use the mouse and cursor keys to navigate, but the tab key is generally the most efficient means.)

Some fields have "drop-down" selection arrows on the right side of the field. For these types of fields, click on the arrow, then select an appropriate choice from the list.

Click on the tabs at the bottom of this file to go to the appropriate page.

THE CHANGE ORDER LOG ( "CO Log" tab )

The most important part of this spreadsheet is the "Contract Summary and Change Order Log".

The "Contract Summary" contains general project information, a running tally of all approved change orders, and the original and current contract costs and completion dates.
The “Change Order Log” lists the key cost and schedule data for each change order and also identifies if approval by the Governor's Designee is required.

The information entered in the Contract Summary and Change Order Log is used to automatically complete portions of the CO-11 and CO-11a forms for the Change Order number entered on the “CO-11 Part 1” sheet. Specifically, the general information from the Contract Summary and Change Order Log is used to automatically complete:

- CO-11, Part 1 (Fully completes Part 1.)
- CO-11, Part 2 (Completes the header information. Remaining portions must be completed by user.)
- CO-11a, All Parts (Completes the header information. Remaining portions must be completed by user.)

This built-in automation was designed to save users from redundant keying of data and to eliminate math and transposition errors.

When entering data in the Change Order Log, always enter the change orders sequentially, starting with the lowest number change order. (Do not leave a blank line between change orders or erroneous totals may result!)

Always update the Contract Summary and Change Order Log first, before completing and generating the CO-11 and CO-11a.

**IF YOU WISH TO RETAIN DETAILED INFORMATION FOR EACH CHANGE ORDER, DO THE FOLLOWING:**

Before beginning each new CO-11, make a copy of the spreadsheet. (Do a "Save as" and name the new version of the spreadsheet: "Change Order Number XX", substituting for "XX" the number of the next Change Order to be created.) While the Change Order Log will list summary information for all Change Orders to date, only the detailed information (i.e., the CO-11 and CO-11a) for one change order number is saved in the spreadsheet. (The spreadsheet is not meant to be a repository of all CO-11 and CO-11a forms. It is intended to be used to create, save, and print information for the latest CO-11 and CO-11a.)

**II. STEP-BY-STEP INSTRUCTIONS**

**Change Order Log**

1. Save a copy of the previous Change Order spreadsheet file and name it as noted in the preceding paragraph.

2. Click on the "Contract Summary and Change Order Log" tab.

3. In the "Contract Summary" section, enter new (or verify existing) data for the cells highlighted in yellow.

4. In the "Change Order Log" section, enter the following information:

   **Change Order Number**
   - Change Order Numbers are sequential integer numbers. Start with "1".
   - Enter change orders sequentially in the log - starting with the lowest number change order.
     (See the note below for projects already in progress.)
   - Don't skip rows between change orders (i.e., don't leave any blank rows between change order entries) or else erroneous results will occur.
- **Change Order Date**  (enter in mm/dd/yy format)
- **Change Order Amount**  (enter the total value of latest Change Order)
- **Schedule Extension**  (enter the additional number of days the contract will be extended due to latest Change Order)

( All other information shown on the log is computed automatically and is used elsewhere in the spreadsheet. )

**NOTE:**  If this spreadsheet is being implemented for a project already in progress, there are two options for entering Change Orders which were issued prior to this new spreadsheet becoming available:

a) Enter all Change Orders as individual line items in the Log (recommended method), or

b) Group all Change Orders already executed under one line entry. After this one "catch up entry", enter all subsequent Change Orders as individual line items.

5  Print a copy of the Log, if desired, using the File/Print menu command. ( To limit the number of pages printed, enter the appropriate page numbers in the "Pages" section of the "Print Range" dialog box. )

**CO-11 Part 1. Construction Change Order (Summary of Work)**

Part 1 of the CO-11 lists the summary cost and contract completion information related to the current change, the cumulative cost and completion data, and provides signature lines for all affected parties.

1  Enter the specific Change Order Number for which you wish to create a CO-11 and CO-11a. No other input is required as all other information for this sheet is derived from the Contract Summary and Change Order Log.

   (NOTE:  The Contract Summary and Change Order Log must be complete for all Change Orders up to and including this Change Order.)

2  Print a copy of the CO-11 Part 1 using the File/Print menu command or the printer icon. (You can also use the Print or Print Preview buttons on the toolbar below.)

**CO-11 Part 2. Construction Change Order (Itemization of Work)**

Part 2 of the CO-11 provides an itemized breakdown of the scope of work to be performed.

1  Enter the required data for the each of the five columns highlighted in yellow. Additional data entry instructions are provided as each cell is selected.

2  Once all detail line items have been entered, verify that the sum of all detail line items match the total amount entered earlier in the Change Order Log for this Change Order. If the amount in the Change Order Log and the sum of the Part 2 detail entries do not match, an error message will appear in red at the top of the Part 2 sheet. Correct either the detail amounts in Part 2
or the total amount entered in the Change Order Log, as needed. Once the amounts match, the error message will clear.

3 An asterisk ( *) appearing adjacent to the amount field on Part 2, denotes that either the "Initiated By" or the "Reason for Change" fields, or both, were not completed properly. (An entry must appear in both of these fields, if an associated dollar amount was entered.) Fill in these fields with the appropriate entries to clear these error flags.

4 Once the errors described in 2 and 3 above have been corrected, print a copy of this sheet using the File/Print menu command. To limit the number of pages printed, enter the appropriate page numbers in the "Pages" section of the "Print Range" dialog box.

**CO-11a Part 1, Change Order Justification (A/E's Justification)**

Part 1 of the CO-11a is completed by the A/E to:
- provide a brief narrative summary of work to be performed
- explain why the change is required
- identify the A/E's recommendation to the Agency

1 Describe the work.

2 Describe why change is required.

3 Use the drop-down arrow to select either "Recommend Approval" or "Recommend Disapproval".

4 Print out the CO-11a Part 1 and obtain signature of the authorized A/E representative.

**CO-11a Part 2, Change Order Justification (Agency's Justification)**

Part 2 of the CO-11a is completed by the Agency to:
- verify that adequate contingency is available
- identify cost sharing arrangements for design errors or omissions
- justify Change Orders which are a result of a change in agency requirements

1 Enter the latest APPROVED CO-8 Contingency amount.

If sufficient contingency is available to accommodate this Change Order, the balance remaining after approval of this Change Order will be displayed.

If the contingency balance is insufficient, the minimum amount of additional contingency required to accommodate this Change Order will be displayed. Submit a revised CO-8 concurrent with the Change Order to increase the construction change order contingency amount.

2 Complete the two items of information needed for Change Orders which involve "design errors and omissions".
3 Complete the four items of information needed for Change Orders which involve "changes in agency requirements".

4 Print out the CO-11a Part 1 and obtain signature of the authorized Agency representative.

**CO-11a Part 3, Change Order Justification (Agency's Justification)**

Part 3 of the CO-11a is a statistical summary compiled automatically from the entries on Part 2 of the CO-11.

1 Verify that the total on this sheet matches the total Change Order amount. If the total on this sheet is incorrect, return to Part 2 of the CO-11 sheet and ensure that all lines with an “Amount” have a corresponding "Reason Code".

2 Once correct, print out a copy of this sheet.

**III. SUBMITTAL REQUIREMENTS**

**If approval by DGS is required:**

Submit a “hard copy” of the Log, the CO-11 (Parts 1 and 2) and the CO-11a (Parts 1, 2, and 3) to BCOM immediately after all other applicable signatures have been obtained.

Include copies of additional supporting backup (e.g., GC-1, SC-1, and SS-1 forms, if used, drawings(sketches, and other additional backup). This is necessary to provide the Director of the Department of General Services, functioning as the Governor's Designee, sufficient data to understand, evaluate, and approve the proposed Change Order.

**If approval by DGS is not required:**

Submit a "hard copy", or image file (preferably in pdf format), of the Log, the CO-11 (Parts 1 and 2) and the CO-11a (Parts 1, 2, and 3) to BCOM immediately after the authorized agency representative approves the Change Order.

If forms are in "pdf" or other acceptable image format, they may be e-mailed to >>>>> coforms@dgs.virginia.gov
### CONTRACT SUMMARY:

<table>
<thead>
<tr>
<th>Code Number</th>
<th>Description</th>
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</table>

Agency: 000
Project: 00000
Sub-Project: 000
Location of the Work: 
Contractor Name: 
Architect/Engineer: 
Agency has delegated authority? NO
Date Contract Ratified: 
Original Contract Completion Date: 
Cumulative Schedule Extensions: 0 days
Revised Contract Completion Date: 01/00/00

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<tr>
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<th>Additive Changes</th>
<th>Deductive Changes</th>
<th>Total Changes</th>
<th>Revised Contract</th>
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Updated thru Change Order Number: 0

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<th>Change Order Amount</th>
<th>Schedule Extension (days)</th>
<th>Governor's Designee's Approval Required?</th>
<th>Cumulative Change Orders</th>
<th>Revised Contract Value</th>
<th>Cumul. Schedule Extension (days)</th>
<th>Revised Contract Completion Date</th>
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### CHANGE ORDER LOG:

Updated thru Change Order Number: 0

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<th>Change Order Amount</th>
<th>Schedule Extension (days)</th>
<th>Governor's Designee's Approval Required?</th>
<th>Cumulative Change Orders</th>
<th>Revised Contract Value</th>
<th>Cumul. Schedule Extension (days)</th>
<th>Revised Contract Completion Date</th>
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To:  

Gentlemen:

Under your contract dated January 0, 1900 for work at  

the Contract Price, in accordance with the Contract Documents, the sum of  

	#VALUE!  

#VALUE!  

( Failure to include a change for time shall waive any change to the time allowed by the Contract for completion of the Work unless the parties mutually agree in writing to postpone a determination of the change to time resulting from the Change Order. Such determination may not be postponed more than 45 days from the approval of this Change Order by the agency.)

---

**CONTRACT COST SUMMARY**

( Inclusive of this Change Order)

<table>
<thead>
<tr>
<th>Project Code</th>
<th>Change Order Number</th>
<th>Change Order Date</th>
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<tbody>
<tr>
<td>000 - 00000 - 000</td>
<td>#N/A</td>
<td>#N/A</td>
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</table>

**CONTRACT SCHEDULE SUMMARY**

( Inclusive of this Change Order)

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<th>Original Contract Amount</th>
<th>$0.00</th>
<th>Original Contract Completion Date:</th>
<th>January 0, 1900</th>
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<tbody>
<tr>
<td>Cumulative Change Orders</td>
<td>#N/A</td>
<td>Cumulative Schedule Extension:</td>
<td>#N/A</td>
</tr>
<tr>
<td>Revised Contract Amount</td>
<td>#N/A</td>
<td>Revised Contract Completion Date:</td>
<td>#N/A</td>
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</tbody>
</table>

**CHANGE AUTHORIZATION**

Issued By: 

Authorized A/E Representative  

Date

Accepted By:  

Authorized Contractor Representative  

Date

Approved / Recommended By:  

Authorized Agency Representative  

Date

Prior approval by the Governor or his designee is required for each Change Order which causes an increase in the Contract Price if the resulting cumulative sum of all Change Orders exceeds 25% of the original Contract Amount or $50,000, whichever is greater.

#N/A

Recommended By:  

Director, Division of Engineering and Buildings  

Date

Approved By:  

Director, Department of General Services  

Date
<table>
<thead>
<tr>
<th>Reference Number</th>
<th>Description</th>
<th>Initiated By</th>
<th>Reason Code</th>
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- If an asterisk appears adjacent to an "Amount" entry, this indicates the "Initiated By" or "Reason for Change" field(s) have not been filled-in properly. Please enter the appropriate values in both of these fields.
<table>
<thead>
<tr>
<th>Project Code</th>
<th>Change Order Number</th>
<th>Change Order Date</th>
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</thead>
<tbody>
<tr>
<td>000 - 00000 - 000</td>
<td>0</td>
<td>#N/A</td>
</tr>
</tbody>
</table>

**A/E's DESCRIPTION OF WORK INVOLVED**

**A/E's EXPLANATION OF WHY WORK IS REQUIRED**

**A/E's RECOMMENDATION**

Architect / Engineer ___________________________ Date ___________________________
ADDITIONAL CONTINGENCY REQUIRED?

Construction Contingency Amount Shown on Last Approved CO-8: #N/A
Cumulative Amount Of All Change Orders To-Date, Inclusive Of This Change Order: #N/A
Remarks:

COST SHARING FOR DESIGN ERRORS AND OMISSIONS

Is this change order required in whole, or in part, because of a design error or omission? 
If “Yes”, outline the proposed cost sharing, if any, by the responsible design professional:

ADDITIONAL SUPPORT FOR CHANGES IN AGENCY REQUIREMENTS

1) When was the change in requirements (function, mission) known?

2) If known before construction bidding, why were the needed changes excluded from the bid package?

3) What quantitative impact would the lack of this change have on the mission or service provided by the agency?

4) Why can the work not be packaged and bid separately?

By: 
Agency Representative ____________________________ Date ____________________
**CHANGE ORDER JUSTIFICATION**  
(Statistical Summary)  

<table>
<thead>
<tr>
<th>Reason Code</th>
<th>Amount</th>
<th>Reason Code Description</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>$</td>
<td>1 - Unforeseen site conditions</td>
</tr>
<tr>
<td>2</td>
<td>$</td>
<td>2 - Existing building or utility conditions not as shown</td>
</tr>
<tr>
<td>3</td>
<td>$</td>
<td>3 - Change in agency's requirements</td>
</tr>
<tr>
<td>4</td>
<td>$</td>
<td>4 - Substitution or alternate method</td>
</tr>
<tr>
<td>5</td>
<td>$</td>
<td>5 - Item not as shown or specified</td>
</tr>
<tr>
<td>6</td>
<td>$</td>
<td>6 - Conflict or discrepancy in requirements</td>
</tr>
<tr>
<td>7</td>
<td>$</td>
<td>7 - Other.</td>
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</tbody>
</table>

**Total** $ -
### GENERAL CONTRACTOR DIRECT COSTS

<table>
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<tr>
<th>Item No.</th>
<th>Description</th>
<th>Quantity</th>
<th>Direct Labor Hours</th>
<th>Total Direct Labor Hours</th>
<th>Hourly Wage Rate, Excl. Taxes &amp; Ins.</th>
<th>Total Labor Cost</th>
<th>Material Cost Per Unit</th>
<th>Total Material Cost</th>
<th>Equipment Cost Per Unit</th>
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1.09 Subtotal from Estimate Continuation Sheets $0.00 $0.00 $0.00 $0.00

1.97 Subtotal (S/T) Direct Costs: $0.00 $0.00 $0.00 $0.00

1.98 Taxes/Insurance: FICA, FUI, SUI, & Workmens' Comp. at 17.00% % of Item 1.97H $0.00 $0.00 $0.00 $0.00

1.99 Total Direct Costs $0.00 $0.00 $0.00 $0.00

### SUBCONTRACT COSTS

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### Submitted By

- Name: ___________________________
- Signature: _______________________
- Title: ___________________________
- Date: ___________________________

I have reviewed the costs proposed and find them to be reasonable (as proposed) (as marked).

A/E Signature: _______________________

DGS-30-200
GC-1
(Rev. 09/04)
**PART A PERIOD BEGINNING DATE:** 01/00/1900

**SUMMARY AND CERTIFICATION PERIOD ENDING DATE:** 01/00/1900

**PROJECT CODE:** 0

**AGENCY NAME:** 0

**PROJECT TITLE:** 0

### VALUE OF WORK COMPLETED

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### CONTRACTOR CERTIFICATION

The undersigned Contractor requests payment of that portion of the contract price shown on the last line of the foregoing Schedule of Values, and represents and warrants to the Owner that: (1) the data shown on the Schedule of Values is accurate and correct; (2) the Work covered by this Certificate has been completed in accordance with the Contract Documents; (3) all previous progress payments received from Owner on account of Work done under this Contract have been applied to discharge in full (except for allowable retainage) all obligations of Contractor incurred in connection with Work covered by prior Certificates for Payment (not applicable for Pay Request 1): (4) title to all materials and equipment for which payment is requested in this Certificate, whether or not incorporated in said Work, will pass to Owner at time of payment free and clear of all liens, claims, security interests and encumbrances (except such materials and equipment which are covered by a Bond previously accepted by Owner).

