PROJECT MANUAL
FOR
CITY OF LYNCHBURG
REISSUED

LCS STAGE UPGRADES
E. C. GLASS H.S.

BID: REISSUED 14-916

December 2014

PROCUREMENT DIVISION
3RD FLOOR CITY HALL
900 CHURCH STREET
LYNCHBURG, VA 24504
TELEPHONE (434) 455-3970
FAX (434) 845-0711

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ADVERTISEMENT FOR BIDS

Sealed bids for **REISSUED LCS Stage Upgrades E.C. Glass H. S.** will be received by the City of Lynchburg, Procurement Division, City Hall, Lynchburg, VA, until **3:00 p.m**., **February 12, 2015** and then publicly opened and read, in the Bidder's Room, Third Floor, City Hall.

This project includes: Upgrades of lighting, sound system and stage rigging.

A **Mandatory** Pre Bid meeting will be held on **January 27, 2015 at 2:00 p.m.** located in the Bidders Room 3rd Floor City Hall 900 Church St. Lynchburg, VA. This meeting can be attended in person or via conference call. If you cannot attend the meeting in person, but would like to attend via the conference call, you will need to contact Lisa Moss via email at lisa.moss@lynchburgva.gov , **no later than January 22, 2015.** A responding email will be sent with the conference call information and code.

The Project Manual and Drawings for this project may be viewed and downloaded from the City's website:. http://www.lynchburgva.gov/current-solicitations

All requests for clarification of or questions regarding this Advertisement for Bids or for additional information must be made in writing, by facsimile (434) 845-0711 or email to lisa.moss@lynchburgva.gov and received by 9:00 a.m., February 3, 2015. All posted clarifications or addenda must be signed and accompany any bid submitted.

BID FORM

Lisa Moss
Buyer-Procurement Division
City of Lynchburg
Third Floor, City Hall
900 Church Street
Lynchburg, Virginia 24504

Dear Ms. Moss:

The undersigned, as bidder, hereby declares that the only persons interested in this bid as principal, or principals, is or are named herein and that no person other than herein mentioned has any interest in this bid or in the Construction Agreement to be entered into; that this bid is made without connection with any other person, company, or parties making a bid; and that it is in all respects fair and in good faith, without collusion or fraud.

The undersigned, having visited and examined the site and having carefully studied all the Contract Documents, including without limitation, all drawings and specifications pertaining to **REISSUED LCS Stage Upgrades E. C. Glass H. S.**" for the City of Lynchburg, Virginia, hereby proposes to furnish all labor, equipment, materials, and services and to perform all operations necessary to execute and complete the Work required for the project, in strict accordance with the Contract Documents, and the Project Manual together with Addenda numbered __ through _____ issued during bidding period and hereby acknowledged, subject to the terms and conditions of the Construction Agreement

TOTAL BID A: RIGGING SYSTEM: $_____

TOTAL BID B: LIGHTING, PUBLIC ADDRESS, VIDEO: $_____

TOTAL BID (PROJECT A & B): $_____

*****CONTRACTOR MAY BID ON INDIVIDUAL PROJECT OR TOTAL PROJECT. LCS RESERVES THE RIGHT TO AWARD PER PROJECT OR AS A TOTAL *****

Add Alternate #1 - Provide a new pit cover platform system. Shown on drawings TR-109 and TR-110. Drawing titles are prefixed with "ADD ALTERNATE #1". Spec section 116123 is pit filler only.

TOTAL ADD ALTERNATE #1: $_____

Add Alternate #2 - Move existing linesets to new locations. Shown on drawing TR-111. Drawing title is prefixed with "ADD ALTERNATE #2". Spec section 116133 is stage rigging. This spec section now has a "WORK INCLUDED - BASE BID" heading and a "WORK INCLUDED - ADD ALTERNATE #2" heading.

TOTAL ADD ALTERNATE #2: $_____

All Alternate #3 - Provide a new video system. Shown on drawing TS-104. Drawing title is prefixed with "ADD ALTERNATE #3". Spec section 274116 Theatre AV. This specification section now has a "WORK INCLUDED - BASE BID" heading and a "WORK INCLUDED - ADD ALTERNATE #3" heading.

TOTALADD ALTERNATE #3: $_____

**NOTE: THERE IS NO GUARANTEE OF AWARD OF ALTERNATES. **

It is understood and agreed that the Owner, in protecting its best interests, reserves the right to reject any or all bids or waive any defects. Any changes, erasures, modifications, deletions in the bid form, or alternate proposals not specified in the Advertisement for Bids may make the bid irregular and subject to rejection.

If the Construction Agreement is for a lump sum price, unless clearly and specifically indicated otherwise in the Contract Documents, all unit prices only apply to changes in the Work. The listed bid items are to contain all necessary costs required for completion of the Work in accordance with the Contract Documents.

If the Construction Agreement is for unit prices and not for a lump sum price, it is understood that all quantities listed on the following pages are estimated quantities, and the Owner reserves the right to raise, lower, or eliminate any quantity or item, and in any case, the unit prices shall be used in determining partial and final payment. It is further understood that costs to cover all components of the Work as described in the Contract Documents are included in this bid, even in cases where specific line items are not identified.

We are properly equipped to execute all work of the character and extent required by the Contract Documents, and we will enter into the Construction Agreement for the execution and completion of the Work in accordance with the Contract Documents; and we further agree that, if awarded the Construction Agreement, we will commence the Work on the date stated in the "Notice to Proceed" and will maintain a work force large enough to execute the Work and all obligations no later than the completion date stated in the Contract Documents.

Enclosed herewith is the following Security, offered as assurance that the undersigned will enter into the Construction Agreement for the execution and completion of the Work in accordance with the Contract Documents:

Bidder's Certified Check issued by_____(name of bank) in the amount of:

$ _____ (5% of Base Bid amount)

Bidder's Bid Bond for 5% of Base Bid Amount Issued by _____
(name of surety authorized to do business in Virginia).

The undersigned hereby agrees, if awarded the Construction Agreement, to execute and deliver to the City within ten (10) days after his receipt of the Notice of Award, a performance bond and a payment bond, in forms satisfactory to the City, from sureties authorized to do business in Virginia satisfactory to the City, in the amount of one hundred (100) percent of the Base Bid.

The undersigned further agrees that, in case of failure on his part to execute the said Construction Agreement within the ten (10) days after written notice being given on the award of the Construction Agreement or the failure to deliver the required performance and payment bonds within the ten (10) days, the monies payable by the Security accompanying this bid shall be paid to the City of Lynchburg, Virginia, as liquidated damages for such failure; otherwise the Security accompanying this Bid shall be returned to the undersigned.

Attached herewith are completed Statement of Experience and Statement of Resources forms which include the information requested.

The undersigned further certifies that this bid is not the result of, or affected by, any act of collusion with another person engaged in the same line of business, or any act punishable under the Virginia Governmental Frauds Act, or other law.

This bid remains valid and may not be withdrawn for a period of 60 days from this date.

CURRENT VIRGINIA CLASS A CONTRACTOR'S LICENSE/ REGISTRATION NO.:_____

Respectfully submitted,

_____
CONTRACTOR

_____
DATE

_____

_____
ADDRESS

BY:_____

ITS:_____
(Title)

ELECTION OF ESCROW ACCOUNT PROCEDURE FOR RETAINAGE

If determined to be the successful low bidder(s), the above signed elects to use the Escrow Account Procedure for retainage.

_____

Write “Yes” or “No” on above line

If the successful bidder elects to use the Escrow Account Procedure for Retainage, the "Escrow Agreement" form shall be executed and submitted to the City of Lynchburg Engineering Division within fifteen (15) calendar days after notification. If the "Escrow Agreement" form is not submitted within the fifteen (15) day period, the Contractor shall forfeit his rights to the use of the Escrow Account Procedure.

Company_____

Authorized Signature_____

EQUAL OPPORTUNITY REPORT STATEMENT

The Bidder shall complete the following statement by checking the appropriate blank as follows.

The Bidder has_____ has not _____ participated in a previous contract subject to the nondiscrimination clause prescribed by Executive Order 10925, dated March 6, 1961, or Executive Order 11114 dated June 22, 1963.

In conjunction with the City of Lynchburg's policy to utilize Minority and Disadvantaged Business Enterprises ("DBE") wherever possible, the Bidder has solicited quotations for labor, material and/or services from the following Minority and Disadvantaged Business Enterprises:

NAME OF FIRM	PERSON(S) CONTACTED	DATE

Of those listed above, we intend, at this time, to utilize the following in the completion of the Work required by this Construction Agreement:

_____

_____

_____

"This firm assures that it will give its best efforts to utilize Minority and Disadvantaged Business Enterprises whenever possible."

CERTIFIED BY: _____(Signature)

_____(Typed/Printed name & Title)

BIDDER'S NAME: _____

TAXPAYER IDENTIFICATION NUMBER:_____

_____This firm will perform all construction with its own employees and, therefore, is not required to solicit quotations from DBEs.

FAILURE TO DOCUMENT AND REPORT DBE CONTACTS ON THIS FORM MAY BE A BASIS FOR REJECTION OF THE BID AS NONCONFORMING.

STATEMENT OF EXPERIENCE

Proposer: _____

_____

How Long In Business:_____ At Current Address: _____

Principals: _____Title:_____

_____Title:_____

_____Title:_____

Type of Work Normally Performed:_____

_____

Projects of this type previously completed:

1._____

_____ Amount $_____

2._____

_____ Amount $_____

3._____

_____ Amount $_____

Reference (for Projects listed above):

1._____

_____ Tel.No._____

2._____

_____ Tel.No._____

3._____

_____ Tel No._____

STATEMENT OF AVAILABLE RESOURCES

Equipment:_____

_____

_____

Number of Personnel Currently Employed:_____

Number of Personnel Available for Project:_____

Other Pertinent Information:_____

_____

_____

_____

_____

_____

_____

_____

CORPORATE STATUS FORM

ALL PROSPECTIVE FIRMS MUST RESPOND TO THE FOLLOWING

If a limited liability company, limited liability partnership or a limited partnership, indicate by checking one: _____Limited liability company

_____Limited liability partnership

_____Limited partnership

Have you registered with the Virginia State Corporation Commission, to conduct business in Virginia?
☐ Yes ☐ No

Name and address of organizer: _____

_____

_____

_____

List who is authorized to execute contracts:

_____

If conducting business under an assumed (fictitious) business name, fill out the following information:

Names of persons or entities owning business using assumed business name:_____

Owners' addresses: _____

Registration date: _____ Expires: _____

If conducting business as a sole proprietorship, general partnership, or joint venture, fill out the following information:

Names of all persons liable for obligations of the business: _____

Addresses of such persons: _____

Questions to Bidders/Offerors

Bidders/Offerors are to respond to the following question: Have any of the individual(s), owner(s), and/or principal officer(s) of the firm submitting the bid/proposal ever been convicted of (1) a felony, or (2) a misdemeanor involving moral turpitude?

YES _____ NO _____

If yes, list individual or officer and title and give details.

_____

_____

_____

_____

_____

_____

_____

_____

NOTE: Answering yes to this question will not necessarily exclude your company from consideration but will be used to weigh the relationship between the offense and the contract to be performed.

Is your firm currently involved in litigation or a dispute involving arbitration?

YES _____ NO _____

If yes, for litigation list the litigation by case name, name of court, case number, and jurisdiction, and for arbitration, list the organization administering, if any, its contact information, any case number assigned, the arbitrators, and the location of the arbitration. For litigation and arbitration, briefly describe the claims and status, and give contact information for the opposing party or parties.

_____

_____

_____

_____

CONSTRUCTION AGREEMENT

This Construction Agreement (the "Contract") made and entered into on the _____ day of _____, 2015, by and between _____, party of the first part, hereinafter referred to as Contractor, and the City of Lynchburg, a municipal corporation of the Commonwealth of Virginia, party of the second part, hereinafter referred to as the Owner or City.