**FEIN #:*** enter FEIN in Step 2

**Contractor:*** enter Contractor name in Step 2

**By:**

**Typed Name:** *** enter Contractor Representative’s Name in Step 3

### ARCHITECT/ENGINEER CERTIFICATION

This is to certify that, in accordance with the terms of a contract for Project Number executed the day of, by and between, , the contractor, and the Commonwealth of Virginia, , the Owner, for work at, there is due to the Contractor the amount of No Dollars and No Cents $0.00

**Architect/Engineer:**

**By:**

**signature**

**printed name**

**date**

### AGENCY ACTION

Amount approved for payment this certificate is:

Dollars (___________)

**By:**

**signature**

**title**

**date**

**By:**

**signature**

**title**

**date**
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**PROJECT CODE:** 0.00

**AGENCY NAME:** 0

**PROJECT TITLE:** 0

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COMMONWEALTH OF VIRGINIA
AFFIDAVIT OF PAYMENT OF CLAIMS

By:

This day ________________________________ personally appeared before me, ________________________________, a Notary Public in and for the City (County) of ________________________________, and, being by me first duly sworn, states that all subcontractors and suppliers of labor and materials have been paid all sums due them for work performed or materials furnished in the performance of the Contract between the Commonwealth of Virginia, ________________________________, Owner, and ________________________________, Contractor, dated ________________________________, 20____, for the construction of ________________________________, or arrangements have been made by the Contractor satisfactory to such subcontractors and suppliers with respect to payments of such sums as may be due them by the Contractor.

Typed Contractor Name

By:
Signature

Typed Name & Title of Person Signing

Subscribed and sworn to before me this ______ day of ________________, 20____. My commission expires on the ______ day of ________________, 20____.

Notary Public
CERTIFICATE OF COMPLETION BY ARCHITECT/ENGINEER
or PROJECT MANAGER

TO: Bureau of Capital Outlay Management
   1100 Bank Street, 6th Floor
   Richmond, Virginia 23219

PROJECT TITLE: 
PROJECT NO: 
INSTITUTION/AGENCY: 
ADDRESS: 

In accordance with the requirements of the Contract Between Owner and Architect / Engineer for Professional Services (Form CO-3) or the Contract Between Owner and Project Manager and based upon the knowledge gained in the performance of the services required in said Agreement, the undersigned hereby states that the above named project was fully completed in accordance with the requirements of the Contract Documents on _________________.

(date)

All applicable tests, certificates and regulatory inspections required by the ________ edition of the Virginia Uniform Statewide Building Code, which was the basis of the design of the project, have been performed and the Owner has been provided with a copy of each report. A copy of the Final Report of Structural & Special Inspections (Form CO-13.1b) is attached to this certificate. All deficiencies noted during the inspection have been corrected or resolved.

The handicapped standards required by Chapter 7 of the applicable A/E Manual, as revised, have been met.

The Owner has been provided with a copy of all warranties and guarantees, including the starting date(s) of all warranties and guarantees, written and unwritten, required by the Contract Documents.

(Typed Firm Name)

By:

(Typed Name & Title)

Attachments:
Final Report of Structural & Special Inspections (Form CO-13.1b)
ARCHITECT/ENGINEER'S
CERTIFICATE OF SUBSTANTIAL COMPLETION

Date:

TO: Bureau of Capital Outlay Management
1100 Bank Street, 6th Floor
Richmond, Virginia 23219

PROJECT TITLE: PROJECT NO: INSTITUTION/AGENCY: ADDRESS:

In accordance with the requirements of the Agreement between the Owner and the Architect / Engineer and based upon the knowledge gained in the performance of the architectural / engineering services provided in said Agreement and the reports of the Owner's Inspection and Testing entities, the undersigned Architect / Engineer states that the following portions of the project named above are substantially complete in accordance with the requirements of the Contract Documents and are recommended for occupancy: (Indicate portions which are recommended for occupancy)

All applicable tests, certificates and regulatory inspections required by the ______ edition of the Virginia Uniform Statewide Building Code, which was the basis of the design of the project, have been performed with respect to the substantially completed portions of the project and the Owner has been provided with a copy of each report, except for the following: ____________________________________________________________

The handicapped standards required by Chapter 7 of the applicable A/E Manual, as revised, have been met. A copy of the Final Report of Structural & Special Inspections, Form CO-13.1b, is attached to this certificate.

A tentative list of unfinished Work and defective Work, referred to as the "punch list", is attached hereto. This list may not be all-inclusive, and the failure to include an item in it does not alter the responsibility of CONTRACTOR to complete all the Work in accordance with the Contract Documents. The items in the tentative list shall be completed or corrected by CONTRACTOR within ________ days of the above date of Substantial Completion.

(Typed Name of Architect / Engineer)

By:

(Signature in ink)

(Typed Name &Title)

The following documents are attached to and made a part of this Certificate:
- Final Report of Structural & Special Inspections (Form CO-13.1b)
- Checklist for Beneficial Occupancy (Form CO-13.3b)
- Punch list containing page 1 through _______
CERTIFICATE OF COMPLETION BY CONTRACTOR

Date:

TO: Bureau of Capital Outlay Management
1100 Bank Street, 6th Floor
Richmond, Virginia 23219

PROJECT TITLE: 
PROJECT NO: 
INSTITUTION/AGENCY: 
ADDRESS:

In accordance with the requirements of the Contract Between Owner and Contractor (Form CO-9), the undersigned Contractor hereby states that the above named project has been fully completed in accordance with the requirements of the Contract Documents as modified by approved change orders.

All applicable tests, certificates and regulatory inspections required by the Virginia Uniform Statewide Building Code and the Contract Documents have been performed with respect to the completed project and the Owner has been provided with a copy of each report.

As-built marked up prints of the completed project have been provided to the Architect/Engineer as required by the Contract Documents.

The Owner has been provided with a copy of all warranties and guarantees, including the starting date(s) of all warranties and guarantees, written and unwritten, required by the Contract Documents.

All training, operating instructions and maintenance manuals required by the Contract Documents have been provided to the Owner.

(Typed Contractor Name)

By:

(Typed Name & Title of Person Signing)

cc: Agency
A/E
CERTIFICATE OF PARTIAL OR SUBSTANTIAL COMPLETION BY CONTRACTOR

Date:

TO: Bureau of Capital Outlay Management
   1100 Bank Street, 6th Floor
   Richmond, Virginia 23219

PROJECT TITLE: 
PROJECT NO:
INSTITUTION/AGENCY:
ADDRESS:

In accordance with the requirements of the Agreement between the Owner and the Contractor, the undersigned Contractor hereby states that portions of the above named project are substantially completed in accordance with the requirements of the Contract Documents as modified by approved change orders. Those portions of the project now substantially complete are:  (list or describe)

All applicable tests, certificates and regulatory inspections required by the Virginia Uniform Statewide Building Code and the Contract Documents have been performed with respect to the substantially completed portions of the project and the Owner has been provided with a copy of each report.

As-built marked up prints of the substantially completed portions of the project have been provided to the Architect/Engineer as required by the Contract Documents.

The Owner has been provided with a copy of all warranties and guarantees, including the starting date(s) of all warranties and guarantees, written and unwritten, required by the Contract Documents with respect to the completed portions of the project, except as follows:

All training, operating instructions and maintenance manuals required by the Contract Documents have been provided to the Owner, except as follows:  (list or describe)

This certificate does not constitute an acceptance of Work not in accordance with the Contract Documents nor is it a release of CONTRACTOR's obligation to complete the Work in accordance with the Contract Documents.

Typed Contractor Name

By:

Typed Name & Title
EXHIBITS
**LIST OF DRAWINGS**

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<td>ELECTRICAL SITE PLAN</td>
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END OF LIST OF DRAWINGS
PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 PROJECT DESCRIPTION

A. The project consists of furnishing and installing elevated LED display signs, backlit sign cabinets with the words “Southwest Virginia Community College”, masonry support walls and columns, associated site work, and connection to the existing electrical service.

B. Contract Documents, dated October 19, 2011 were prepared for the Project by The LANE Group, Inc., 146 West Main Street, Suite B; Wytheville, Virginia 24382 (Telephone: 276-223-1216).

C. The Work will be constructed under a single prime contract.

1.3 OTHER CONTRACTS

A. In accordance with the General Conditions, the Owner has the right to issue other contracts for work on this site or within the existing building. The Contractor shall cooperate, and coordinate his work with the work of these separate contractors as instructed by the Owner.

1.4 CONTRACTOR USE OF PREMISES

A. Use of Site: Limit use of premises to work in areas indicated. Do not disturb portions of the site beyond the areas in which the Work is indicated.

B. Roads, Driveways, and Entrances: Keep roads and entrances serving the premises clear and available to the Owner, Owner’s employees, emergency vehicles, and the public at all times. Do not use these areas for parking or storage of materials.

1. Schedule deliveries to minimize use of roads and entrances.

2. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

C. Use of Existing Site (limited to area of construction): Maintain existing site condition throughout construction period. Repair damage caused by construction operations. Protect building and its occupants during construction period.
1.5 OCCUPANCY REQUIREMENTS

A. Full Owner Occupancy: Owner will occupy site during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with the Owner’s operations.

PART 2 - PRODUCTS (Not applicable).

PART 3 - EXECUTION (Not Applicable).

END OF SECTION 01010
SECTION 01300 - SUBMITTALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS - The General Provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 NUMBER OF SUBMITTALS - One (1) for Owner, one (1) for Architect, one (1) for O&M Manual, and additional sets for Contractor, minimum four (4) sets total. Submittals of less than four (4) sets will be returned without review. (If submittals are electrical submit a minimum of five (5) sets.) The Architect will not review submittals that do not bear the Contractor’s approval stamp and will return them without action.

PART 2 - DESCRIPTION OF REQUIREMENTS

2.1 SUBMITTALS - Submittals controlled by these general requirements shall include shop drawings, product data, samples and miscellaneous work-related submittals. The individual submittal requirements are specified in applicable sections for each unit of work.

2.2 DEFINITIONS - The work-related submittals of this Section, in addition to the definitions of the General Conditions and elsewhere in the Contract Documents, are further categorized for convenience as follows:

A. Shop drawings include specially-prepared technical data of all forms including drawings, diagrams, performance curves, data sheets, schedules, templates, patterns, reports, calculations, instructions, measurements and similar information not in standard printed form for application to more than one project.

B. Product data include standard printed information on materials, products and systems; not specially-prepared for this project, other than the designation of selections from among available choices printed therein.

C. Samples include both fabricated and unfabricated physical examples of materials, products and units of work; both as complete units and as smaller portions of units of work; either for limited visual inspection or (where indicated) for more detailed testing and analysis.

D. Mock-ups are a special form of samples, which are too large or otherwise inconvenient for handling in the specified manner for transmittal of sample submittals.

E. Miscellaneous submittals related directly to the work include warranties, maintenance agreements, workmanship bonds, survey data and reports, physical work records, statements of applicability, quality testing and certifying reports, copies of industry standards, record drawings, field measurement data, operating and maintenance materials, overrun stock,
security/protection/safety keys and similar information, devices and materials applicable to
the work and not processed as shop drawings, product data or samples.

PART 3 - GENERAL SUBMITTAL REQUIREMENTS

3.1 SCHEDULING - Where appropriate in various required administrative submittals (listings of
products, manufacturers, suppliers and subcontractors, and in job progress schedule), show principal
work-related submittal requirements and time schedules for coordination and integration of submittal
activity with related work in each instance.

3.2 COORDINATION AND SEQUENCING - Coordinate preparation and processing of submittals with
performance of the work so that work will not be delayed by submittals. Coordinate and sequence
different categories of submittals for the same work, and for interfacing units of work, so that one
will not be delayed for coordination with another. No extension of time will be allowed because of
failure to properly coordinate and sequence submittals.

3.3 PREPARATION OF SUBMITTALS - Provide permanent marking on each submittal to identify
project, date, Contractor, subcontractor, submittal name and similar information to distinguish it from
other submittals. Show Contractor's executed review and approval marking and provide space for
Architect's/Engineer's "Action" marking. Package each submittal appropriately for transmittal and
handling. Submittals which are received from sources other than through Contractor's office will be
returned "without action".

PART 4 - SPECIFIC CATEGORY SUBMITTAL REQUIREMENTS

4.1 GENERAL - Except as otherwise indicated in individual work sections, comply with general
requirements specified herein for each indicated category of submittal. Provide and process
intermediate submittals (where required between initial and final) similar to initial submittals.

4.2 SHOP DRAWINGS - Provide newly-prepared information, with graphic information at accurate
scale (except as otherwise indicated), with name of preparer indicated (firm name). Show dimensions
and note which are based on field measurement. Identify materials and products in the work shown.
Indicate measurement. Indicate compliance with standards, and special coordination requirements.
Do not allow shop drawing copies without appropriate final "Action" markings by Architect/Engineer
to be used in connection with the work.

4.3 PRODUCT DATA - Collect required data into one submittal for each unit of work or system; and
mark each copy to show which choices and options are applicable to project. Include manufacturer's
standard printed recommendations for application and use, compliance with standards, application of
labels and seals, notation of field measurements which have been checked, and special coordination
requirements. Maintain one set of product data (for each submittal) at project site, available for
reference by Architect/Engineer or others. Submittals shall be the same as for Shop Drawings.
4.4 SAMPLES - Provide units identical with final condition of proposed materials or products for the work. Include "range" samples (not less than three (3) units) where unavoidable variations must be expected, and describe or identify variations between units of each set. Provide full set of optional samples where Architect's/Engineer's selection is required. Prepare samples to match the Architect's/Engineer's sample where so indicated. Include information with each sample to show generic description, source or product name and manufacturer, limitations, and compliance with standards. Samples are submitted for review and confirmation of color, pattern, texture and "kind" by Architect/Engineer. Architect/Engineer will not "test" samples (except as otherwise indicated) for other requirements, which are therefore the exclusive responsibility of the Contractor.

4.5 WARRANTIES - In addition to copies desired for Contractor's use, furnish two (2) executed copies, except furnish two (2) additional copies required for maintenance manuals. Furnish same number of copies of specified and coincidental product warranties, where specific execution for project application is not required.

4.6 GENERAL DISTRIBUTION - Provide additional distribution of submittals (not included in the aforementioned copy submittal requirements) to subcontractors, suppliers, fabricators, installers, governing authorities and others as necessary for proper performance of the work. Include such additional copies in transmittal to Architect/Engineer where required to receive "Action" marking before final distribution.

4.7 PROCESSING TIME – Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect’s receipt of submittal.

A. Initial Review: Allow 15 days for review of each submittal. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. Architect will advise Contractor when a submittal being processed must be delayed for coordination.

B. Concurrent Review: Where concurrent review of submittals by Architect’s consultants, Owner, or other parties is required, allow 21 days for initial review of each submittal.

4.8 ARCHITECT’S/ENGINEER’S ACTION - Where action and return is required or requested, the Architect will review each submittal, make marks to indicate corrections or modifications required, and return it. The Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:

A. Final Unrestricted Release - Work may proceed, provided it complies with contract documents, when submittal is returned with the following marking:

   “No Corrections Noted”

B. Final-But-Restricted Release - Work may proceed, provided it complies with notations and corrections on submittal and with contract documents, when submittal is returned with the following marking:

   “Make Corrections Noted”
C. **Returned for Resubmittal** - Do not proceed with work. Revise submittal in accordance with notations thereon, and resubmit without delay to obtain a different action marking. Do not allow submittals with the following marking (or unmarked submittals where a marking is required) to be used in connection with performance of the work:

   “To Be Revised and Resubmitted”

D. **Returned for Non-Compliance** - Do not proceed with work. Product submitted does not comply with Contract Documents. Resubmit for product complying with the requirements of the Contract Documents. Do not allow submittals with the following marking to be used in connection with performance of the work:

   “Rejected – Returned for Non-Compliance”

4.9 **OPERATION AND MAINTENANCE MANUALS** - After the shop drawings have been approved, the Operation & Maintenance Manuals are then to be submitted to the Architect. At least two (2) copies of these Manuals shall be submitted.

END OF SECTION 01300
SECTION 01310 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:

1. General Project coordination procedures.
2. Coordination Drawings.
3. Project meetings.

B. See Division 1 Section "Execution Requirements" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.

1.2 COORDINATION

A. Coordination: Coordinate construction operations included in various Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

B. If necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of Contractor's Construction Schedule.
2. Preparation of the Schedule of Values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Preinstallation conferences.
7. Project closeout activities.

1.3 SUBMITTALS

A. Coordination Drawings: Prepare Coordination Drawings if limited space availability necessitates maximum utilization of space for efficient installation of different components or if coordination is required for installation of products and materials fabricated by separate entities.

1. Indicate relationship of components shown on separate Shop Drawings.
2. Indicate required installation sequences.
3. See Division 15 Section "Basic Mechanical Materials and Methods" for specific Coordination Drawing requirements for mechanical installations.
4. See Division 16 Section "Basic Electrical Materials and Methods" for specific Coordination Drawing requirements for electrical installations.

1.4 PROJECT MEETINGS

A. General: Schedule and conduct meetings and conferences at Project site.

1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
3. Minutes: Record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within three days of the meeting.

B. Preconstruction Conference: Schedule a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 15 days after execution of the Agreement. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.

1. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; manufacturers; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Discuss items of significance that could affect progress, including the following:
   a. Tentative construction schedule.
   b. Phasing.
   c. Critical work sequencing.
   d. Designation of responsible personnel.
   e. Procedures for processing field decisions and Change Orders.
   f. Procedures for processing Applications for Payment.
   g. Distribution of the Contract Documents.
   h. Submittal procedures.
   i. Preparation of Record Documents.
j. Use of the premises.
k. Responsibility for temporary facilities and controls.
l. Parking availability.
m. Office, work, and storage areas.
n. Equipment deliveries and priorities.
o. First aid.
q. Progress cleaning.
r. Working hours.

C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.

1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect of scheduled meeting dates.

2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
   b. Options.
   c. Related Change Orders.
   d. Purchases.
   e. Deliveries.
   f. Submittals.
   g. Review of mockups.
   h. Possible conflicts.
   i. Compatibility problems.
   j. Time schedules.
   k. Weather limitations.
   l. Manufacturer's written recommendations.
   m. Warranty requirements.
   n. Compatibility of materials.
   o. Acceptability of substrates.
   p. Temporary facilities and controls.
   q. Space and access limitations.
   r. Regulations of authorities having jurisdiction.
   s. Testing and inspecting requirements.
   t. Required performance results.
   u. Protection of construction and personnel.

3. Record significant conference discussions, agreements, and disagreements.

4. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.

D. Progress Meetings: Conduct progress meetings at monthly intervals. Coordinate dates of meetings with preparation of payment requests.

1. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in
planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.

2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
   a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
   b. Review present and future needs of each entity present, including the following:
      1) Interface requirements.
      2) Sequence of operations.
      3) Status of submittals.
      4) Deliveries.
      5) Off-site fabrication.
      6) Access.
      7) Site utilization.
      8) Temporary facilities and controls.
      9) Work hours.
      10) Hazards and risks.
      11) Progress cleaning.
      12) Quality and work standards.
      13) Change Orders.
      14) Documentation of information for payment requests.

3. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present. Include a brief summary, in narrative form, of progress since the previous meeting and report.
   a. Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01310
SECTION 01500 - TEMPORARY FACILITIES

PART 1 - GENERAL

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

1.2 This section specifies certain minimum temporary facilities to be provided by the Contractor regardless of methods and means selected for performance of the work, but not by way of limitation and not assured for compliance with governing regulations. Use of alternate temporary facilities is Contractor's option, subject to the Architect's acceptance. Temporary facilities is defined to exclude tools and construction machines, testing, demolition, alterations, soil borings, mock-ups and similar items.

1.3 Costs for temporary services, utilities and facilities, unless otherwise specifically indicated shall be the responsibility of the Contractor.

PART 2 - PRODUCTS

2.1 SHEDS AND STORAGE - Provide suitable and sufficient enclosed and covered spaces, with raised flooring, to protect materials and equipment subject to damage by weather or construction.

2.2 FENCING AND BARRICADES - Provide fences and barricades and protection devices sufficiently to prevent injury to persons or damage to property in accordance with Safety Requirements of applicable standards, codes, ordinances, and insurance agencies.

2.3 SCAFFOLDING
   A. Provide scaffolding, ramps, runways, platforms, guards, rails, stairs, and ladders as necessary for this work.
   B. Meet safety requirements of applicable standards, codes, ordinances, and insurance agencies.
   C. Provide lights and signs to prevent damage or injury.

2.4 LIFTING AND HOISTING - Provide hoists, temporary elevators, lifts, cranes, and towers necessary for expediting the handling of materials.
2.5 TOILETS - Provide adequate temporary outside toilet facilities for use of persons working at the site. Provide toilet facilities with adequate light and ventilation and toilet tissue in suitable holder. Comply with applicable legal and health requirements.

2.6 ELECTRICITY - Make arrangements for, and provide temporary equipment, poles, wiring, switches, and outlets necessary to provide an adequate supply of electricity for lighting and power for construction purposes from the Owner’s existing power system. Cost of temporary service shall be borne by the Contractor. Cost of electrical power will be borne by the Owner.

PART 3 - EXECUTION

3.1 Maintain all temporary facilities until the project has been substantially completed and accepted by the Owner.

3.2 Provide sheds and covered spaces suitably to store materials and equipment requiring protection.

3.3 Erect and maintain scaffolding, ramps, platforms, guards, rails, stairs, and ladders as necessary for this work to meet all applicable safety laws and ordinances.

3.4 Maintain lights and other safety equipment. Keep safety lights burning from dusk to dawn.

3.5 Install lifting and hoisting equipment to meet all applicable safety requirements.

3.6 Maintain and keep toilets in a clean and sanitary condition.

3.7 Make arrangements and install temporary water, electric, and telephone service required for the project.

3.8 Maintain temporary heating system during cold weather to adequately protect the work in place or work being placed.

3.9 Pump or drain water to keep work and storage area free from water which could interfere with the work, or could cause damage. Distribute discharge to prevent erosion.

3.10 Remove all temporary work at the completion of the project, unless directed otherwise by the Engineer/Architect.
3.11 Clean spaces that were occupied by temporary work. Remove debris and rubbish from the site.

END OF SECTION 01500
SECTION 01635 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for substitutions.

B. Related Section:

1. Division 01 Section "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.

1.2 DEFINITIONS

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

1.3 SUBMITTALS

A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Substitution Request Form: Use CSI Form 13.1A.

2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
   a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
   b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.
   c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable specification section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
   d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
   e. Samples, where applicable or requested.
   f. Certificates and qualification data, where applicable or requested.
   g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
   h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
i. Research reports evidencing compliance with building code in effect for Project, from ICC-ES.

j. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.

k. Cost information, including a proposal of change, if any, in the Contract Sum.

l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.

m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.


   b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.4 QUALITY ASSURANCE

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

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

A. Substitutions for Cause: Submit requests for substitution immediately upon discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.

   1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied:

   a. Requested substitution is consistent with the Contract Documents and will produce indicated results.

   b. Requested substitution will not adversely affect Contractor's construction schedule.

   c. Requested substitution has received necessary approvals of authorities having jurisdiction.

   d. Requested substitution is compatible with other portions of the Work.
e. Requested substitution has been coordinated with other portions of the Work.
f. Requested substitution provides specified warranty.
g. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

B. Substitutions for Convenience: Architect will consider requests for substitution if received within 60 days after the Notice to Proceed.

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

PART 3 - EXECUTION (Not Used)

END OF SECTION 01635
3.2 FINAL CLEANING

A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and anti-pollution regulations.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturers’ written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
   a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
   b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
   c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
   d. Remove tools, construction equipment, machinery, and surplus material from Project site.
   e. Clean exposed exterior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances.
   f. Remove labels that are not permanent.
   g. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
      1) Do not paint over "UL" and similar labels, including electrical nameplates.
   h. Wipe surfaces of electrical equipment. Remove excess mortar droppings, and other foreign substances.
   i. Replace parts subject to unusual operating conditions.
   j. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.
   k. Leave Project clean and ready for occupancy.

C. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION 01770
SECTION 01781 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for Project Record Documents, including the following:

1. Record Drawings.
2. Record Specifications.
3. Record Product Data.

B. See Division 1 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.

C. See Divisions 2 through 33 Sections for specific requirements for Project Record Documents of products in those Sections.

1.2 SUBMITTALS

A. Record Drawings: Comply with the following:

1. Number of Copies: Submit one set of marked-up Record Prints.

B. Record Specifications: Submit one copy of Project's Specifications, including addenda and contract modifications.

C. Record Product Data: Submit one copy of each Product Data submittal.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

A. Record Prints: Maintain one set of blue- or black-line white prints of the Contract Drawings and Shop Drawings.

1. Preparation: Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare marked-up Record Prints.
   a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
   b. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
2. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.

3. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.

4. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

B. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.

1. Record Prints: Organize Record Prints and newly prepared Record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.

2. Identification: As follows:
   a. Project name.
   b. Date.
   c. Designation "PROJECT RECORD DRAWINGS."
   d. Name of Architect.
   e. Name of Contractor.

2.2 RECORD SPECIFICATIONS

A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.

2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.

3. Record name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.

4. Note related Change Orders, Record Drawings, and Product Data where applicable.

2.3 RECORD PRODUCT DATA

A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.

2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.

3. Note related Change Orders, Record Drawings, and Product Data where applicable.

2.4 MISCELLANEOUS RECORD SUBMITTALS
A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

A. Recording: Maintain one copy of each submittal during construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until end of Project.

B. Maintenance of Record Documents and Samples: Store Record Documents and Samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.

END OF SECTION 01781
SECTION 01782 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:

1. Emergency manuals.
2. Operation manuals for systems, subsystems, and equipment.
3. Maintenance manuals for the care and maintenance of products, materials, and finishes, systems and equipment.

B. See Divisions 2 through 31 Sections for specific operation and maintenance manual requirements for products in those Sections.

1.2 SUBMITTALS

A. Manual: Submit one copy of each manual in final form at least 15 days before final inspection. Architect will return copy with comments within 15 days after final inspection.

1. Correct or modify each manual to comply with Architect's comments. Submit one copy of each corrected manual within 15 days of receipt of Architect's comments.

PART 2 - PRODUCTS

2.1 MANUALS, GENERAL

A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain a title page, table of contents, and manual contents.

B. Title Page: Enclose title page in transparent plastic sleeve. Include the following information:

1. Subject matter included in manual.
2. Name and address of Project.
3. Name and address of Owner.
4. Date of submittal.
5. Name, address, and telephone number of Contractor.
6. Name and address of Architect.
7. Cross-reference to related systems in other operation and maintenance manuals.

C. Table of Contents: List each product included in manual, identified by product name, indexed to content of volume, and cross-referenced to Specification Section number in Project Manual.
D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.

1. Binders: Heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
   a. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.

2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.

3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software diskettes for computerized electronic equipment.

4. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
   a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
   b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

2.2 EMERGENCY MANUALS

A. Content: Organize manual into a separate section for type of emergency, emergency instructions, and emergency procedures.

B. Type of Emergency: Where applicable, include instructions and procedures for each system, subsystem, piece of equipment, and component for flood, gas leak, water leak, power failure, water outage, and equipment failure.

C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.

D. Emergency Procedures: Include instructions on stopping, shutdown instructions for each type of emergency, operating instructions for conditions outside normal operating limits, and required sequences for electric or electronic systems.

2.3 OPERATION MANUALS

A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and equipment descriptions, operating standards, operating procedures, operating logs, wiring and control diagrams, and license requirements.
B. Descriptions: Include the following:

1. Product name and model number.
2. Manufacturer's name.
3. Equipment identification with serial number of each component.
4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.
7. Performance curves.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

C. Operating Procedures: Include startup, break-in, and control procedures; stopping and normal shutdown instructions; routine, normal, seasonal, and weekend operating instructions; and required sequences for electric or electronic systems.

D. Systems and Equipment Controls: Describe sequence of operation, and diagram controls as installed.

E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

2.4 PRODUCT MAINTENANCE MANUAL

A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.

C. Product Information: Include the following, as applicable:

1. Product name and model number.
2. Manufacturer's name.
3. Color, pattern, and texture.
5. Reordering information for specially manufactured products.

D. Maintenance Procedures: Include manufacturer's written recommendations for inspection procedures, types of cleaning agents, methods of cleaning, schedule for cleaning and maintenance, and repair instructions.

E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.

F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
2.5 SYSTEMS AND EQUIPMENT MAINTENANCE MANUAL

A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.

B. Source Information: List each system, subsystem, and piece of equipment included in the manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.

C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including maintenance instructions, drawings and diagrams for maintenance, nomenclature of parts and components, and recommended spare parts for each component part or piece of equipment.

D. Maintenance Procedures: Include test and inspection instructions, troubleshooting guide, disassembly instructions, and adjusting instructions, and demonstration and training videotape if available, that detail essential maintenance procedures.

E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.

F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.

G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.

H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

A. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.

B. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.

C. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
D. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

E. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in Record Drawings to ensure correct illustration of completed installation.

1. Do not use original Project Record Documents as part of operation and maintenance manuals.

F. Comply with Division 1 Section "Closeout Procedures" for the schedule for submitting operation and maintenance documentation.

END OF SECTION 01782
SECTION 01820 - DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 SUMMARY
   A. This Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:
      1. Demonstration of operation of systems, subsystems, and equipment.
      2. Training in operation and maintenance of systems, subsystems, and equipment.

1.2 SUBMITTALS
   A. Instruction Program: Submit two copies of outline of instructional program, including schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.
   B. Demonstration and Training Videotape: Submit two copies at end of each training module.

1.3 QUALITY ASSURANCE
   A. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Division 1 Section "Quality Requirements," experienced in operation and maintenance procedures and training.
   B. Preinstruction Conference: Conduct conference at the site. Review methods and procedures related to demonstration and training.
   C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data have been reviewed and approved by Architect.

PART 2 - PRODUCTS

2.1 INSTRUCTION PROGRAM
   A. Program Structure: Develop an instruction program that includes individual training modules for each system and equipment not part of a system, as required by individual Specification Sections.
   B. Training Modules: Develop a learning objective and teaching outline for each module. Include description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following:
1. Basis of System Design, Operational Requirements, and Criteria: Include system and equipment descriptions, operating standards, regulatory requirements, equipment function, operating characteristics, limiting conditions, and performance curves.

2. Documentation: Review emergency, operations, and maintenance manuals; Project Record Documents; identification systems; warranties and bonds; and maintenance service agreements.

3. Emergencies: Include instructions on stopping; shutdown instructions; operating instructions for conditions outside normal operating limits; instructions on meaning of warnings, trouble indications, and error messages; and required sequences for electric or electronic systems.

4. Operations: Include startup, break-in, control, and safety procedures; stopping and normal shutdown instructions; routine, normal, seasonal, and weekend operating instructions; operating procedures for emergencies and equipment failure; and required sequences for electric or electronic systems.

5. Adjustments: Include alignments and checking, noise, vibration, economy, and efficiency adjustments.

6. Troubleshooting: Include diagnostic instructions and test and inspection procedures.

7. Maintenance: Include inspection procedures, types of cleaning agents, methods of cleaning, procedures for preventive and routine maintenance, and instruction on use of special tools.

8. Repairs: Include diagnosis, repair, and disassembly instructions; instructions for identifying parts; and review of spare parts needed for operation and maintenance.

PART 3 - EXECUTION

3.1 INSTRUCTION

A. Facilitator: Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and location.

B. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.

1. Owner will furnish an instructor to describe Owner's operational philosophy.

C. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.

1. Schedule training with Owner, through Architect, with at least seven days advance notice.

END OF SECTION 01820
SECTION 02070 - SELECTIVE DEMOLITION

PART 1- GENERAL

1.1 RELATED DOCUMENTS - Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to the work of this section.

1.2 DESCRIPTION OF WORK

A. The extent of demolition work is shown on the drawings.

B. Demolition includes the complete wrecking of items of existing work indicated on the drawings and protection of existing work indicated to remain. Demolition shall include removal of all existing construction required to permit construction of new work called for in the drawings and the specifications. Removal and disposal of demolished materials shall be included in this work.

1.3 JOB CONDITIONS

A. Conditions existing at the time of inspection for bidding purposes will be maintained by the Owner in so far as practicable. However, variations within the structure may occur by Owner's removal and salvage operations prior to the start of the demolition work.

B. Asbestos - It is not expected that asbestos will be encountered in the Work. If any materials suspected of containing asbestos are encountered, do not disturb the materials. Immediately notify the Architect and the Owner.

C. Partial Removal - Items of salvageable value to the Contractor may be removed from the structure as the work progresses. Salvaged items must be transported from the site as they are removed. Storage or sales of removed items on the site will not be permitted.

D. Protections

1. Provide temporary barricades and other forms of protection to protect Owner's personnel and general public from injury due to selective demolition work.

2. Ensure the safe passage of persons around the area of demolition. Conduct operations to prevent injury to adjacent buildings, structures, other facilities, and persons. Erect temporary covered passageways as required.

3. Construct temporary insulated dustproof partitions where required to separate areas where noisy or extensive dirt or dust operations are performed. Equip partitions with dustproof doors and security locks.

4. Remove protections at completion of work.

E. Damages - Promptly repair damages to site and adjacent facilities or property by demolition and removal operations at no cost to the Owner. All repairs to the site, or adjacent property shall be made following review and written approval of the Architect.
F. Utility Services - Maintain existing utilities, indicated to remain, keep in service, and protect against damage during demolition and construction operations.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

3.1 DEMOLITION

A. Pollution Controls - Use water sprinkling, temporary enclosures, and other suitable methods to limit the amount of dust and dirt rising and scattering in the air to the lowest practical level.

B. Comply with governing regulations pertaining to environmental protection.

C. Clean remaining and adjacent structures and improvements of dust, dirt, and debris caused by demolition operations, as directed by the Architect or governing authorities. Return adjacent areas to condition existing prior to the start of the work.

D. Proceed with demolition in a systematic manner.

3.2 DISPOSAL OF DEMOLISHED MATERIALS

A. General - Remove from the site debris, rubbish, and other materials resulting from demolition operations.

B. Burning of removed materials from demolished items will not be permitted on the site.

C. Removal - Transport materials removed from demolished structures and dispose of off the site in complete compliance with applicable local and state laws, regulations, and ordinances. The Contractor shall be responsible for locating an approved disposal site.