That the Contractor, for the consideration hereinafter fully set out, hereby agrees with the Owner as follows:

1. That the Contractor shall furnish all labor, materials, tools, and equipment and perform all Work required by the Contract Documents (as defined in the General Conditions hereto) for the **LCS Stage Upgrades E.C. Glass H.S.**

2. **That the Contractor shall commence work on June 8, 2015 and shall be substantially completed by August 7, 2015. Project shall be fully completed no later than August 21, 2015**. Owner and Contractor recognize that time is of the essence of this Contract and that the Owner will suffer financial loss if the Work is not completed within the times specified in the Notice to Proceed, plus any extensions thereof. They also recognize the delays, expense and difficulties involved in providing the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for certain losses Owner is expected to suffer due to delay (but not as a penalty) **Contractor shall pay three hundred dollars ($300.00) for each day that expires after the time specified for completion**. If the Contractor is subject to liquidated damages, the City has the right, but not the obligation, to withhold the liquidated damages from the Contractor's regular payments or retainage. Rights and obligations relating to these liquidated damages are set out more fully in the General Conditions.

3. The Owner hereby agrees to pay the Contractor for the faithful performance of this Contract in accordance with the Contract Documents, subject to additions and deductions as provided in the Contract Documents, in lawful money of the United States, as follows:

_____Dollars

($_____)

4. The Owner shall make partial payment on a monthly basis to the Contractor in accordance with the Contract Documents on the basis of a duly certified and approved estimate of work performed during the preceding calendar month by the Contractor, less five percent (5%) of the amount of such estimate which may be retained by the Owner until all Work has been performed strictly in accordance with the Contract Documents and until such Work has been accepted by the Owner.

5. Within ninety (90) days after submission by the Contractor of evidence satisfactory to the Owner that all payrolls, material bills and other costs incurred by the Contractor in connection with the construction of the Work have been paid in full, satisfaction of all the requirements of the Contract Documents, and acceptance of such Work by the Owner, final payment on account of this Contract shall be made.

6. It is further mutually agreed between the parties hereto that if, at any time after the execution of this Contract, the performance bond provided for its faithful performance and the payment bond, the Owner shall deem the surety or sureties upon such bonds or either of them to be unsatisfactory, or if for

any reason, such bonds cease to be adequate to cover the performance of the Work, the Contractor shall, at his own sole expense, within five (5) days after the receipt of Notice from the Owner so to do, furnish an additional bond or bonds in such form and amount, and with such surety or sureties as shall be satisfactory to the Owner. In such event, no further payment to the Contractor shall be deemed to be due under this Contract until such new or additional security for the faithful performance of the Work shall be furnished in manner and form satisfactory to the Owner.

7. Contractor agrees to fulfill all requirements of state, Federal, and municipal laws which may be applicable to this project.

8. This Contract is subject to the General Conditions accompanying it, and all the documents defined by the General Conditions to be the Contract Documents are a part of this Contract.

This Contact is executed in two counterparts, each of which shall, without proof or accounting for the other counterparts, be deemed an original contract.

IN WITNESS WHEREOF, _____ has caused its name to be subscribed to this Contract by _____, its _____, and its corporate seal to be hereunto affixed and attested by _____, its _____, said officers being duly authorized therefore; and the City of Lynchburg has caused its name to be hereunto subscribed by S. Brabrand, Superintendent and its corporate seal to be hereunto affixed and attested by Wendy Sullivan, Clerk of School Board, said officers being duly authorized therefore, all as to the day and year first above written.

CONTRACTOR

BY: _____

ITS: _____

(SEAL)

_____

ATTEST:

_____

Lynchburg City Schools

(SEAL)

BY: _____

Superintendent

_____

ATTEST:

_____

Clerk of School Board

CITY OF LYNCHBURG, VIRGINIA
STANDARD PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: That_____ _____, the Contractor ("Principal"), whose principal place of business is located at _____ _____and_____ _____("Surety"), are held and firmly bound unto the City of Lynchburg, 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, entered into a Construction Agreement with Obligee for certain work on a construction project known as REISSUED **LCS Stage Upgrades at E.C. Glass H.S.**, 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 and its Contract Documents, 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, extensions, 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_____, 2015.

_____(SEAL)
Contractor/Principal

By:_____

Witness:_____ Title:_____

_____(SEAL)
Surety

By:_____
Attorney -in-Fact

My Power of Attorney is recorded in the Clerks Office of the Circuit Court of_____,
Virginia in Deed Book_____, Page_____, and has not been revoked.

_____
Attorney-in-Fact

AFFIDAVIT AND ACKNOWLEDGEMENT OF ATTORNEY-IN-FACT

COMMONWEALTH OF VIRGINIA
(or, alternatively, Commonwealth or State of_____)

CITY/COUNTY OF_____to wit:

I, the undersigned notary public, do certify that_____personally appeared before me in the jurisdiction aforesaid and made oath that he is the attorney-in-fact of_____, the Surety, that he is duly authorized to execute on its behalf the aforesaid Bond(s) as its act and deed.
Given under my hand this_____day of_____2015 .

_____(SEAL)
Notary Public

My Commission expires:_____

APPROVED:

_____
City Attorney/Designee Date

CITY OF LYNCHBURG
STANDARD LABOR AND MATERIAL PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: That _____

_____, the Contractor ("Principal") whose principal

place of business is located at_____

_____and_____

_____("Surety") are held and firmly bound unto the City of Lynchburg,

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 Construction

Agreement, for LCS Stage Upgrades for E. C. Glass H.S., 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 and its Contract Documents, 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 therefore 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.

6. This bond is intended to comply with the requirements and to afford all the benefits of a payment bond consistent with the requirements of Virginia Code § 2-2-4337 and § 2-2-4341. To the extent that those sections as they are in effect as of the date of issuance of this bond confer any requirements on Principal or Surety, or confer any additional benefits on any claimant (as the term "claimant" is used within either the meaning of those sections or this bond), those requirements and benefits shall be deemed to be incorporated into and be part of this bond.

Signed and sealed this_____ day of_____.

_____(SEAL)
Contractor/ Principal

By:_____

Witness:_____ Title:_____

_____(SEAL)
Surety

By:_____
Attorney-in-Fact

Typed Name:_____

My Power of Attorney is recorded in the Clerks Office of the Circuit Court of_____ Virginia in Deed Book_____, Page_____, and has not been revoked.