END OF SECTION 02070
SECTION 02485 - TOPSOILING AND SEEDING

PART 1 - GENERAL

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

1.2 SCOPE - The work covered by this Section consists of furnishing all plant, labor, equipment and materials, and in performing all operations in connection with topsoiling and seeding the graded areas, all slopes adjacent to the graded areas; all disturbed or scarred areas, complete in strict accordance with the plans and specifications.

PART 2 - PRODUCTS

2.1 SEED - Provide fresh, clean, new-crop seed complying with tolerance for purity and germination established by Official Seed Analysts for North America. Provide seed mixture composed of grass species, proportions and minimum percentages of purity, germination, and maximum percentage of weed seed, as specified.

1. Seed shall be 95% Certified Turf-Type Tall Fescue - a mixture of equal parts of three of the following varieties: Adventure, Apache, Arid, Bonanza, Falcon, Finelann I, Finelann 5GL, Houndog, Jaguar, Mustang, Olympic, Rebel 2, Twilight, Titan or Wrangler, or approved equivalent.
2. Mixed with 5% (by weight) certified perennial rye.
3. Certified labels from the State Department of Agriculture shall be provided to the Owner upon request.

2.2 FERTILIZER - Fertilizer shall be 5-10-5 grade, uniform in composition, free flowing and suitable for application with approved equipment, delivered to the site in bags or other convenient containers, each fully labeled, conforming to the applicable State fertilizer laws, and bearing the name, trade name or trademark, and warranty of the producer.

2.3 LIME - Lime shall be ground limestone containing not less than 85 percent of total carbonates and shall be ground to such fineness that at least 50 percent will pass through a 100-mesh sieve and at least 90 percent will pass through a 20-mesh sieve. Coarser materials will be acceptable provided the specified rates of application are increased proportionately, on the basis of quantities passing the 100-mesh sieve but no additional payment will be made for the increased quantity. The Architect shall be furnished with duplicate copies of invoices for all fertilizer and lime used on the project. Invoices for fertilizer shall show the grade furnished. Invoices for lime shall show total minimum carbonates and minimum percentages of the material furnished that pass the 100 and 20 mesh sieves.

2.4 TOPSOIL - Topsoil to be used under this Section shall be topsoil removed and stockpiled under other
sections. Additional topsoil if required under this Section shall be natural, friable material possessing the characteristics of representative soils in the vicinity which produce heavy growths of crops, grass or other vegetation, and shall be obtained from naturally well-drained areas. The topsoil shall be reasonably free from clay lumps, stones, stumps, roots or other objects larger than 2 inches in diameter, toxic substances, or any other material or substance which might be harmful to plant growth or be a hindrance to grading and maintenance operations. Additional topsoil, if required shall be furnished by the Contractor from his own sources off the site of the contract limits.

2.5 MULCH - Mulching material shall consist of dry straw or hay free of noxious weeds. Mulch shall not be musty, moldy, caked, decayed or extremely dusty.

PART 3 - EXECUTION

3.1 SPREADING OF TOPSOIL - On areas which are intended to be seeded, the compacted subgrade or slope shall be scarified to a depth of 2 inches for the bonding of topsoil with subsoil. Topsoil is then to be evenly spread, compacted and graded to a thickness of not less than 6 inches.

3.2 PREPARATION OF SEED BED - Fertilizer shall be distributed uniformly at a rate of 1,200 pounds per acre over the areas to be seeded, and shall be incorporated into the soil to a depth of at least 3 inches by disking, harrowing, or other methods. Distribution by means of an approved seed drill equipped to sow seed and distribute fertilizer at the same time will be acceptable. Immediately following or simultaneously with the incorporation of the fertilizer, lime shall be incorporated into the soil to a depth of at least 3 inches by disking, harrowing, or other methods. The incorporation of the lime together with the fertilizer may be performed in one operation.

3.3 PLANTING SEED - All seeding work shall be done between the dates of August 15 and October 1, or April 15 and May 30. When delays in operations carry the work beyond the planting season designated, or when conditions are such, by reason of drought, high winds, excessive moisture, or other factors that satisfactory results are not likely to be obtained, the Architect will stop the work, and work shall be resumed only when conditions are favorable again or when approved alternate or corrective measures and procedures have been put into effect. If inspection during seeding operations or after there is a show of green indicates that strips wider than the space between the rows planted have been left or other areas skipped, the Architect may require the sowing of additional seed on these areas. Seed will be broadcast either by hand or approved sowing equipment at the rate of 250 pounds per acre. The seed shall be uniformly distributed over the designated areas. Half the seed shall be sown with the sower moving in one direction, and the remainder shall be sown with the sower moving at right angles to the first sowing. The seed shall be covered to an average depth of 1/4 inch by means of a brush harrow, spike-tooth harrow, chain harrow, cultipacker, or other approved device. Broadcast seeding shall not be done during windy weather.

3.4 COMPACTING - Immediately after the operations specified above have been completed, the entire area shall be compacted by means of a cultipacker, roller, or other approved equipment weighing 60 - 90 pounds per linear foot of roller. When a cultipacker or similar equipment is used, the final rolling shall be at right angles to the existing slopes to prevent water erosion, or at right angles to the prevailing wind to prevent dust, as directed by the Architect.
3.5 MULCHING - Mulch shall be spread over all seeded areas at the rate of approximately 2 tons per acre. Mulch shall be applied to a uniform depth by an approved method and in such a manner that not more than 10 percent of the soil surface is exposed. The use of wet hay or straw will not be permitted.

3.6 PROTECTION AND MAINTENANCE - The area shall be protected against traffic or other use by erecting barricades immediately after seeding is completed and by placing warning signs on the various areas of a type approved by the Architect. Seeded areas shall be maintained by mowing to the satisfaction of the Architect. Any areas which do not produce a healthy show of grass shall be reseeded during the next proper season, at the Contractor's expense.

3.7 HYDRO-SEEDING - At the Contractor's option, hydro-seeding methods may be used in lieu of previously described methods for the placement of seed. Contractor shall submit proposed method and equipment to the Architect for approval.

END OF SECTION 02485
SECTION 03300 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

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

1.2 CODE AND STANDARDS - ACI 318 "Building Code Requirements for Reinforced Concrete"; ACI 301 "Specifications for Structural Concrete for Building"; ACI 347 "Recommended Practice for Concrete Formwork"; ACI 304 "Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete"; ACI 302.1R "Guide for Concrete Floor and Slab Construction" comply with applicable provisions except as otherwise indicated.

1.3 SUBMITTALS

A. LABORATORY TEST REPORTS - Submit two copies of laboratory test reports for concrete materials and mix design test.

1. Submit for approval sufficient data to indicate that aggregates meet or exceed the requirements of ASTM C33. All aggregates, including combinations of sizes of aggregates shall meet the appropriate grading requirements of the applicable ASTM specification.

2. Certifications signed by the concrete producer and general contractor, may be submitted in lieu of material testing when acceptable to the Architect or Engineer.

B. MANUFACTURER'S DATA - For information only, submit two (2) copies of manufacturer's specifications for proprietary material including reinforcement and forming accessories, admixtures, joint materials, hardeners, curing materials, and others as requested by the Architect.

C. SHOP DRAWINGS for reinforcement detailing fabricating, bending, and placing concrete reinforcement. Comply with ACI 315 "Manual of Standard Practice for Detailing Reinforced Concrete Structures" showing bar schedules, stirrup spacing, bent bar diagrams, and arrangement of concrete reinforcement. Include special reinforcing required for openings through concrete structures.

1.4 QUALITY CONTROL TESTING

A. The Contractor's testing laboratory shall perform sampling and testing during concrete placement, as follows:

1. Sampling - ASTM C 172 and ACI 301
2. Slump - ASTM C 143, 2" to 4" one test for each load at point of discharge.
3. Air Content - ASTM C 31, one for each set of compressive strength specimens. ASTM C 173 volumetric method for lightweight concrete.
4. Compressive Strength - ASTM C 39 and ACI 301, one set for each 50 cu. yds. or fraction thereof of each class of concrete placed in any one day; 2 specimens tested at 7 days, 2 specimens tested at 28 days, and two retained for additional testing if required. Compressive Strength (28 days): 3,500 psi.

B. Test results will be reported in writing to the Architect, Contractor and concrete producer on the same day tests are made if tests indicate material does not meet these specifications.

C. Materials and installed work may require testing and retesting at any time during progress of Work. Tests, including retesting, of rejected materials for installed Work, shall be done at the Contractor's expense.

1.5 MIX PROPORTIONS AND DESIGN

A. Proportion concrete mix in accordance with ACI 211.1, and ACI 211.2. Submit concrete mix and provide sufficient data by the trial batch method or by the field experience method to comply with ACI 301 or ACI 318. Concrete mix approval by water/cement ratio is not allowed.

B. Submit written report to Architect for each proposed concrete mix at least 15 business days prior to start of work. Do not begin concrete production until mixes have been reviewed and are acceptable to the Architect.

C. Mix designs may be adjusted when material characteristics, job conditions, weather, test results or other circumstances warrant. Do not use revised concrete mixes until submitted to and accepted by Architect.

PART 2 - PRODUCTS

2.1 PORTLAND CEMENT - ASTM C 150, Type 1.

2.2 AGGREGATES

A. Coarse Aggregate - ASTM C 33, crushed stone processed from natural rock or stone.

B. Fine Aggregate - ASTM C 33, clean sharp, silica sand free from loam, clay, lumps or other deleterious substances.

2.3 WATER - Clean, free of oils, acids, organic matter.

2.4 AIR-ENTRAINING ADMIXTURE - ASTM C 260.

2.5 WATER-REDUCING ADMIXTURE - ASTM C 494. Only use admixtures which have been tested and accepted in mix designs and have been approved by the Architect.
2.6 FORM MATERIALS: Provide form materials with sufficient stability to withstand pressure of placed concrete without bow or deflection.

A. Exposed Concrete Surfaces - Acceptable panel-type to provide continuous, straight, smooth, as-cast surfaces. Use largest practical sizes to minimize form joints.

B. Unexposed Concrete Surfaces - Suitable material to conform to Part I of this section and project requirements.

2.7 REINFORCING BARS - ASTM A 615, Grade 60.

2.8 SUPPORTS FOR REINFORCEMENT - Bolsters, chairs, spacers and other devices for spacing, supporting and fastening reinforcement in place. Use wire bar type supports complying with CRSI recommendations, unless otherwise indicated. Do not use wood, brick, and other unacceptable materials.

PART 3 - EXECUTION

3.1 READY-MIXED CONCRETE - ASTM C 94.

3.2 REINFORCEMENT

A. Position, support and secure reinforcement against displacement. Locate and support with metal chairs, runners, bolsters, spacers, and hangers, as required. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.

B. All reinforcement in slabs on grade and other reinforcement supported from the ground shall rest on precast concrete blocks not less than 4 inch square, and having a compressive strength equal to the specified compressive strength of the concrete being placed.

C. Install welded wire fabric in as long lengths as practicable, lapping at least one and one-half mesh.

3.3 JOINTS - Provide construction, isolation, and control joints as indicated or required. Locate construction joints so as to not impair the strength and appearance of the structure. Place isolation and control joints in slabs-on-ground to stabilize differential settlement and random cracking.

3.4 INSTALLATION OF EMBEDDED ITEMS - Set and build into the work anchorage devices and other embedded items required for other work that is attached to, or supported by cast-in-place concrete. Use setting diagrams, templates and instructions provided by other trades for locating and setting.
3.5 CONCRETE PLACEMENT

A. Comply with ACI 301 and 304, placing concrete in a continuous operation within planned joints or sections. Do not begin placement until work of other trades affecting concrete is completed. Protect the work of other trades with polyethylene or Kraft paper prior to placing concrete.

B. Consolidate placed concrete using mechanical vibrating equipment with hand rodding and tamping, so that concrete is worked around reinforcement and other embedded items and into all parts of forms.

C. Protect concrete from physical damage or reduced strength due to weather extremes during mixing, placement, and curing. (Do not place concrete on subgrades that are muddy, frozen, or that contain ice or water.)
   1. In cold weather comply with ACI 306.
   2. In hot weather comply with ACI 305.

D. Notify the Architect in ample time prior to placing concrete for the Architect to examine subgrades, trenches, reinforcing, and rough-ins before any concrete placement.

3.6 CONCRETE FINISHES (Comply with ACI 301)

A. Exposed-to-view Surfaces - Provide a smooth finish for exposed concrete surfaces. Remove fins and projections, patch defective areas with cement grout, and rub smooth.

3.7 CURING - Begin initial curing as soon as free water has disappeared from exposed surfaces. Where possible, keep continuously moist for not less than 72 hours. Continue curing by use of moisture-retaining cover or membrane-forming curing compound. Cure formed surfaces by moist curing until forms are removed. Provide protections as required to prevent damage to exposed concrete surfaces.

3.8 REPAIR

A. Repair all honeycombed and defective concrete by removing down to sound concrete. The patching mixture shall be made of the same material as used for the concrete.

B. All honeycombed and other defective concrete shall be removed down to sound concrete. If chipping is necessary the edges shall be perpendicular to the surface or slightly undercut. No featheredges will be permitted. The area to be patched and an area at least 6 in. wide surrounding it shall be dampened to prevent absorption of water from the patching mortar. A bonding grout shall be prepared using a mix of approximately 1 part cement to 1 part fine sand passing a No. 30 mesh sieve, mixed to the consistency of thick cream, and then well brushed into the surface.

3.9 PATCHING - Patching of defective concrete or concrete that has been damaged during the progress of the work will not be permitted. The entire section of the damaged or defective concrete shall be removed and replaced with the proper concrete installation. (In some cases, at the discretion of the Architect, patching of small areas may be permitted.)
3.10 WORKMANSHIP/CONCRETE QUALITY: Concrete work which does not conform to the specified requirements, including strength, tolerances, finishes, etc. shall be corrected as directed by the Architect at the Contractor's expense without extension of time therefore. The Contractor shall also be responsible for the cost of corrections to any other work effected by or resulting from corrections to the concrete work.

END OF SECTION 03300
SECTION 04200 - UNIT MASONRY

PART 1 - GENERAL

1.1 SUMMARY
   A. This Section includes unit masonry assemblies consisting of the following:
      1. Concrete masonry units (CMUs) – installed for column sign support and base for stone veneer.

1.2 SUBMITTALS
   A. Product Data: For each type of product indicated.
   B. Material Certificates: For each type of product indicated. Include statements of material properties indicating compliance with requirements including compliance with standards and type designations within standards.
      1. For masonry units include material test reports substantiating compliance with requirements.
   C. Mix Designs: For each type of mortar and grout. Include description of type and proportions of ingredients.

1.3 PROJECT CONDITIONS
   A. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions.
   B. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.

PART 2 - PRODUCTS

2.1 CONCRETE MASONRY UNITS (CMUs)
   A. Concrete Masonry Units: ASTM C 90.
      1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 2000 psi.
      2. Weight Classification: Normal weight.
2.2 MORTAR AND GROUT MATERIALS

A. Portland Cement: ASTM C 150, Type I or II, except Type III may be used for cold-weather construction.

B. Hydrated Lime: ASTM C 207, Type S.

C. Masonry Cement: ASTM C 91.
   1. For joints less than 1/4 inch thick, use aggregate graded with 100 percent passing the No. 16 sieve.
   2. Colored-Mortar Aggregates: Natural sand or crushed stone of color necessary to produce required mortar color.


E. Cold-Weather Admixture: Nonchloride, noncorrosive, accelerating admixture complying with ASTM C 494/C 494M, Type C, and recommended by manufacturer for use in masonry mortar of composition indicated.

F. Water: Potable.

2.3 MORTAR AND GROUT MIXES

A. General: Do not use admixtures, unless otherwise indicated.
   1. Do not use calcium chloride in mortar or grout.
   2. Limit cementitious materials in mortar for exterior and reinforced masonry to portland cement and lime.
   3. Add cold-weather admixture (if used) at same rate for all mortar that will be exposed to view, regardless of weather conditions, to ensure that mortar color is consistent.

B. Mortar for Unit Masonry: Comply with ASTM C 270, Property Specification.
   1. Column masonry: Type S.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Use full-size units without cutting if possible. If cutting is required, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.

3.2 LAYING MASONRY WALLS

A. Lay out columns in advance for accurate spacing of surface bond patterns with uniform joint thickness and for accurate location of openings, movement-type joints, returns, and offsets.
Avoid using less-than-half-size units, particularly at corners, jambs, and where possible, at other locations.

B. Bond Pattern for Exposed Masonry: Unless otherwise indicated, lay exposed masonry in running bond; do not use units with less than nominal 4-inch horizontal face dimensions at corners or jambs.

C. Built-in Work: As construction progresses, build in items specified in this and other sections. Fill in solidly with masonry around built-in items.

D. Fill space between steel frames and masonry solidly with mortar, unless otherwise indicated.

E. Fill cores in hollow concrete masonry units with grout 24 inches under bearing plates, beams, lintels, posts, and similar items, unless otherwise indicated.

3.3 MORTAR BEDDING AND JOINTING

A. Lay concrete masonry units as follows:

1. With face shells fully bedded in mortar and with head joints of depth equal to bed joints.
2. With webs fully bedded in mortar in all courses of piers, columns, and pilasters.
3. With webs fully bedded in mortar in grouted masonry, including starting course on footings.
4. With entire units, including areas under cells, fully bedded in mortar at starting course on footings where cells are not grouted.

B. Joint to be smooth with face of CMU.

3.4 FIELD QUALITY CONTROL

A. Inspectors: Owner will engage qualified independent inspectors to perform inspections and prepare reports. Allow inspectors access to scaffolding and work areas, as needed to perform inspections.

B. Consider inserting a subparagraph listing inspections that will be performed. Delete subparagraph below if not required.

1. Payment for these services will be made by Owner.

3.5 CLEANING

A. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before finishing joints.

3.6 MASONRY WASTE DISPOSAL

A. Waste Disposal as Fill Material: Dispose of clean masonry waste, including excess or soil-contaminated sand, waste mortar, and broken masonry units off site.
SECTION 04410 - STONE MASONRY VENEER

1.1 GENERAL

A. Submittals: Submit the following:
   1. Product Data: For each variety of stone, stone accessory, and other manufactured product specified.
      a. For stone varieties, include data on physical properties required by referenced ASTM standards.
   2. Stone Samples: Sets for each color, grade, finish, and variety of stone required showing the full range of variations expected.
   3. Colored Pointing Mortar Samples: For each color required.
   4. Qualification Data: For stone masonry Installer. Include lists of completed projects with names and addresses of architects and owners.

B. Installer: An experienced installer who has successfully completed stone masonry veneer similar to that indicated for this Project.

C. Mockups: Before installing stone masonry veneer, construct 4'-0" x 4'-0" sample wall panels, in location directed by the Architect, to verify selections made under Sample submittals and to demonstrate aesthetic effects and qualities of materials and execution.

D. Stain Prevention: Immediately remove mortar and soil to prevent them from staining the face of stone masonry veneer.

E. Cold-Weather Requirements: Do not build on frozen subgrade or setting beds. Remove and replace stone masonry veneer damaged by frost or freezing conditions. Comply with the following requirements:
   1. Cold-Weather Construction: Heat mixing water and sand to produce mortar temperatures between 40 and 120 deg F (4 and 49 deg C). Maintain mortar above freezing.
   2. Cold-Weather Protection: Cover masonry with insulating blankets or provide enclosure and heat to maintain temperatures above 32 deg F (0 deg C) for 48 hours after construction. Use wind breaks when wind velocity exceeds 15 mi./h (25 km/h).
   3. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F (4 deg C) and above and will remain so until stone masonry veneer has dried out.

F. Hot-Weather Requirements: Protect stone masonry veneer from excessive evaporation of water from mortar. Do not apply mortar to substrates with temperatures of 100 deg F (38 deg C) and above.

2.1 PRODUCTS

A. Stone Varieties and Sources: Subject to compliance with requirements, provide natural field stone.
   1. Colors and sizes to match the existing Southwest Virginia Community College Sign.
B. Mortar Materials: As follows:

1. Portland Cement: ASTM C 150, Type I or II, except Type III may be used for cold-weather construction.
   a. Match mortar color of existing Wytheville Community College stone sign.
   b. Low-Alkali Cement: Portland cement for use with limestone shall contain not more than 0.60 percent total alkali when tested according to ASTM C 114.


3. For pigmented mortars, use premixed, colored-cement or cement-lime mix of formulation required to produce color indicated.

4. Hydrated Lime: ASTM C 207, Type S.

5. Aggregate: ASTM C 144 and as indicated below:
   a. For pointing mortar, use aggregate graded with 100 percent passing No. 16 (1.18-mm) sieve.
   b. Colored-Mortar Aggregates: Natural, colored sand or ground marble, granite, or other sound stone, as required to match Architect's sample.


C. Miscellaneous Masonry Accessories: As follows:

1. Stainless Steel Sheet: ASTM A666, Type 316. Stainless Stainless Steel Screws.

2. Expanded Metal Lath: 3.4 lb/sq. yd. (1.8 kg/sq. m), self-furring, diamond-mesh lath complying with ASTM C 847. Fabricate from structural-quality, zinc-coated (galvanized) steel sheet complying with ASTM A 653/A, 653M, G60 (Z180)

3. Fasteners to be minimum of ¼” diameter, 1” long stainless steel with heads large enough to expanded metal lath to CMU. Spacing of 12” O.C.

D. Masonry Cleaners: As follows:

1. Job-Mixed Detergent Solution: Solution of 1/2-cup (0.14-L) dry-measure tetrasodium polyphosphate and 1/2-cup (0.14-L) dry-measure laundry detergent dissolved in 1 gal. (4 L) of water.

E. Stone Fabrication: Fabricate stone in sizes and shapes required to comply with requirements indicated, including details on Drawings.

1. Gage backs of stones more than 81 sq. in. (522 sq. cm) in area to be applied as an adhered veneer.

2. Shape stone for type of masonry (pattern) indicated:
   a. Type of Masonry (Pattern): Sawed-bed, random-range ashlar with random course heights and random lengths (interrupted coursed).

3. Finish exposed faces and edges of stone as follows:
   a. Finish: Natural cleft.
F. Mortar Mixes: Do not use admixtures, unless otherwise indicated. Do not use calcium chloride in mortar or grout.

1. Mortar for Stone Masonry Veneer: Comply with ASTM C 270, Proportion Specification, for types of mortar indicated below:
   a. Set stone with Type N mortar.
   b. Point stone with Type N mortar.

2. Pigmented Mortar: Select and proportion pigments with other ingredients to produce color required.
   a. For portland cement-lime mortar, limit pigments to not more than 10 percent of cement content by weight.
   b. For masonry cement mortar, limit pigments to not more than 5 percent of cement content by weight.

3.1 EXECUTION

A. Preparation: Accurately mark stud centerlines on face of asphalt-saturated felt before beginning stone installation.

B. Setting Stone Masonry Veneer, General: Execute stone masonry veneer by skilled masons experienced with the kind and form of stone and installation method indicated.

1. Arrange stones for good fit with joint widths within tolerances indicated, and to provide offset between vertical joints as indicated.
2. Arrange stones for uniformity of appearance, with color and size variations uniformly dispersed for an evenly blended appearance. Match lodge facility located in the park.
3. Maintain uniform joint widths, except for variations due to stone size variations and minor variations required to maintain bond alignment, if any. Lay walls with joints of the following width.
   a. Joint Width: 3/8 to 1/2 inch (10 to 13 mm).

C. Construction Tolerances: As follows:

1. Variation from Plumb: For vertical lines and surfaces, do not exceed 1/4 inch in 10 feet (6 mm in 3 m) or 1/2 inch in 40 feet (12 mm in 12 m) or more. For external corners, expansion joints, control joints, and other conspicuous lines, do not exceed 1/4 inch in 20 feet (6 mm in 6 m) or 1/2 inch in 40 feet (12 mm in 12 m) or more.
2. Variation from Level: For bed joints and lines of exposed lintels, sills, parapets, horizontal grooves, and other conspicuous lines, do not exceed 1/4 inch in 20 feet (6 mm in 6 m) or 1/2 inch in 40 feet (12 mm in 12 m) or more.

D. Installing Anchored Stone Masonry Veneer: As follows:

1. Anchor masonry veneer to unit masonry with metal ties embedded in horizontal mortar joints of unit masonry to comply with the following:
   a. Embed ties in veneer mortar to within 1 inch (25 mm) of face.
   b. Anchor wire ties by inserting pintles into eyes of masonry wall reinforcement projecting from horizontal mortar joints.
2. Anchor masonry veneer to framing with adjustable masonry-veneer anchors to comply with the following requirements:
   a. Embed tie section in mortar joints to within 1-1/2 inches (38 mm) of face.
   b. Space anchors as indicated, but not more than 18 inches (457 mm) o.c. vertically and 24 inches (600 mm) o.c. horizontally, with not less than 1 anchor for each 2 sq. ft. (0.2 sq. m) of wall area. Install additional anchors within 12 inches (305 mm) of openings and at intervals around perimeter not exceeding 12 inches (305 mm).

3. Set stone in full bed of mortar with full head joints, unless otherwise indicated. Build anchors and ties into mortar joints as stone is set.

4. Provide 1-inch (25-mm) air space between stone masonry veneer and back-up construction, unless otherwise indicated. Keep air space free of mortar droppings and debris.

5. Rake out joints for pointing with mortar to depths of not less than 1/2 inch (13 mm). Rake joints to uniform depths with square bottoms and clean sides.

E. Pointing: As follows:

1. Prepare stone joint surfaces for pointing with mortar by removing dust and mortar particles. Where setting mortar was removed to depths greater than surrounding areas, apply pointing mortar first in layers not greater than 3/8 inch (10 mm) until a uniform depth is formed.
2. Point stone joints by placing and compacting pointing mortar in layers not greater than 3/8 inch (10 mm). Compact each layer thoroughly and allow to become thumbprint hard before applying next layer.
3. Tool joints, when pointing mortar is thumbprint hard, with a smooth jointing tool to produce concave rodded masonry joints.

F. In-Progress Cleaning: Clean stone masonry veneer as work progresses. Remove mortar fins and smears before tooling joints.

G. Final Cleaning: After mortar is thoroughly set and cured, remove large mortar particles with wooden paddles and nonmetallic scrape hoes or chisels and clean stone masonry veneer as follows:

1. Test cleaning methods on mockup; leave one-half of panel uncleaned for comparison purposes.
2. Protect adjacent stone and non-masonry surfaces from contact with cleaner.
3. Wet wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing thoroughly with clear water.
4. Clean stone by bucket and brush hand-cleaning method described in BIA Technical Note No. 20 Revised II.

H. Waste Disposal as Fill Material: Dispose of clean masonry waste, including unusable stone, waste mortar, and excess or soil-contaminated sand, by crushing and mixing with fill material as fill is placed.

1. Do not dispose of masonry waste as fill within 18 inches (450 mm) of finished grade.

END OF SECTION 04410
PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes structural steel and grout.

1.2 PERFORMANCE REQUIREMENTS

A. Connections: Provide details of simple shear connections required by the Contract Documents to be selected or completed by structural-steel fabricator to withstand LRFD loads indicated and comply with other information and restrictions indicated.


1.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: Show fabrication of structural-steel components.

C. Welding certificates.

D. Mill test reports.

E. Source quality-control test reports.

1.4 QUALITY ASSURANCE

A. Fabricator Qualifications: A qualified fabricator who participates in the AISC Quality Certification Program and is designated an AISC-Certified Plant, Category Sbd.

B. Welding: Qualify procedures and personnel according to AWS D1.1, "Structural Welding Code--Steel."

C. Comply with applicable provisions of AISC's "Code of Standard Practice for Steel Buildings and Bridges."
PART 2 - PRODUCTS

2.1 STRUCTURAL-STEEL MATERIALS
   A. Angles, Plates, and Bar: ASTM A 36/A 36M.
   B. Cold-Formed Hollow Structural Sections: ASTM A 500, Grade B, structural tubing.
   C. Welding Electrodes: Comply with AWS requirements.

2.2 PRIMER
   A. Primer: Fabricator's standard lead- and chromate-free, nonasphaltic, rust-inhibiting primer.

2.3 FABRICATION
   B. Retain below if shear connectors are shop installed to structural steel.

2.4 SHOP CONNECTIONS
   A. Weld Connections: Comply with AWS D1.1 for welding procedure specifications, tolerances, appearance, and quality of welds and for methods used in correcting welding work.

2.5 SHOP PRIMING
   A. Shop prime steel surfaces except the following:
      1. Surfaces to be field welded.
   B. Surface Preparation: Clean surfaces to be painted. Remove loose rust and mill scale and spatter, slag, or flux deposits. Prepare surfaces according to the following specifications and standards:
      1. SSPC-SP 3, "Power Tool Cleaning."
      2. SSPC-SP 2, “Hand Tool Cleaning”
   C. Priming: Immediately after surface preparation, apply primer according to manufacturer's written instructions and at rate recommended by SSPC to provide a dry film thickness of not less than 1.5 mils. Use priming methods that result in full coverage of joints, corners, edges, and exposed surfaces.
PART 3 - EXECUTION

3.1 ERECTION

A. Examination: Verify elevations of concrete- and masonry-bearing surfaces and locations of anchor rods, bearing plates, and other embedments, with steel erector present, for compliance with requirements.

1. Proceed with installation only after unsatisfactory conditions have been corrected.


C. Maintain erection tolerances of structural steel within AISC's "Code of Standard Practice for Steel Buildings and Bridges."

3.2 FIELD CONNECTIONS

A. Weld Connections: Comply with AWS D1.1 for welding procedure specifications, tolerances, appearance, and quality of welds and for methods used in correcting welding work.


3.3 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to inspect field welds and high-strength bolted connections.

1. Owner is responsible for any associated inspection fees.

B. Welded Connections: Field welds will be visually inspected according to AWS D1.1.

C. Correct deficiencies in Work that test reports and inspections indicate does not comply with the Contract Documents.

END OF SECTION 05120
SECTION 10431 - SIGNS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes Backlit Sign Cabinet with Monument and 16mm Led Sign.

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

C. Other sections that may relate to the work in this section include, but are not limited to, the following.

1. New Sign shall be listed per NEC 600.3 (National Electric Code 2009 Addition).
2. Section 16080 – Electrical Systems testing and Inspecting.

1.2 SUBMITTALS

A. Product Data: For each product indicated.

B. Shop Drawings: Include plans, elevations, sections, details, wiring diagrams, and attachments to other Work.

1. Verify dimensions by field measurements before fabrication and indicate measurements on Shop Drawings.
2. Provide message list for Backlit Sign Cabinet, including large-scale details of wording and lettering.

C. Samples: For each sign material indicated that involves color selection.

1.3 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

B. Sign Fabricator Qualifications:

1. Firm experienced in producing signs similar to those indicated for this Project, with a record of a minimum of five years of successful in-service performance, and sufficient production capacity to produce sign units required without causing delay in the Work.

C. UL and NEMA Compliance:

1. Provide lighting fixtures and electrical components for illuminated signs that are labeled and listed by UL and comply with applicable NEMA standards.
D. Single-Source Responsibility:
   1. Obtain signs from one source of a single manufacturer.

PART 2 - PRODUCTS

2.1 Backlit Sign Cabinet
   A. General: Provide two backlit sign cabinets as shown that comply with requirements indicated for materials, thicknesses, finishes, colors, designs, shapes, sizes, and details of construction.
   B. Extruded Aluminum Case: Manufacturer's standard and as follows:
      1. Minimum thickness of metal to be no less than .080”.
      2. Color: Powder coat to match “SWCC Maroon” as selected by owner.
      3. ASTM B 209 (ASTM B 209M), alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with not less than the strength and durability properties of 5005-H15
      1. Face Panel shall be a minimum 1/8” painted aluminum.
      2. Push-Through Copy shall be a minimum ½” raised Plexi-glass.
      3. Sign shall be UV and Impact resistant.
      4. Provide sign copy that complies with requirements indicated on Drawings for size, style, spacing, content, mounting height and location, material, finishes, and colors of signage.
   D. Aluminum Sheet and Plate: ASTM B 209 (ASTM B 209M), alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with not less than the strength and durability properties of 5005-H15.
   E. Fluorescent Backlighting System: Manufacturer’s standard as follows:
      1. Provide Florescent Backlighting System with corresponding high output, cold weather rated transformer(s).
   F. Provide photocell system to remove power from Fluorescent Backlighting System during daylight hours.
      1. Ensure that Backlighting System is accessible from front of cabinet.

2.2 16mm LED Sign System
   A. General: Provide two 16mm LED signs that comply with requirements indicated for materials, thicknesses, finishes, colors, designs, shapes, sizes, and details of construction.
   B. LED Display: Single Faced Full Color 16mm LED Sign.
1. Units shall have 16mm pixel pitch measured center to center of pixel groups (1 Red, 1 Green, and 1 Blue). No pixel sharing accepted.
   a. Units shall have the ability to display 281 trillion colors with full color calibration abilities.
   b. Units shall have a minimum pixel layout of 80x168
   c. Viewing angle shall be a minimum of 140° horizontal and 70° vertical.
   d. Daytime brightness shall be rated at 11,000 nits
      1) Units must include either hardware or software based automatic dimming capability.

2. Units shall have front access to all components for service.
3. Units shall not have internal air conditioners.
4. Units must be fully weather proof.

C. Cabinet: Sign cabinets shall be constructed of extruded aluminum including precision mitered corners, solid welds, and polyurethane finish.