_____
Attorney-in-Fact

AFFIDAVIT AND ACKNOWLEDGEMENT OF ATTORNEY-IN-FACT

COMMONWEALTH OF VIRGINIA

(or, alternatively, Commonwealth or State of_____)

CITY / COUNTY OF_____

I, the undersigned notary public, do certify that_____personally appeared before me in the jurisdiction aforesaid and made oath that he is the attorney-in-fact of _____, the Surety, that he is duly authorized to execute on its behalf the foregoing bond pursuant to the Power of Attorney noted above, and on behalf of said Surety, acknowledged the aforesaid bond(s) as its act and deed.

Given under my hand this_____day of _____.

_____(SEAL)

Notary Public

_____

My Commission expires:_____

APPROVED:

_____
City Attorney/Designee Date

ESCROW AGREEMENT

THIS AGREEMENT ("Agreement"), made and entered into this ____ day of _____, 2015 by,

between and among the City of Lynchburg ("City"), _____ ("Contractor"), and

_____

(Name of Bank)

_____

(Address of Bank)

a trust company, bank, or savings and loan institution with its principal office located in the Commonwealth of Virginia (hereinafter referred to as "Bank" or "Escrow Agent"), and _____

_____ ("Surety") provides:

I.

The City and the Contractor have entered into the Construction Agreement ("Contract") with respect to REISSUED **LCS Stage Upgrades at E. C. Glass H.S.** ("the Contract"). This Agreement is pursuant to, but in no way amends or modifies, the Contract. Payments made hereunder or the release of funds from escrow shall not be deemed approval or acceptance by the City of performance by the Contractor or Surety.

II.

In order to assure full and satisfactory performance by the Contractor of its obligations under the Contract, the City may, pursuant to the Contract Documents, retain certain amounts otherwise due the Contractor. The Contractor has, with the approval of the City, elected to have these retained amounts held in escrow by the Bank. This Agreement sets forth the terms of the escrow. The Bank shall not be deemed a party to, bound by, or required to inquire into the terms of, the Contract or any other instrument or agreement between the City and the Contractor.

III.

The City may from time to time pursuant to this Agreement pay to the Bank amounts retained by the City under the Contract. Except as to amounts actually withdrawn from escrow by the City, the Contractor shall look solely to the Bank for payment of funds retained under the Contract and paid by the City to the Bank.

The risk of loss by diminution of the principal of any funds invested under the terms of this Agreement shall be solely upon the Contractor.

Funds and securities held by the Bank pursuant to this Agreement shall not be subject to levy, garnishment, attachment, lien, or other process whatsoever. Contractor agrees not to assign, pledge, discount, sell or otherwise transfer or dispose of his interest in the escrow account or any part thereof, except to the Surety.

IV.

Upon receipt of checks or warrants drawn by the City's Director of Finance and made payable to it as escrow agent, the Bank shall promptly notify the Contractor, negotiate the same and deposit or invest and reinvest the proceeds in "Approved Securities" within the meaning of this Agreement in accordance with the written instruction of the Contractor. In no event shall the Bank invest the escrowed funds in any security that is not an "Approved Security."

V.

The following securities, and none other, are Approved Securities for all purposes of this Agreement:

(1) United States Treasury Bonds, United States Treasury Notes, United States Treasury Certificates of Indebtedness or United States Treasury Bills,

(2) Bonds, notes and other evidences of indebtedness unconditionally guaranteed as to the payment of principal and interest by the United States,

(3) Bonds or notes of the City,

(4) Bonds of any political subdivision of the City, if such bonds carried, at the time of purchase by the Bank or deposit by the Contractor, a Standard and Poor's or Moody's Investors Service rating of at least "A", and

(5) Certificates of deposit issued by commercial Banks located within the Commonwealth, including, but not limited to, those insured by the Bank and its affiliates,

(6) Any bonds, notes, or other evidences of indebtedness listed in Section (1) through (3) may be purchased pursuant to a repurchase agreement with a Bank, within or without the City ,having a combined capital, surplus and undivided profit of not less than $25,000,000 provided the obligation of the Bank to repurchase is within the time limitations established for investments as set forth herein. The repurchase agreement shall be considered a purchase of such securities even if title, and/or possession of such securities is not transferred to the Escrow Agent, so long as the repurchase obligation of the Bank is collaterized by the securities themselves, and the securities have on the date of the repurchase agreement a fair market value equal to at least 100 percent of the amount of the repurchase obligation of the Bank, and the securities are held by a third party, and segregated from other securities owned by the Bank.

No security is an Approved Security hereunder if it matures more than five years after the date of its purchase by the Bank or deposit by the Contractor.

VI.

The Contractor may from time to time withdraw the whole or any portion of the escrowed funds by depositing with the Bank Approved Securities in an amount equal to, or in excess of, the amount so withdrawn. Any securities so deposited or withdrawn shall be valued at such time of deposit or withdrawal at the lower of par or market value, the latter as determined by the Bank. Any securities so deposited shall thereupon become a part of the escrowed fund.

Upon receipt of a direction signed by the City's Director of Public Works or the City Engineer, the Director of Finance or the City Accountant shall authorize the Bank to pay the principal of the fund, or

any specified amount thereof, to the account of the City of Lynchburg. Such payment shall be made in cash as soon as is practicable after receipt of the direction.

Upon receipt of a direction signed by the City's Director of Public Works or the City Engineer, the Director of Finance or the City Accountant shall authorize the Bank to pay and deliver the principal of the fund, or any specified amount thereof, to the Contractor, in cash or in kind, as may be specified by the Contractor. Such payment and delivery shall be made as soon as is practicable after receipt of the direction.

VII.

For its services, hereunder the Bank shall be entitled to a reasonable fee in accordance with its published schedule of fees or as may be agreed upon by the Bank and the Contractor. Such fee and any other costs of administration of this Agreement shall be paid from the income earned upon the escrowed fund, and, if such income is not sufficient to pay the same, by the Contractor.

VIII.

The net income earned and received upon the principal of the escrowed fund shall first be paid or applied to pay the Bank's fee and any other costs of administration and such income shall be deemed a part of the principal of the fund. After all of the Bank's fees and other costs of administration have been paid from such income, the net income earned thereafter may then be paid over to Contractor in installments.

IX.

The Surety undertakes no obligation hereby but joins in this Agreement for the sole purpose of acknowledging that its obligations as surety for the Contractor's performance of the Contract are not affected hereby.