D. Communications: Communications with display shall be via wireless connection to existing college network.
   1. Supply sign mounted transmitter and building mounted receiver.
   2. Wireless system must have a minimum working range of 2000ft.
   3. Wireless system must have CAT5/6 interface for connection to existing college network.

E. Software: Sign shall include a minimum of 5 licenses of “Windows” based graphics and sign programming software.
   1. Software package shall include premade graphics, and animations.
   2. Software package shall have the ability to import text, graphics, and basic animations (JPG, BMP, GIF, AVI).
   3. Software package shall include a minimum of 4 hours on-site training and unlimited over the phone training and technical support.

F. Manufacturer and Installer should have a minimum 5 years experience with similar signs.
   1. Manufacturer and Installer may be required to submit a list of references for similar projects.

PART 3 - EXECUTION

3.1 16mm LED Sign Installation.

A. Cabinet: LED display cabinets shall be mounted per manufacturer’s specifications using recommended hardware.
   1. Mounting locations shall be coordinated with steel fabricator.
   2. All electrical connections shall be coordinated with licensed electrician.
B. Communications: Sign mounted transmitter and building mounted receiver shall be installed to ensure a clear line of site.
   1. Coordinate building mounted receiver and connection to existing college network with college IT staff.

C. Software: Sign installer shall coordinate installation of software licenses with college IT staff.

3.2 Backlit Sign Cabinet Installation.

A. Extruded Aluminum Case: Extruded Aluminum Cases shall be installed per drawings and details.
   1. All fasteners shall be stainless steel.

B. Sign Panels with Push-Through Copy: Sign Panels with Push-Through Copy shall be installed per manufacturer’s instructions.

C. Florescent Backlighting System: Florescent Backlighting Systems shall be installed per manufacturer’s instructions.
   1. All electrical work shall reference Division 16 for proper installation guidelines and applicable codes.

PART 4 – WARRANTY

4.1 16mm LED Sign Warranty

A. LED Display: LED Displays shall carry a 5 year warranty on function and finishes.
   1. All parts and installation/labor shall be included in warranty.
   2. Warranty forms shall be provided with shop drawings.
   3. Manufacturer shall certify that all replacement parts will be available for a minimum of 5 years from completion date.
   4. Parts delivery and replacement within the first 5 years shall take no longer than 72 hours.

B. Cabinet: Cabinets shall carry a 5 year warranty on function and finishes.
   1. All parts and installation / labor shall be included in warranty.
   2. Warranty forms shall be provided with shop drawings.
   3. Manufacturer shall certify that all replacement parts will be available for a minimum of 5 years from completion date.
   4. Parts delivery and replacement within the first 5 years shall take no longer than 72 hours.

C. Communications: Wireless transmitter / receiver shall carry a 5 year warranty on function.
   1. All parts and installation/labor shall be included in warranty.
   2. Warranty forms shall be provided with shop drawings.
3. Manufacturer shall certify that all replacement parts will be available for a minimum of 5 years from completion date.

4. Parts delivery and replacement within the first 5 years shall take no longer than 72 hours.

D. Software: Manufacturer shall certify that software technical support and updates will be available for a minimum of 5 years from completion date.

4.2 Backlit Sign Cabinet Warranties

A. Extruded Aluminum Case: Extruded Aluminum Cases shall carry a 5 year warranty on structural integrity and finishes including UV damage or discoloration.

C. Sign Panel with Push-Through Copy: Sign Panels with Push-Through Copy shall carry a 5 year warranty on finishes including UV damage or discoloration.

D. Aluminum Sheet and Plate: All Aluminum Sheet and Plate material shall carry a 5 year warranty on structural integrity including weld integrity, and any UV damage or discoloration of powder coat.

E. LED Backlighting System: LED Backlighting System shall carry a 5 year warranty on finishes and functionality.

END OF SECTION 10431
SECTION 16060 - GROUNDING AND BONDING

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes grounding of electrical systems and equipment. Grounding requirements specified in this Section may be supplemented by special requirements of systems described in other Sections.

B. Related Sections include the following:

1. Section 16080 – Electrical Testing.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Product Data: For the following:

1. Ground rods.

C. Ground Resistance Field Test Reports: Submit written test reports to include the following:

1. Test procedures used.
2. Test results that comply with requirements.
3. Results of failed tests and corrective action taken to achieve test results that comply with requirements.

1.4 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

1. Comply with UL 467.

B. Comply with NFPA 780 and UL 96 when interconnecting with lightning protection system.

C. Authority having Jurisdiction (AHJ) The organization, office, or individual responsible for approving equipment, materials, an installation, or a procedure.
D. Comply with NFPA 70: 2008 National Electrical Code (NEC)
E. Comply with NEIS “National Electrical Installation Standards”.

1.5 COORDINATION

A. Coordinate electrical supports, raceways, and cable with general construction work.
B. Sequence, coordinate, and integrate installing electrical materials and equipment for efficient flow of the Work.
C. Coordinate electrical service connections to components furnished by utility companies.
   1. Coordinate installation and connection of exterior underground and overhead utilities and services, including provision for service entrances and electricity-metering components.
D. Where electrical identification devices are applied to field-finished surfaces, coordinate installation of identification devices with completion of finished surface.

PART 2 – PRODUCTS

2.1 MANUFACTURES

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   1. Grounding Conductors, Cables, Connectors, and Rods:
      a. Chance/Hubbell.
      c. Harger Lightning Protection, Inc.
      d. ILSCO.
      e. O-Z/Gedney Co.; a business of the EGS Electrical Group.
      f. ECLE Lightning, Inc.
      g. Thomas & Betts, Electrical.

2.2 GROUNDING CONDUCTORS

A. For insulated conductors, comply with Division 16 Section "Conductors and Cables."
B. Material: Copper.
C. Equipment Grounding Conductors: Insulated with green-colored insulation.
D. Grounding Electrode Conductors: Solid copper installed in ½” rigid steel conduit to below grade level.
2.3 CONNECTOR PRODUCTS

A. Comply with IEEE 837 and UL 467; listed for use for specific types, sizes, and combinations of conductors and connected items.

B. Bolted Connectors: Bolted pressure type or compression type.

Mechanical Connectors:

1. The mechanical connector bodies shall be manufactured from high strength, high conductivity cast copper alloy material. Bolts, nuts, washers and lockwashers shall be made of Silicon Bronze and supplied as a part of the connector body and shall be of the two bolt type.

Split bolt connector types are NOT allowed. Exception: the use of split bolts is acceptable for grounding of wire-basket type cable tray, and for cable shields/straps of medium voltage cable.

The connectors shall meet or exceed UL 467 and be clearly marked with the catalog number, conductor size and manufacturer.

Compression Connectors:

2. The compression connectors shall be manufactured from pure wrought copper. The conductivity of this material shall be no less than 99% by IACS standards.

The connectors shall meet or exceed the performance requirements of IEEE 837, latest revision.

The installation of the connectors shall be made with a compression, tool and die system, as recommended by the manufacturer of the connectors.

The connectors shall be clearly marked with the manufacturer, catalog number, conductor size and the required compression tool settings.

Each connector shall be factory filled with an oxide-inhibiting compound.

C. Welded Connectors: Exothermic-welded type, in kit form, and selected per manufacturer's written instructions. Equal to Cadwell

2.4 GROUNDING ELECTRODES

A. Ground Rods: Copper-clad steel.

1. Size: 5/8” by 96 inches.

PART 3 – EXECUTION

3.1 APPLICATION
A. Use only copper conductors for both insulated and bare grounding conductors in direct contact with earth, concrete, masonry, crushed stone and similar materials.

B. In all raceways, use insulated equipment grounding conductors.

C. Exothermic-Welded Connections: Use for connections to structural steel and for underground connections, except those at test wells.

D. Equipment Grounding Conductor Terminations: Use bolted pressure clamps.

E. Underground Grounding Conductors: Use tinned copper conductor, No. 2/0 AWG minimum. Bury at least 24 inches (600 mm) below grade or bury 12 inches (300 mm) above duct bank when installed as part of the duct bank.

2.3 EQUIPMENT GROUNDING CONDUCTORS

A. Comply with NFPA 70, Article 250, for types, sizes, and quantities of equipment grounding conductors, unless specific types, larger sizes, or more conductors than required by NFPA 70 are indicated.

B. Install equipment grounding conductors in all feeders and circuits.

C. Install insulated equipment grounding conductor with circuit conductors for the following items, in addition to those required by NEC:

1. Feeder and branch circuits.
2. Receptacle circuits.
3. Flexible raceway runs.

D. Isolated Equipment Enclosure Circuits: For designated equipment supplied by a branch circuit or feeder, isolate equipment enclosure from supply raceway with a nonmetallic raceway fitting listed for the purpose. Install fitting where raceway enters enclosure, and install a separate equipment grounding conductor. Isolate equipment grounding conductor from raceway and from panelboard grounding terminals. Terminate at equipment grounding conductor terminal of the applicable derived system or service, unless otherwise indicated.

E. Nonmetallic Raceways: Install an equipment grounding conductor in nonmetallic raceways.

3.3 INSTALLATION

A. Ground Rods: Install at least one rod.

1. Drive ground rods until tops are 6 inches (50 mm) below final grade, unless otherwise indicated.
2. Interconnect ground rods with grounding electrode conductors. Use exothermic welds. Make connections without exposing steel or damaging copper coating.
B. Grounding Conductors: Route along shortest and straightest paths possible, unless otherwise indicated. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.

C. Ground connection surfaces shall be cleaned and all connections shall be made so that it is impossible to move them.

D. Install products in accordance with manufactures instructions.

2.5 CONNECTIONS

A. General: Make connections so galvanic action or electrolysis possibility is minimized. Select connectors, connection hardware, conductors, and connection methods so metals in direct contact will be galvanically compatible.

B. Exothermic-Welded Connections: Comply with manufacturer's written instructions. Welds that are puffed up or that show convex surfaces indicating improper cleaning are not acceptable.

C. Equipment Grounding Conductor Terminations: For No. 8 AWG and larger, use pressure-type grounding lugs. No. 10 AWG and smaller grounding conductors may be terminated with winged pressure-type connectors.

D. Noncontact Metal Raceway Terminations: If metallic raceways terminate at metal housings without mechanical and electrical connection to housing, terminate each conduit with a grounding bushing. Connect grounding bushings with a bare grounding conductor to grounding bus or terminal in housing. Bond electrically noncontinuous conduits at entrances and exits with grounding bushings and bare grounding conductors, unless otherwise indicated.

E. Tighten screws and bolts for grounding and bonding connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

G. Compression-Type Connections: Use hydraulic compression tools to provide correct circumferential pressure for compression connectors. Use tools and dies recommended by connector manufacturer. Provide embossing die code or other standard method to make a visible indication that a connector has been adequately grounding conductor.

H. Moisture Protection: If insulated grounding conductors are connected to ground rods or grounding buses, insulate entire area of connection and seal against moisture penetration of insulation and cable.

2.6 FIELD QUALITY CONTROL

A. Testing: Perform the following field quality-control testing:
   1. After installing grounding system but before permanent electrical circuitry has been energized, test for compliance with requirements.
2. Verify that final backfill and compaction has been completed before driving grounding rod electrodes.

3. Test completed grounding system at each location where a maximum ground-resistance level is specified, at service disconnect enclosure grounding terminal; and at ground test wells. Measure ground resistance not less than two full days after the last trace of precipitation, and without the soil being moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance. Perform tests, by the fall-of-potential method according to IEEE 81. Fall of Potential method shall be met by using Biddle Megger auto earth tester or equal.

4. Provide drawings locating each ground rod and ground rod assembly and other grounding electrodes, identify each by letter in alphabetical order, and key to the record of tests and observations. Include the number of rods driven and their depth at each location and include observations of weather and other phenomena that may affect test results. Describe measures taken to improve test results. NFPA 70 has minimum value of 25 ohms. See Evaluations for discussion on appropriate grounding resistance values. Values listed below are typical; adjust to suit Project conditions.
   a. Equipment Rated 500 to 1000 kVA: 5 ohms.

5. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Architect promptly and include recommendations to reduce ground resistance.

END OF SECTION 16060
SECTION 16075 – ELECTRICAL IDENTIFICATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes electrical identification materials and devices required to comply with ANSI C2, NFPA 70, OSHA standards, and authorities having jurisdiction.

B. The work under this section includes the products and execution requirements relating to labeling of power, lighting, general wiring, signal, fire alarm, and telecommunications wire and cabling.

1.3 SUBMITTALS

A. Product Data: For each electrical identification product indicated.

B. Schedule of Nomenclature, An index of electrical equipment and system components used in identification signs and labels.

1.4 QUALITY ASSURANCE

A. Comply with ANSI C2.

B. Comply with ANSI A13.1 and NFPA 70 for color-coding.

C. Authority having Jurisdiction (AHJ) The organization, office, or individual responsible for approving equipment, materials, an installation, or a procedure.


E. Comply with NEIS “National Electrical Installation Standards”

PART 2 – PRODUCTS

2.1 RACEWAY AND CABLE LABELS

A. Comply with ANSI A13.1, Table 3, for minimum size of letters for legend and for minimum length of color field for each raceway and cable size.
1. **Color:** Black letters on orange field.
2. **Legend:** Indicates voltage and service.

B. **Adhesive Labels:** Preprinted, flexible, self-adhesive vinyl with legend overlaminated with a clear, weather- and chemical-resistant coating.

C. **Pretensioned, Wraparound Plastic Sleeves:** Flexible, preprinted, color-coded, acrylic band sized to suit the diameter of the line it identifies and arranged to stay in place by pretensioned gripping action when placed in position.

D. **Colored Adhesive Tape:** Self-adhesive vinyl tape not less than 3 mils thick by 1 to 2 inches wide (0.08 mm thick by 25 to 51 mm wide).

E. **Underground-Line Warning Tape:** Permanent, bright-colored, continuous-printed, vinyl tape.
   1. Not less than 6 inches wide by 4 mils thick (152 mm wide by 0.102 mm thick).
   2. Compounded for permanent direct-burial service.
   3. Embedded continuous metallic strip or core.
   4. Printed legend indicating type of underground line.

F. **Tape Markers:** Vinyl or vinyl-cloth, self-adhesive, wraparound type with preprinted numbers and letters.

G. **Aluminum, Wraparound Marker Bands:** Bands cut from 0.014-inch- (0.4-mm-) thick aluminum sheet, with stamped or embossed legend, and fitted with slots or ears for permanently securing around wire or cable jacket or around groups of conductors.

H. **Plasticized Card-Stock Tags:** Vinyl cloth with preprinted and field-printed legends. Orange background, unless otherwise indicated, with eyelet for fastener.

I. **Aluminum-Faced, Card-Stock Tags:** Weather-resistant, 18-point minimum card stock faced on both sides with embossable aluminum sheet, 0.002 inch (0.05 mm) thick, laminated with moisture-resistant acrylic adhesive, punched for fasteners, and preprinted with legends to suit each application.

J. **Brass or Aluminum Tags:** 2 by 2 by 0.05-inch (51 by 51 by 1.3-mm) metal tags with stamped legend, punched for fastener.

2.2 **NAMEPLATES AND SIGNS**

A. **Safety Signs:** Comply with 29 CFR, Chapter XVII, Part 1910.145.

B. **Engraved Plastic Nameplates and Signs:** Engraving stock, melamine plastic laminate, minimum 1/16 inch (1.6 mm) thick for signs up to 20 sq. in. (129 sq. cm) and 1/8 inch (3.2 mm) thick for larger sizes.
   1. Engraved legend with black letters on white face.
   2. Punched or drilled for mechanical fasteners.
C. Exterior, Metal-Backed, Butyrate Signs: Weather-resistant, nonfading, preprinted, cellulose-acetate butyrate signs with 0.0396-inch (1-mm) galvanized-steel backing; and with colors, legend, and size required for the application. 1/4-inch (6.4-mm) grommets in corners for mounting.

2.3 MATERIALS

A. Labels: All labels shall be permanent, and machine generated. NO HANDWRITTEN OR NON-PERMANENT LABELS ARE ALLOWED. Exception: back side of device plates and junction boxes may use handwritten, legible labeling on box covers, unless specifically prohibited by other specification sections.

B. Cable label size shall be appropriate for the conductor or cable size(s), outlet faceplate layout and patch panel design. All labels shall be self-laminating, white/transparent vinyl and be wrapped around the cable or sheath. Labels for power conductors (600V and lower) shall be cloth-type. Flag type labels are not allowed. The labels shall be of adequate size to accommodate the circumference of the cable being labeled and properly self-laminate over the full extent of the printed area of the label.

C. Tape (phase identification only): Scotch #35 tape in appropriate colors for system voltage and phase.

D. Adhesive type labels not permitted except for phase and wire identification. Machine generated adhesive labels shall be permitted for device plates, 4-11/16” and smaller junction boxes, Fire alarm and control devices.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Identification Materials and Devices: Install at locations for most convenient viewing without interference with operation and maintenance of equipment.

B. Lettering, Colors, and Graphics: Coordinate names, abbreviations, colors, and other designations with corresponding designations in the Contract Documents or with those required by codes and standards. Use consistent designations throughout Project.

C. Sequence of Work: If identification is applied to surfaces that require finish, install identification after completing finish work.

D. Self-Adhesive Identification Products: Clean surfaces before applying.

E. Circuit Identification Labels on Boxes: Install labels externally.

1. Exposed Boxes: Pressure-sensitive, self-adhesive plastic label on cover.
2. Labeling Legend: Permanent, waterproof listing of panel and circuit number or equivalent.
F. Paths of Underground Electrical Lines: During trench backfilling, for exterior underground power, control, signal, and communication lines, install continuous underground plastic line marker located directly above line at 6 to 8 inches (150 to 200 mm) below finished grade. Where width of multiple lines installed in a common trench or concrete envelope does not exceed 16 inches (400 mm) overall, use a single line marker. Install line marker for underground wiring cables in raceway.

G. Color-Coding of Secondary Phase Conductors: Use the following colors for service, feeder and branch-circuit phase conductors:

1. 240/120-V Conductors:
   a. Phase A: Black.
   b. Phase B: Red.

2. Factory apply color the entire length of conductors, except the following field-applied, color-coding methods may be used instead of factory-coded wire for sizes larger than No. 10 AWG:
   a. Colored, pressure-sensitive plastic tape in half-lapped turns for a distance of 6 inches (150 mm) from terminal points and in boxes where splices or taps are made. Apply last two turns of tape with no tension to prevent possible unwinding. Use 1-inch- (25-mm-) wide tape in colors specified. Adjust tape bands to avoid obscuring cable identification markings.
   b. Colored cable ties applied in groups of three ties of specified color to each wire at each terminal or splice point starting 3 inches (76 mm) from the terminal and spaced 3 inches (76 mm) apart. Apply with a special tool or pliers, tighten to a snug fit, and cut off excess length.

H. Power-Circuit Identification: Metal tags or aluminum, wraparound marker bands for cables, feeders, and power circuits in vaults, pull and junction boxes, manholes, and switchboard rooms.

1. Legend: 1/4-inch- (6.4-mm-) steel letter and number stamping or embossing with legend corresponding to indicated circuit designations.
2. Tag Fasteners: Nylon cable ties.

I. Apply warning, caution, and instruction signs as follows:

1. Warnings, Cautions, and Instructions: Install to ensure safe operation and maintenance of electrical systems and of items to which they connect. Install engraved plastic-laminated instruction signs with approved legend where instructions are needed for system or equipment operation. Install metal-backed butyrate signs for outdoor items.

J. Equipment Identification Labels: Engraved plastic laminate. Install on each unit of equipment, including central or master unit of each system. This includes power, lighting, communication, signal, and alarm systems, unless units are specified with their own self-explanatory identification. Unless otherwise indicated, provide a single line of text with 1/2-inch- (13-mm-) high lettering on 1-1/2-inch- (38-mm-) high label; where two lines of text are required, use labels 2 inches (50 mm) high. Use white lettering on
black field. Apply labels for each unit of the following categories of equipment using mechanical fasteners:

1. Panelboards, electrical cabinets, and enclosures.
2. Disconnect switches.
3. Contactors.
4. Clock/program master equipment.

3.2 POWER AND CONTROL WIRE IDENTIFICATION

A. Provide wire markers on each conductor in panelboard gutters, pull boxes, outlet and junction boxes, and at load connection. Identify with branch circuit or feeder number for power and lighting circuits, and with control wire number as indicated on schematic and interconnection diagrams or equipment manufacturer's shop drawings for control wiring.

B. All wiring shall be labeled within 2 to 4 inches of terminations. Each end of a wire or cable shall be labeled as soon as it is terminated including wiring used for temporary purposes.

3.3 NAMEPLATE ENGRAVING

A. Provide nameplates of minimum letter height as scheduled below.

1. Panelboards, Switchboards and Motor Control Centers: 1 inch (25 mm); identify equipment designation. 1/2 inch (13 mm); identify voltage rating, source and room location of the source.
2. Equipment Enclosures: 1 inch (25 mm); identify equipment designation.
3. Individual Disconnect Switches: ½ inch (13 mm); identify source and load served.

3.4 PANELBOARD DIRECTORIES

A. Typed directories for panels must be covered with clear plastic, have a metal frame.

END OF SECTION 16075
SECTION 16120 – CONDUCTORS AND CABLES

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes building wires and cables and associated connectors, splices, and terminations for wiring systems rated 600 V and less.

B. Related Sections include the following:

1. Division 16080 Section "Electrical Testing and Inspecting”.
2. Division 16075 Section "Electrical identification”.
3. Division 16130 Section "Raceways and Boxes”.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Field Quality-Control Test Reports: From Contractor.

1.4 QUALITY ASSURANCE

A. Authority having Jurisdiction (AHJ) The organization, office, or individual responsible for approving equipment, materials, an installation, or a procedure.


C. Comply with NEIS “National Electrical Installation Standards”.

PART 2 – PRODUCTS

2.1 GENERAL

A. All wire shall be new, delivered to the site in unbroken cartons.

B. All conductors shall be copper.
C. Insulation shall have a 600 volt rating.

D. Conductors shall be solid for wire sizes #10 and smaller and stranded for sizes larger than #10.
   1. Stranded conductors may only be terminated with UL OR ETL Listed type terminations or methods: e.g. stranded conductors may not be wrapped around a terminal screw but must be terminated with a crimp type device or must be terminated in an approved back wired method.

2.2 MANUFACTURERS

A. In other Part 2 articles where subparagraph titles below introduce lists, the following requirements apply for product selection:
   1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the manufacturers specified.

2.3 CONDUCTORS AND CABLES

A. Available Manufacturers:
   2. General Cable Corporation.

B. Conductor Material: Copper complying with NEMA WC 5 or 7; stranded conductor.

C. Conductor Insulation Types: Type THHN-THWN and XHHW complying with NEMA WC 5 or 7.

2.4 CONNECTORS AND SPLICES

A. Available Manufacturers:
   1. AFC Cable Systems, Inc.
   2. AMP Incorporated/Tyco International.
   3. Hubbell/Anderson.
   4. O-Z/Gedney; EGS Electrical Group LLC.
   5. 3M Company; Electrical Products Division.

B. Description: Factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and service indicated.
   1. Split Bolt Connectors: Not acceptable.
   2. Solderless Pressure Connectors: High copper alloy terminal. May be used only for cable termination to equipment pads or terminals. Not approved for splicing.
4. All wire connectors used in underground or exterior pull boxes shall be gel filled twist connectors or a connector designed for damp and wet locations.
5. Mechanical Connectors: Bolted type tin-plated; high conductivity copper alloy; spacer between conductors; beveled cable entrances.
6. Compression (crimp) Connectors: Long barrel; seamless, tin-plated electrolytic copper tubing; internally beveled barrel ends. Connector shall be clearly marked with the wire size and type and proper number and location of crimps.

PART 3 – EXECUTION

3.1. GENERAL WIRING METHODS
A. All wire and cable shall be installed in conduit.
B. Do not use wire smaller than 12 AWG for power and lighting circuits unless shown otherwise.
C. All conductors shall be sized as shown on the drawings.
D. Make conductor lengths for parallel conductors equal.
E. Splice only in junction or outlet boxes.
F. Identify ALL low voltage, 600v and lower, wire per section 16075.
G. Neatly train and lace wiring inside boxes, equipment, and panelboards.

3.2. WIRING INSTALLATION IN RACEWAYS
A. Pull all conductors into a raceway at the same time. Use Listed wire pulling lubricant for pulling 4 AWG and larger wires and for other conditions when necessary.
B. Install wire in raceway after interior of building has been physically protected from the weather and all mechanical work likely to injure conductors has been completed.
C. Completely and thoroughly swab raceway system before installing conductors.
D. Place all conductors of a given circuit (this includes phase wires, neutral (if any), and ground conductor) in the same raceway. If parallel phase and/or neutral wires are used, then place an equal number of phase and neutral conductors in same raceway or cable.

3.3. WIRING CONNECTIONS AND TERMINATIONS
A. Splice only in accessible junction boxes.
B. Wire splices and taps shall be made firm, and adequate to carry the full current rating of the respective wire without soldering and without perceptible temperature rise.

C. All splices shall be so made that they have an electrical resistance not in excess of two feet (600 mm) of the conductor.

D. Use solderless spring type pressure connectors with insulating covers for wire splices and taps, 10 AWG and smaller.

E. Use mechanical or compression connectors for wire splices and taps, 8 AWG and larger. Tape uninsulated conductors and connectors with electrical tape to 150 percent of the insulation value of conductor.

F. Thoroughly clean wires before installing lugs and connectors.

G. At all splices and terminations, leave tails long enough to cut splice out and completely re-splice.

3.4 CONDUCTOR AND INSULATION APPLICATIONS

A. This Article provides examples of application requirements for conductors and cables. Edit to select wiring methods for the various environments in Project. Add other methods if required. Revise conductor insulation and cable type designations to suit Project condition, local code, and practice. Refer to NFPA 70 and to UL's "Electrical Construction Equipment Directory 1998" for additional application information about conductor sizes, insulation temperature ratings in cables, and product-use classifications and restrictions.

B. Service Entrance: Type XHHW, single conductors in raceway.

C. Feeders Concealed in Concrete, below Slabs-on-Grade, and in Crawlspace: Type THHN-THWN, single conductors in raceway.

D. Branch Circuits Concealed in Concrete and below Slabs-on-Grade: Type THHN-THWN, single conductors in raceway.

3.5 INSTALLATION

A. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.

B. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.

3.6 CONNECTIONS
A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

B. Make splices and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.

   1. Use oxide inhibitor in each splice and tap conductor for aluminum conductors.

C. Wiring at Outlets: Install conductor at each outlet, with at least 12 inches of slack.

3.7 FIELD QUALITY CONTROL

   A. Testing: Perform the following field quality-control testing:

   B. After installing conductors and cables and before electrical circuitry has been energized, test for compliance with requirements.

   C. Perform each electrical test and visual and mechanical inspection stated in NETA ATS, Section 7.3.1. Certify compliance with test parameters.

3.8 TEST REPORTS

   A. Prepare a written report to record the following:

   B. Test procedures used.

   C. Test results that comply with requirements.

   D. Test results that do not comply with requirements and corrective action taken to achieve compliance with requirements.

3.9 CONDUCTOR COLOR CODE

   A. Use colored insulation for color coding conductors 6 AWG and smaller.

   B. Use water and oil resistant colored plastic adhesive tape, 3/4 inch minimum width, for color coding conductor 4 AWG and larger. Manufacturer: 3M “Scotch 35”.

   C. Provide black conductor insulation where colored tape is used for color coding.

   D. Use the following color codes for AC power system conductors

       120/240V Single Phase
       Line 1: Black
       Line 2: Red
       Neutral: White
E. In existing facilities, change color coding of existing service, feeder, and major branch circuits (50 amps and larger) to match the above color code.

F. Provide color code for control conductors as indicated on equipment or control system manufacturer’s drawings.

END OF SECTION 16120
SECTION 16130 – RACEWAYS AND BOXES

PART 1 – GENERAL

1.1 RELATED DOCUMENTS
   A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
   B. The work under this section includes conduits, surface raceways, outlet boxes and pull boxes.

1.2 SUMMARY
   A. This Section includes raceways, fittings, and pull boxes for electrical wiring.

1.3 DEFINITIONS
   A. LFMC: Liquidtight flexible metal conduit.
   B. RNC: Rigid nonmetallic conduit.
   C. RSC: Rigid steel conduit

1.4 SUBMITTALS
   A. Product Data: For raceways, wireways and fittings and hinged-cover enclosures.

1.5 QUALITY ASSURANCE
   A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
   C. Authority having Jurisdiction (AHJ). The organization, office, or individual responsible for approving equipment, materials, an installation, or a procedure.
   D. Comply with NEIS “National Electrical Installation Standards”.

1.6 COORDINATION
A. Coordinate layout and installation of raceways, boxes, enclosures with all existing utilities. Notify A/E of conflicts of devices or location and notify construction manager of discrepancies and direction to proceed.

B. Sequence, coordinate, and integrate installing electrical materials and equipment for efficient flow of the Work. Coordinate installing large equipment that requires positioning.

C. Coordinate electrical service connections to components furnished by utility companies.

1. Coordinate installation and connection of exterior underground and overhead utilities and services, including provision for service entrances and electricity-metering components.

D. Where electrical identification devices are applied to field-finished surfaces, coordinate installation of identification devices with completion of finished surface.

E. Review contract documents for location of sign equipment and shop drawings showing conduit entry and electrical requirements. Notify A/E of conflicts of devices or location and notify construction manager of discrepancies and authorization to proceed.

PART 2 – PRODUCTS

2.1 RACEWAYS

A. RIGID METAL CONDUIT AND FITTINGS (RGS)

1. Conduit: Heavy wall, galvanized steel, schedule 40, threaded.
2. Fittings and Conduit Bodies: Use all steel threaded fittings and conduit bodies.

B. LIQUIDTIGHT FLEXIBLE METAL CONDUIT AND FITTINGS

1. Conduit: flexible, steel, galvanized, spiral strip with an outer Liquidtight, nonmetallic, sunlight-resistant jacket.
2. Fittings and Conduit Bodies: ANSI/NEMA FB 1, compression type. There shall be a metallic cover/insert on the end of the conduit inside the connector housing to seal the cut conduit end.

C. RIGID NONMETALLIC CONDUIT AND FITTINGS

2. Fittings and Conduit Bodies: NEMA TC 2, Listed.

2.2 GENERAL

A. All conduits shall be new and free of rust when delivered to project site.

B. All conduits shall be stored per manufactures recommendations.
2.3 MANUFACTURERS

A. In other Part 2 articles where subparagraph titles below introduce lists, the following requirements apply for product selection:

1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the manufacturers specified.

2.4 METAL CONDUIT AND TUBING

A. Available Manufacturers:

1. Allied Tube Conduit
2. Wheatland Tube Co.
3. Picoma Industries
4. Republic Conduit

Liquidtite Flexible Conduit:

1. AFC Cable Systems, Inc.
2. Electri-Flex Co.
3. Alflex Inc.
4. Anaconda Metal Hose

B. Rigid Steel Conduit: ANSI C80.1.

C. LFMC: Flexible steel conduit with PVC jacket.

D. Fittings: NEMA FB 1; compatible with conduit and tubing materials.

2.5 NONMETALLIC CONDUIT AND TUBING

A. Available Manufacturers:

2. Carlon Electrical Products.
3. PW Eagle.
4. Cantex INC

B. RNC: NEMA TC 2, Schedule 40 and Schedule 80 PVC.

C. RNC Fittings: NEMA TC 3; match to conduit or tubing type and material.

2.7 PULL BOXES

A. Coordination of Box Location
1. Provide electrical pull boxes as shown on Drawings, and as required for splices, taps, wire pulling, equipment connections, and code compliance.
2. Electrical box locations shown on Contract Drawings are approximate unless dimensioned.
3. No pull boxes shall be located where it will be obstructed by other equipment, etc.

B. Available Manufacturers:

1. Steel City; Thomas and Betts
2. RACO; Division of Hubbell, Inc.
3. O-Z/Gender; Unit of General Signal.
4. Cooper Crouse-Hinds; Div. of Cooper Industries, Inc.
5. Emerson/General Signal; Appleton Electric Company.
7. Scott Fetzer Co.; Adalet-PLM Division.
8. Quazite; Division of Hubbell, Inc

D. Cast-Metal Outlet and Device Boxes: NEMA FB 1, Type FD, with gasketed cover.

1. Cast Boxes: Cast ferroalloy, or aluminum type deep type, gasketed cover, threaded hubs.

PART 3 – EXECUTION

3.1 RACEWAY APPLICATION

A. General

1. Arrange conduit supports to prevent distortion of alignment by wire pulling operations. Fasten conduit using galvanized pipe straps, conduit racks (lay-in adjustable hangers), clevis hangers, or bolted split stamped galvanized hangers.
2. Group conduit in parallel runs where practical and use conduit rack (lay-in adjustable hangers) constructed of steel channel with conduit straps or clamps. Provide space for 25 percent additional conduit.
3. Do not fasten conduit with wire or perforated pipe straps.
4. Support and fasten metal conduit at a maximum of 8 feet (2.4 m) on center.
5. Changes in direction shall be made with symmetrical bends.
6. All conduits installed in exposed areas shall be installed with a box offset before entering box.

B. Outdoors:

1. Exposed: Rigid steel (RGS).
2. Underground, Single Run: RNC.
3. Underground, Grouped: RNC.
4. Connection to Equipment: LFMC.
5. Boxes and Enclosures: NEMA 250, Type 3R.

C. Minimum Raceway Size: 3/4-inch trade size (DN 21).
D. Raceway Fittings: Compatible with raceways and suitable for use and location.