WITNESS the following signatures, all as of the day and year first above written.

CITY OF LYNCHBURG CONTRACTOR: _____

BY: _____ BY: _____

Superintendent Officer, Partner, or Owner (Seal)

SURETY:

By: _____

Its: President (Seal)

ATTEST:

_____
Secretary

By: _____
Attorney-in-Fact

AFFIDAVIT AND ACKNOWLEDGEMENT OF ATTORNEY-IN-FACT

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

I, the undersigned notary public, do certify that _____personally appeared before me in the jurisdiction aforesaid and made oath that he is the attorney-in-fact of _____, the Surety, that he is duly authorized to execute on its behalf the foregoing bond pursuant to the Power of Attorney noted above, and on behalf of said Surety, acknowledged the aforesaid bond(s) as its act and deed.
Given under my hand this_____day of _____.

_____(SEAL)
Notary Public

My Commission expires: _____

APPROVED:

_____
City Attorney/Designee Date

INSTRUCTIONS TO BIDDERS

DESCRIPTION OF WORK
The Work included under this Contract shall consist of all labor, materials, equipment, and the performance of all work necessary to complete the project known as "REISSUED LCS STAGE UPGRADES AT E.C. GLASS H.S." as described in the Contract Documents. This Work shall be performed in accordance with the Contract Documents.

1. General: Subject to Owner's right to waive informalities, to be valid for consideration, bids must be completed and submitted in accordance with these instructions to bidders. All individual bid unit price items must be filled in, regardless of the quantity shown.

2. The Project Manual and Drawings for this project may be viewed and downloaded from the City's website:.

   The successful bidder shall be issued, without charge, five sets of sets of plans and specifications.

   Bidding documents will be provided as indicated in the Advertisement for Bids.

3. Qualification of Bidders: Each bidder must be prepared to submit within five calendar days of the Owner's request written evidence of his qualifications for the project, including, without limitation, financial data, previous experience, resources, personnel and evidence of authority to conduct business in the jurisdiction where the project is located.

4. Examination of Bid Documents and Site:

   4.1 Before submitting bids, each bidder must examine bid documents, including, without limitation, all the Contract Documents, thoroughly; familiarize himself with Federal, state and local laws, ordinances, rules, codes, and regulations affecting the Work; and correlate his observations with requirements of the bid documents.

   4.2 Bidders are requested and expected to visit the site of the project to alert themselves to local and special conditions which may be encountered during construction of the project such as: labor and transportation, handling and storage of materials, the availability of materials, and site access. Failure to make such investigations shall not relieve the successful bidder from performing and completing the Work in accordance with the Contract Documents.

5. Clarification:

   5.1 No oral clarification of the bid documents will be made to any bidder. To be given consideration, requests for clarification must be received in time to allow preparation of a written response at least seven (7) days prior to date fixed for opening of bids. Clarifications will be issued in the form of written addenda to the bid documents and posted to the Procurement Website within five (5) days of the bid opening. Only clarifications by formal written addenda will be binding.

   (1) All communications in regard to clarifications and any other matters related to this project shall be addressed to: Lisa Moss, Procurement Division, 900 Church Street, Lynchburg, VA 24504, Fax: 434-845-0711, email: lisa.moss@lynchburgva.gov.

6. Substitutions:

6.1 Substitutions of material or equipment or both may be offered by the Contractor with his bid, provided that, if approved:

a. No major changes in the construction or design intent of the project would be required. Changes required to accommodate substituted items shall be made by the Contractor at no additional cost or time delay.

b. Features of quality, capacity, construction, performance, appearance, size, arrangement, and general utility, including economy of operation of substitutes offered, either parallel or exceed those of specified products.

c. The provisions of the General Conditions are met, and the provisions of the General Conditions any other guarantees, if required by the specification sections, shall apply in full force and effect to the performance of such substitute products~~,~~ approved for incorporation into the Work.

6.2 Technical data covering the proposed substitution shall be furnished with the bid when possible, and not later than 10 days after bid submission.

7. Bid Submission:

7.1 Submit bids using forms furnished in the Project Manual and fill in all blank spaces on the form. Repeat notation "Contractor's Current Virginia License No._____" on outside of inner envelope containing bid and bid security, and place this envelope within another envelope addressed to:

City of Lynchburg
Procurement Division
900 Church Street
Third Floor, City Hall
Lynchburg, VA 24504

Bidders shall include the following with their bid submission:

- Bid Form
- Statement of Experience
- Statement of Available Resources
- Equal Opportunity Report Statement
- Corporate Status Form
- Questions to Offeror Form
- Bid Bond or Cashiers Check Equivalent

7.2 Both the inner and outer envelopes shall have noted thereon:

a. "Sealed Bid 14-916 REISSUED LCS Stage Upgrades E. C. Glass High School

b. The bidder's name and address;

c. Repeat notation "Current Registered Virginia Contractor No. ____" on the outside envelope.

7.3 Each bid must be accompanied by a cashier's check payable to the City drawn on a bank satisfactory to the City, or a Bid Bond, in the amount of five percent (5%) of the amount of the total base bid, with the City as obligee, as assurance that the successful bidder will enter into the Contract within ten (10) days after Notice of Award.

If the successful bidder defaults by failure to enter into the Contract and to provide required performance and payment bonds, the certified check or Bid Bond accompanying the successful bid shall be collected by the City, not as a penalty but as liquidated damages for delays and such additional expenses as may be incurred by the City for reasons of such default.

7.4 Contractors will indicate a lump sum bid for on the bid form. The lump sum bid shall contain all necessary costs required for completion of the Work. Any changes, erasures, modifications, or deletions in the bid form, or alternate proposals not specified in the bid proposal may make the proposal irregular and subject to rejection.

7.5 Receipt deadline for bids will be as stated in the Advertisement for Bids.

7.6 Bids will be opened publicly in accordance with the Advertisement for Bids.

7.7 Withdrawal of bid after bid opening: To withdraw a bid after bid opening, a bidder must satisfy the substantive requirements of Va. Code §2.2-4330. In addition, the following procedures shall apply:

a. The bidder shall give notice in writing of his claim of right to withdraw his bid within two business days after the conclusion of the bid opening procedure and shall submit original work papers with such notice.

b. The mistake may be proved only from the original work papers, documents and materials used in preparation of the bid and delivered as required herein.