3.2 INSTALLATION

A. Complete raceway installation before starting conductor installation.

B. Support raceways as specified in Division 16 Section "Basic Electrical Materials and Methods."

C. Install temporary closures to prevent foreign matter from entering raceways.

D. Make bends and offsets so ID is not reduced. Keep legs of bends in the same plane and keep straight legs of offsets parallel, unless otherwise indicated.

E. Install exposed raceways parallel or at right angles to run parallel with nearby surfaces or structural members and follow surface contours as much as possible.

1. Run parallel or banked raceways together on common supports.
2. Make parallel bends in parallel or banked runs. Use factory elbows only where elbows can be installed parallel; otherwise, provide field bends for parallel raceways.

G. Join raceways with fittings designed and approved for that purpose and make joints tight.

1. Use insulating bushings to protect conductors.

H. Tighten of threadless fittings with suitable tools.

I. Terminations:

1. Where raceways are terminated with locknuts and bushings, align raceways to enter squarely and install locknuts with dished part against box. Use two locknuts, one inside and one outside box.
2. Where raceways are terminated with threaded hubs, screw raceways or fittings tightly into hub so end bears against wire protection shoulder. Where chase nipples are used, align raceways so coupling is square to box; tighten chase nipple so no threads are exposed.

3.3 OUTLET BOX INSTALLATION

A. Support boxes independently of conduit except for cast boxes that are connected to two rigid metal conduits, both supported within 12 inches (300 mm) of box.

B. Provide cast ferroalloy or aluminum outlet boxes in exterior and wet locations.

3.4 PULL AND JUNCTION BOX INSTALLATION
A. Support pull and junction boxes independent of conduit.

3.5 CLEANING

A. After completing installation of exposed, factory-finished raceways and boxes, inspect exposed finishes and clean and repair damaged finishes.

END OF SECTION 16130
SECTION 16140 - WIRING DEVICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

   A. This Section includes the following:

      1. Duplex, ground-fault circuit interrupter receptacles.

1.3 DEFINITIONS

   A. GFCI: Ground-fault circuit interrupter.

1.4 SUBMITTALS

   A. Product Data: For each type of product indicated.

   B. Shop Drawings:

   C. Description of materials.

   D. Field quality-control test reports.

1.5 QUALITY ASSURANCE

   A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by testing acceptable to authorities having jurisdiction, and marked for intended use.


   C. Authority having Jurisdiction (AHJ) The organization, office, or individual responsible for approving equipment, materials, an installation, or a procedure.

   D. Comply with NEIS “National Electrical Installation Standards”.

PART 2 – PRODUCTS
GENERAL
A. All devices shall be new, delivered to the project site in unbroken cartons.
B. Devices shall be stored in dry place and protected from damage.
C. Devices shall be left in their protective cover until ready for installation.

2.1 MANUFACTURERS
A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Wiring Devices:
   a. Hubbell Incorporated; Wiring Device-Kellems.
   b. Leviton Mfg. Company Inc.
   c. Pass & Seymour/Legrand; Wiring Devices Div.
   d. Cooper Wiring Devices: Arrow Hart

2.2 RECEPTACLES
A. GFCI Receptacles: Straight blade, non-feed-through type, Heavy-Duty grade, with integral NEMA WD 6, Configuration 5-20R duplex receptacle; complying with UL 498 and UL 943.

2.3 FINISHES
A. Color:
   1. Wiring Devices Connected to Normal Power System: Brown, unless otherwise indicated.

PART 3 – EXECUTION

3.1 INSTALLATION

3.2 FIELD QUALITY CONTROL
A. Perform the following field tests and inspections and prepare test reports:
   1. After installing wiring devices and after electrical circuitry has been energized, test for proper polarity, ground continuity, and compliance with requirements.
   2. Test GFCI operation with both local and remote fault simulations according to manufacturer's written instructions.
B. Remove malfunctioning units, replace with new units, and retest as specified above.

END OF SECTION 16140
SECTION 16289 – TRANSIENT VOLTAGE SURGE SUPPRESSION PROTECTIVE DEVICE

PART 1 - GENERAL

1.1 SCOPE

A. This section includes SPD for low-voltage power, control and telecommunications equipment.

1.2 RELATED DOCUMENTS

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

B. Other sections that may relate to the work in this section include, but are not limited to, the following:
   1. Section 16442 – Panelboards

1.3 SUBMITTALS

A. Submit shop drawings and product information for approval and final documentation in the quantities listed according to the Conditions of the Contract. All transmittals shall be identified by customer name, customer location, and customer order number.

B. Submittals shall include UL 1449 3rd Edition:
   1. Short Circuit Current Rating (SCCR)
   2. Voltage Protection Ratings (VPRs) for all modes
   3. Maximum Continuous Operating Voltage rating (MCOV)
   4. I-nominal rating (I-n)
   5. SPD shall be UL listed and labeled as Type 1 or Type 4 intended for Type 1 or Type 2 applications

C. Minimum of ten (10) year warranty

1.4 RELATED STANDARDS

A. IEEE C62.41.1, IEEE Guide on the Surge Environment in Low-Voltage (1000 V and Less) AC Power Circuits,

B. IEEE C62.41.2, IEEE Recommended Practice on Characterization of Surges in Low-Voltage (1000 V and Less) AC Power Circuits,

D. National Electrical Code: Article 285

E. UL 1283 - Electromagnetic Interference Filters


1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: Engage a firm with at least 10 years experience in manufacturing transient voltage surge suppressors.

B. Manufacturer shall be ISO 9001 or 9002 certified.

C. The manufacturer of this equipment shall have produced similar electrical equipment for a minimum period of ten (10) years. When requested by the Engineer, an acceptable list of installations with similar equipment shall be provided demonstrating compliance with this requirement.

D. The SPD shall be compliant with the Restriction of Hazardous Substances (RoHS) Directive 2002/95/EC.

E. Source Limitations: Obtain suppression devices and accessories through one source from a single manufacture.

1.6 DELIVERY, STORAGE AND HANDLING

A. Handle and store equipment in accordance with manufacturer’s Installation and Maintenance Manuals. One (1) copy of this document to be provided with the equipment at time of shipment.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Provide an internally mounted Surge Protective Devices (SPD) formally called Transient Voltage Suppressor (TVSS) by:

2. General Electric (GE)
3. Square D CO
4. Liebert Corp

2.2 ELECTRICAL DISTRIBUTION EQUIPMENT
A. Electrical Requirements

1. Maximum Single Impulse Surge Current Rating shall be based on the testing of a complete SPD, including fuses and all components that make up the SPD assembly using an IEEE C62.41, 8x20us current wave applied at the maximum, per mode rated value of the SPD. Devices that derive a per mode rating by adding test results of individual components are not acceptable.

2. Surge Life Rating shall be determined by, the application of an 8x20us, 10kA short circuit Category C High test waveform across the SPD as defined by ANSI/IEEE C62.41.2-2002. The test wave shall be injected at one-minute intervals until the conclusion of the test or device failure. A failure is defined as either performance degradation or more than 10% deviation of clamping voltage at the specified surge current.

3. Surge Current Ratings shall be as follows:
   a. Service Entrance Locations

   Maximum Single Impulse Surge Current Rating: 125kA per mode.
   UL 1449 Nominal Discharge Current Rating (In): 20kA
   Minimum Surge Life Rating: 20,000 IEEE C62.41 C-High (C3) impulses

   Distribution Locations

   Maximum Single Impulse Surge Current Rating: 80kA per mode.
   UL 1449 Nominal Discharge Current Rating (In): 20kA
   Minimum Surge Life Rating: 5,000 IEEE C62.41 C-High (C3) impulses

4. The UL assigned Voltage Protection Rating (VPR) shall be tested in accordance with UL 1449, 3rd Edition. Where an integral disconnect is provided, the VPR shall be determined with the integral disconnect included. The VPR rating shall not exceed the values of the following tables.
   a. UL 1449 3rd Edition Voltage Protection Ratings (VPR) with integral disconnect.

<table>
<thead>
<tr>
<th>SPD Voltage Rating</th>
<th>System Configuration</th>
<th>L-N</th>
<th>N-G</th>
<th>L-G</th>
<th>L-L</th>
</tr>
</thead>
<tbody>
<tr>
<td>120/208-240</td>
<td>WYE (or) Single-Split Phase</td>
<td>900</td>
<td>900</td>
<td>900</td>
<td>1200</td>
</tr>
<tr>
<td>277/480</td>
<td>WYE</td>
<td>900</td>
<td>900</td>
<td>900</td>
<td>1200</td>
</tr>
<tr>
<td>347/600</td>
<td>WYE</td>
<td>1500</td>
<td>1500</td>
<td>1500</td>
<td>2000</td>
</tr>
<tr>
<td>240</td>
<td>Delta</td>
<td>1500</td>
<td>1500</td>
<td>1500</td>
<td>3000</td>
</tr>
<tr>
<td>480</td>
<td>Delta</td>
<td>1500</td>
<td></td>
<td></td>
<td>2000</td>
</tr>
</tbody>
</table>

1) SPD Emission Ratings
   Audible Noise: No Audible Noise
   Surface Temperature: less than 55°C

2) General Performance and Design Requirements
SPD shall be UL witness tested to a fault current rating equal to or greater than the fault current rating of the distribution equipment. The SPD short-circuit current (SCCR) rating shall be marked on the SPD in accordance with the requirements of UL 1449 and NEC Article 285.

3) The use of smaller, electronic grade (<40mm) MOVs is not acceptable. SPDs that use gas tubes, silicon avalanche diodes or selenium rectifiers or combinations of these components along with MOVs are not acceptable.

4) SPDs shall provide protection in each of the following modes: L-N, L-G, N-G, and L-L for WYE Systems. L-G and L-L for Delta Systems.

5) The Maximum Continuous Operating Voltage (MCOV) for all voltage configurations shall be at least 115% of nominal on 480/277 volt systems and 125% of nominal on 240-208/120 volt systems.

6) EMI/RFI Noise Suppression: -50 dB attenuation at 100 kHz, tested per MIL-STD 220B.

7) The SPD fusing system shall be capable of allowing the rated Maximum Single Impulse Surge Current to pass without premature fuse operation. SPDs utilizing a fusing system that opens at or below the Maximum Single Impulse Surge Current rating are unacceptable.

8) SPDs shall include integral fusing for each suppression component. Designs that rely solely on an electrical panel’s main breaker to interrupt fault currents resulting from a shorted suppression component are not allowed.

9) The use of plug-in type suppression modules is not allowed.

10) SPDs installed in main switchgear, switchboards, or other service entrance locations shall have an integral non-fused disconnect, independently tested to the maximum surge current rating of the device. SPDs installed in distribution or branch panel locations shall be either direct connected to the main bus or via a dedicated branch breaker.

11) Standard Monitoring
   a) Features Green LED operational status indicator per each protected phase.
   b) Audible alarm with Red LED alarm status indicator and test / silence switch, enabled via a front panel pushbutton switch.
   c) Dry contacts for remote monitoring purposes, 1NO & 1NC contact.
   d) Change in state indicated on MOV failure.
   c) Six-Digit Digital Surge Event Counter with battery backup.
   f) SPDs shall be factory-mounted integral to the electrical distribution equipment and shall not violate the equipment manufacturer’s UL label.

PART 3 - EXECUTION
3.1 INSTALLATION
   A. Install per manufacturer’s recommendations and contract documents.

3.2 ADJUSTMENTS AND CLEANING
   A. Remove debris from installation site and wipe dust and dirt from all components.
   B. Repaint marred and scratched surfaces with touch up paint to match original finish.

3.3 TESTING
   A. Check tightness of all accessible mechanical and electrical connections to assure they are torqued to the minimum acceptable manufacture’s recommendations.
   B. Check all installed panels for proper grounding, fastening and alignment.

3.4 WARRANTY
   A. Equipment manufacturer warrants that all goods supplied are free of non-conformities in workmanship and materials for TEN year from date of initial operation, but not more than eighteen months from date of shipment.

END OF SECTION 16289
SECTION 16442 - PANELBOARDS

PART 1 - GENERAL

1.1 SCOPE

A. The requirements of the Contract, Division 16 applies to work in this section. Panelboards as Specified and as shown on the contract drawings shall be furnished and installed by the Contractor.

1.2 RELATED DOCUMENTS

A. Related Sections include the following:

1. Section 16289 - Transient-Voltage Suppression For Low-Voltage Electrical Power Circuits

1.3 SUBMITTALS

A. The manufacturer shall provide the following information for review and evaluation by the Engineer:

1. Shop Drawings showing circuit breaker, dimensions, voltage, phasing, continuous current capacity, and short circuit rating.
2. Conduit entry location, cable termination sizes, mounting.

B. Contractor shall provide final, as-built drawings, recording the actual circuiting of panels. Installation, Operation and Maintenance manuals shall be supplied.

1.4 RELATED STANDARDS

A. The panelboards and circuit protection devices shall be manufactured and tested according to the latest applicable standards of the following agencies:

1. UL 50, Enclosures and Electrical Equipment
2. UL 67, Panelboards
3. UL 489, Molded Case Circuit Breakers and Circuit Breaker Enclosures
4. UL 943, Ground Fault Circuit Interrupters
5. NEMA PB1, Panelboards
6. NEMA PB1.1, General Instructions for Proper Installation, Operation and Maintenance of Panelboards Rated 600 Volts or less.
7. NEMA AB1, Molded Case Circuit Breakers and Molded Case Switches
9. ANSI/NFPA 70, National Electric Code
10. ANSI/NEMA KS1, Enclosed and Miscellaneous Distribution Equipment Switches (600V)
1.5 QUALITY ASSURANCE

A. The Panelboard manufacturer shall also be the manufacturer of the circuit breakers and fusible switches.

B. Manufacturer shall have produced similar electrical equipment for a minimum period of 10 years.


D. Authority having Jurisdiction (AHJ). The organization, office, or individual responsible for approving equipment, materials, an installation, or a procedure.

E. Comply with NEIS “National Electrical Installation Standards”.

1.6 DELIVERY, STORAGE AND HANDLING

A. Handle and store equipment in accordance with manufacturer’s Installation and Maintenance Manuals. One (1) copy of this document to be provided with the equipment at time of shipment.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Approved manufacturers are as follows:
   1. Square D
   2. Cutler-Hammer
   3. Siemens

2.2 COMPONENTS

A. Panelboards shall be as shown on the drawings. Refer to drawings for details regarding location of components, voltage and current rating of devices and other required details. Suitable for use as Service Entrance given compliance with NEC.

B. Bussing
   1. Copper sized in accordance with UL 67 standards for temperature rise.

C. Ground Bars
   1. A non-insulated copper equipment ground bar will be provided.

D. Neutrals
   1. Neutral bussing shall have a lug for each outgoing branch requiring a neutral connection; load side neutral connection lugs to be split with each side taking 50% of load neutral connections.
E Enclosure

1 Boxes shall be fabricated from galvanized, galvaneal steel or protected against corrosion per the requirements of NEMA 250 and UL 50.

2. Surfaces of the trim shall be properly cleaned and painted gray ANSI 61.

F. Trims

Trims be surface. It shall be fabricated from cold-rolled steel, painted with an ANSI-61 light gray finish and equipped with concealed hinges, flush lock and circuit directory cardholder. Trim shall have two separate supports designed to engage the box flange to stabilize and secure the trim during installation. Trim screws to be located behind the lockable door for tamper resistance. Optional trims may be hinged to the box, door in door.

G. Circuit Breakers

1 Molded case circuit breakers shall be bolt-on devices. Short circuit rating shall be amperes symmetrical based on the smallest rating on any circuit breaker installed in the panel and as shown on the drawings, but not less than 22kaic at 240 VAC.

2 Molded case circuit breakers shall be thermal-magnetic, quick-make, quick-break, trip free. Provide circuit breaker accessories as indicated on the drawings or panel schedules.

H. Transient Voltage Surge Suppression

1 If indicated on drawings, a TVSS shall be installed with a direct bus connection for low clamping and without utilizing any circuit breaker positions. It shall be listed in accordance with UL 67, 1283 and 1449. Designed and tested in accordance with ANSI/IEEE C62.45 and C62.41.
   a. Surge capacity shall be 120kA per phase.
   b. Factory installed TVSS units shall be available for mounting in unit space on panels.
   c. 5 year warranty with LED indicators for immediate status monitoring. Audible alarm with silencing switch and test button.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install per manufacturer’s recommendations and contract documents.

B. Install units plumb, level and rigid without distortion

3.2 ADJUSTMENTS AND CLEANING

A. Remove debris from panelboards and wipe dust and dirt from all components.
B. Repaint marred and scratched surfaces with touch up paint to match original finish.

3.3 TESTING

A. Check tightness of all accessible mechanical and electrical connections to assure they are torqued to the minimum acceptable manufacture’s recommendations.

B. Check all installed panels for proper grounding, fastening and alignment.

3.4 WARRANTY

A. Equipment manufacturer warrants that all goods supplied are free of non-conformities in workmanship and materials for one year from date of initial operation, but not more than eighteen months from date of shipment.

END OF SECTION 16442