8. Bonds and Damages:

8.1 Bonds shall be with a surety company acceptable to the Owner~~.~~ that is legally authorized to do business in Virginia and in a form acceptable to Owner.

8.2 A performance bond and a labor and material payment bond will be required in the amount of 100 percent of the bid.

8.3 Liquidated damages shall be as indicated in the Contract Documents.

9. Award of Contract:

9.1 The award of the Contract will be the responsible bidder submitting the lowest responsive base bid.

Selection of the apparently successful bidder's responsibility will include a serious evaluation of whether the bidder has conscientiously attempted to meet Minority and Disadvantaged Business Enterprise goals. A requirement of the Contract bidder will be that a genuine concerted effort will be utilized to meet the Contract goal.

9.2 Before the Contract is awarded, the bidder submitting the lowest responsive bid must satisfy the City that it has the requisite organization, capital, equipment, ability, resources, personnel, management, business integrity, and at least five years experience in the type municipal work for which it has submitted a bid. Each bidder shall, with his bid, submit a list of at least five projects of similar size and dollar value completed within the last five years, giving location, dollar value, year completed, and the name(s) of the owner(s) and architect/engineers(s). The bidder shall verify to the City that it has the sufficient and qualified personnel to provide for the Contact Work. Failure by the lowest responsive bidder to sufficiently satisfy the City of its ability to meet any of the above requirements may serve as grounds for rejection of the bid.

9.3 The Owner reserves the right to cancel the Advertisement for Bids, reject any and all bids, waive any and all informalities, and disregard all conforming, nonconforming, conditional bids or counterproposals.

9.4 Unless canceled or rejected, a responsive bid from the lowest responsible bidder shall be accepted as submitted, except that if the responsive bid from the lowest responsible bidder exceeds available funds, pursuant to Section 18.1-9 of the Lynchburg Public Procurement Code, the Owner may negotiate with the apparent low bidder to obtain a contract price within available funds.

a. Procedures for Negotiations: If the Owner wishes to negotiate with the apparent low bidder to obtain a contract price within available funds, negotiations shall be conducted in accordance with the following procedures:

1. If the using agency wishes to conduct negotiations pursuant to this section, it shall provide the procurement administrator with a written determination that the bid from lowest responsive, responsible bidder exceeds available funds. This determination shall be confirmed in writing by the director of finance or his designee. The using agency shall also provide the procurement administrator with suggested measures to bring the proposed purchase within budget through negotiations with the lowest responsive, responsible bidder, including reductions in scope, changes in quality, value engineering, changes in terms and conditions, or changes in schedule.

2. The procurement administrator shall advise the lowest responsive, responsible bidder, in writing, that the proposed purchase exceeds available funds. He shall further invite proposed measures, such as a reduction in scope, change in quality, value engineering, changes in terms or conditions, or changes in schedule for the proposed purchase, and invite the lowest responsive, responsible bidder to amend its bid based upon the proposed measures to bring the purchase within available funds.

3. Informal discussions between the City and the lowest responsive, responsible bidder, either in person, by e-mail, by telephone, or by other means, may be used to attempt to obtain a contract within available funds.

4. Following any successful negotiations, the lowest responsive, responsible bidder shall submit a proposed addendum to its bid, which addendum shall include the specific changes in the proposed purchase, the reduction in price, and the new contract value. The addendum shall be reviewed by the purchasing agency, the City Manager, and City Attorney for acceptability.

5. If an addendum is acceptable to the City, the City may award a contract within funds available to the lowest responsive, responsible bidder based upon the amended bid proposal.

6. If the City and the lowest responsive, responsible bidder cannot negotiate a contract within available funds, all bids shall be rejected.

9.5 Protests of Award or Decisions to Award of Contract

a. The following are the exclusive procedures for a bidder or offeror to protest the City's award or decision to award a contract.

1. Any protest to award a contract shall be in writing and shall be delivered so that it is received by the Superintendent not later than five (5) business days after announcement of the award or decision to award, whichever comes first. Otherwise any such protest shall be deemed to be waived.

2. Except for a protest of an emergency or sole source procurement, a protest of a City award or decision to award a contract may only be made by a person who submitted a bid or proposal for the procurement at issue and who was reasonably likely to have its bid or proposal accepted but for the City's decision. In the case of an emergency or sole source procurement, a protest may only be made by a person who can show that he was reasonably likely to have submitted a successful bid or proposal if the procurement had been other than emergency or sole source.

3. Protests shall only be granted if (1) the protester has complied fully with Sec. 18.1-6 of the Lynchburg Public Procurement Code and there has been a violation of law, the Lynchburg Public Procurement Code, or mandatory terms of the solicitation that clearly prejudiced the protestor in a material way, or (2) a statute requires voiding of the decision.

4. The Superintendent shall issue a written decision on a protest within ten (10) days of its receipt by the Superintendent.

5. If the protest is denied, the protestor may only appeal the denial or otherwise contest or challenge the procurement by then filing suit in the Lynchburg Circuit Court, Lynchburg, Virginia, and serving the city with such suit within ten (10) days of such denial. Otherwise, the Superintendent's decision shall be final and conclusive, and the protester's right to appeal the denial or to otherwise contest or challenge the procurement shall be deemed to be waived.

6. Strictly following these procedures shall be a mandatory prerequisite for protest of the City's award or decision to award a contract. Failure by a bidder to follow these procedures strictly shall preclude that bidder's protest and be deemed to constitute a waiver of any protest.

b. A protest may not be based upon the alleged non-responsibility of a person to whom the City awards or makes a decision to award a contract.

10. Bidders are referred to the General Conditions for the meanings of capitalized terms.

End of Instructions to Bidders

GENERAL CONDITIONS

ARTICLE 1	CONTRACT DOCUMENTS AND DEFINITIONS
ARTICLE 2	ARCHITECT/ENGINEER
ARTICLE 3	OWNER
ARTICLE 4	CONTRACTOR
ARTICLE 5	SUBCONTRACTORS
ARTICLE 6	WORK BY OWNER OR BY SEPARATE CONTRACTORS
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ARTICLE 10	PROTECTION OF PERSONS AND PROPERTY
ARTICLE 11	INSURANCE FOR CONTRACTS
ARTICLE 12	CHANGES AND MODIFICATIONS IN THE WORK
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GENERAL CONDITIONS

ARTICLE 1 CONTRACT DOCUMENTS AND DEFINITIONS

1.1 DEFINITIONS

1.1.1 CONTRACT AND CONTRACT DOCUMENTS:
The Contract Documents include: (1) the Construction Agreement (the "Contract"), its General Conditions, its Special Conditions (if any) and its attachments (if any); (2) the City's Invitation for Bid No. 14-916 dated December 2014, and any addenda; (3) the Contractor's bid dated February 12, 2015; (4) the Contract plans, drawings, and specifications and any addenda; and (5) any Modifications and any Field Orders. Any soils, geotechnical or other reports, surveys and analyses which may be made available to the Contractor for review or information under this Contract, are not adopted by reference into, nor are they part of the Contract Documents.

1.1.2 MODIFICATION:
A Modification is (1) a written amendment to the Contract signed by both parties (Project Manager for City of Lynchburg and authorized agent for the Contractor), (2) a written Change Order signed by the Project Manager or Owner's authorized representative and an authorized agent for the Contractor, or (3) a written Change Directive signed by the Owner's authorized representative. Modifications may be made to the Contract and Contract Documents without notice to any surety for the performance or payment bonds for the Work. Any Modification that increases the Contract Sum by more than $50,000 or that causes total expenditures for the Contract to exceed the amount budgeted for the Contract may only be made with the specific approval of the City Manager.

1.1.3 WORK:
"Work" means the construction and services required by the Contract Documents and includes all services, plant, labor, materials, supplies, equipment and other things necessary for Contractor to carry out and complete the requirements of the Contract Documents. "Work" includes material suitably stored and protected. "Work" also includes any portion of the Work, whether completed or not.

1.1.4 PROJECT:
The Project is the total construction of which the Work performed by Contractor under the Contract Documents may be the whole or a part.

1.1.5 FURNISH, INSTALL & PROVIDE:
The terms "Furnish" or "Install" or "Provide", unless specifically limited in context, mean furnishing and incorporating a specified item, product or material into the Work, including all necessary labor, materials, equipment to make the item and the Work ready for use.

1.1.6 EXTRA WORK:
The term "Extra Work" as used herein, refers to and includes work required by the Owner, which, in the judgment of the Owner involves changes in or additions to the Work required by the Contract Documents in their then-existing form.

1.1.7 NOTICE OF AWARD:
"Notice of Award" is the written notice of the Owner's acceptance of the Contractor's bid given by the Owner to Contractor as the successful bidder.

1.1.8 NOTICE:
"Notice" means written notice made in the manner specified in this paragraph.

1.1.8.1 "Notice" shall be deemed to have been given to the Owner if sent to the following persons by the means indicated in 1.1.8.3 and either such Notice actually was received by such persons or adequate proof of receipt is made:

Lynchburg City Schools	Procurement Division	City Attorney
School Administration Building 915 Court St Lynchburg, Virginia 24504	3rd Floor, City Hall 900 Church Street Lynchburg, Virginia 24504	3rd Floor, City Hall 900 Church Street Lynchburg, Virginia 24504

1.1.8.2 "Notice" shall be deemed to have been given to the Contractor if sent to the following person by the means indicated in 1.1.8.3 and either such Notice was received by such person or the Contractor or adequate proof of receipt by such person or the Contractor is made:

(Insert Successful bidder authorized representatives name and address)

_____

1.1.8.3 "Notice" shall be sent by special courier, recognized overnight delivery service, or United States mail. With the exception of original bid documents, facsimile copies and e-mail shall be acceptable if the original is then sent by special courier, recognized overnight delivery service, or United States mail within three business days.

1.1.9 CHANGE DIRECTIVES:
If the parties cannot agree to a written amendment to the Contract or to a Change Order, Owner may, by issuance of a written "Change Directive," direct Contractor to perform Work that Owner acknowledges, or that Contractor contends, to be a change to the Work required by the Contract Documents. A change order signed by the Owner that Contractor fails or refuses to sign shall be considered a "Change Directive."

1.1.10 MISCELLANEOUS WORDS OR TERMS:
1.1.10.1 Whenever they refer to the Work or its performance, "directed", "required", "permitted", "ordered", "designated", "prescribed", and words of like import shall imply the direction, requirements, permission, order, designation or prescription of the Owner, and "approved", "acceptable", "satisfactory", "in the judgment of" and words of like import shall mean approved by or acceptable to or satisfactory to or in the judgment of the Owner.

1.1.10.2 The Contract Documents generally refer to the Owner, Contractor, Architect/Engineers, entities, and persons as if masculine in gender and singular in number. Such references are intended to include the feminine or neutral in gender and/or the plural in number when appropriate.

1.2 EXECUTION, CORRELATION AND INTENT OF CONTRACT DOCUMENTS

1.2.1 Two originals of the Contract shall be executed.

1.2.2 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work, including without limitation, all items reasonably inferable from the Contract Documents. The Contract Documents are complementary, and what is required by any one shall be as binding as if required by all. Words and abbreviations which have well-known technical or trade meanings are used in the Contract Documents in accordance with such recognized meanings.

1.2.3 Anything shown on the drawings and not mentioned in the specifications or mentioned in the specifications and not shown on the drawings shall have the same effect as if shown or mentioned respectively in both. Technical specifications take priority over general specifications, and detail drawings take precedence over general drawings. Contractor shall promptly notify the A/E and Owner of

any conflict or inconsistency in the Contract Documents, upon its discovery, and promptly submit an explanation in writing of the conflict or inconsistency to the A/E, with a copy to the Owner. The A/E's decision thereon shall be final. In case of conflict or inconsistency between the drawings and the specifications, the specifications shall govern.

1.2.4 Should any labor, material, or equipment be required which is not denoted in the drawings and specifications, but which is, nevertheless, reasonably necessary for the proper carrying out of the intent of the Work, it is agreed that the labor, material, or equipment is implied, and the Contractor shall provide such labor and furnish such materials and equipment as fully as if they were completely delineated and prescribed, without additional cost to the Owner.

1.2.5 The Contractor may be furnished additional instructions and detail drawings to carry out the Work included in the Contract Documents. The additional drawings and instructions thus supplied to the Contractor will coordinate with the Contract Documents and will 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.

1.2.6 The drawings and specifications are divided into sections for convenience and clarity only. The Contractor shall not construe this division as a division of the Work into various subcontractor units. The Contractor may subcontract the Work in such divisions as he sees fit, but he is ultimately responsible for furnishing all Work required by the Contract Documents.

1.2.7 The provisions of this Contract cannot be amended, modified, varied or waived in any respect that causes a change to the Contract Sum or Contract Time except by a Modification. **The Contractor is hereby given notice that no person has authority to orally waive, or to release the Contractor from any of the Contractor's duties or obligations under or arising out of the Contract Documents.** Any waiver, approval or consent granted by Modification or Field Order to the Contractor shall be limited to those matters specifically and expressly stated thereby to be waived, approved or consented to and shall not relieve the Contractor of the obligation to obtain any future waiver, approval or consent.

1.3 OWNERSHIP AND USE OF DOCUMENTS

1.3.1 All plans, drawings, specifications, and documents relating to the Work are the property of the Owner and are to be used only for the Project.

ARTICLE 2 ARCHITECT/ENGINEER

2.1 DEFINITIONS

2.1.1 The term Architect/Engineer, hereinafter "A/E" or "Architect" or "Engineer", shall mean the consulting firm or City Department/Division, or their duly authorized representatives, lawfully licensed to practice in Virginia, that is responsible for the activities specified herein.

2.1.2 Although the A/E is referred to throughout the Contract Documents as if singular in number and masculine in gender, A/E includes plural in number and feminine or neuter in gender, as appropriate.

2.2. ARCHITECT/ENGINEER SERVICES

2.2.1 The A/E will provide services as described in these General Conditions.

2.2.2 The A/E will advise and consult with the Owner. The Owner's instructions to the Contractor may be forwarded through the A/E. The A/E has authority to act on behalf of the Owner only to the extent

provided in the Contract Documents, and the A/E does not have authority to approve a change to the Contract Sum or the Contract Time.

2.2.3 The A/E may visit the site at intervals appropriate to the stage of construction to familiarize himself generally with the progress and quality of the Work and to determine in general if the Work is proceeding in accordance with the Contract Documents. Any visits or inspections by the A/E, any Owner's representative, or any consultant retained by the Owner are solely for the Owner's benefit and shall not confer any rights on Contractor or excuse Contractor from any obligation under the Contract Documents.

2.2.4 The A/E will immediately inform the Owner and Contractor whenever, in the reasonable opinion of the A/E, any of the Work is proceeding contrary to the requirements of the Contract Documents and will be unacceptable. Such notification by the A/E is solely for the benefit of the Owner and will not be a cause for the Contractor to claim either delay of the Work or any increase in the Contract Sum or Contract Time.

2.2.5 The A/E, the Owner and other governmental representatives shall at all times have access to the Project site and the Work regardless of its stage of progress. The Contractor shall provide facilities for such access so that the A/E, the Owner and other governmental representatives may perform their functions under the Contract Documents.

2.2.6 Where applicable, based on the A/E's observations and an evaluation of the Contractor's Applications for Payment, the A/E will recommend the amounts owing to the Contractor and will issue Certificates for Payment in such amounts, as provided in Article ~~9~~9, Payments and Completion.

2.2.7 The A/E will be an interpreter of the requirements of the Contract Documents. The A/E will render interpretations necessary for the proper execution and progress of the Work, with reasonable promptness and in accordance with any time limit agreed upon. Either party to the Contract may make written request to the A/E for such interpretations. All interpretations of the A/E shall be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing and/or in the form of drawings.

2.2.8 The A/E will recommend to the Owner the rejection of Work that does not conform to the Contract Documents. Whenever, in his opinion, he considers it necessary or advisable for the implementation of the intent of the Contract Documents, he will have authority to require special inspection or testing of the Work in accordance with Subparagraph 7.6.2 whether or not such Work be then fabricated, installed or completed.

2.2.9 The A/E will review and approve or take other appropriate action upon Contractor's submittals such as Shop Drawings, Product Data, Samples and Manuals, but only for conformance with the design concept of the Work and with the information given in the plans, drawings, and specifications. Contractor shall ensure that all submittals are complete and have had included with them all correlated items that the A/E requires for his review. In the A/E’s and Owner’s sole discretion, the A/E may decline to review partial submittals or submittals for which correlated items have not been included. Contractor shall clearly note, both in a cover letter with any submittal and on the submittal itself, any deviation or inconsistency of anything submitted with the requirements of the Contract Documents. The A/E's approval of a specific item shall not indicate approval of an assembly of which the item is a component. The A/E's review and approval is for the sole benefit of the Owner and is not for the benefit of the Contractor. The A/E's review and approval shall in no way excuse Contractor from fully complying with the Contract Documents.

2.2.10 The A/E's acceptance of materials or products on behalf of the Owner shall not bar future rejection of such items (a) if they are subsequently found to be defective or inferior in quality or uniformity to the materials or products specified by the Contract Documents, (b) if such materials or products are not as

represented by the Contractor, or (c) if such materials or products do not conform to the requirements of the Contract Documents.

2.2.11 As required, the A/E will conduct inspections to assist the Owner in determining the dates of Substantial Completion and Final Completion, will receive and forward to the Owner for the Owner's review written warranties and related documents required by the Contract Documents and assembled and submitted by the Contractor, and will recommend a final Certificate for Payment upon Contractor's full compliance with the requirements of Article 9, Payment and Completion.

2.2.12 All claims, disputes, or other matters or questions between the Contractor and Owner arising out of or relating to the A/E's interpretation of the Contract Documents or arising out of any other decisions, communications, or actions of the A/E relating to the performance of the Work shall be resolved as set forth in Article 12, Changes and Modifications in the Work, and Article 13, Claims.

2.2.13 In case of the termination of the employment of the A/E, the Owner shall appoint a new A/E, who shall have the same status under the Contract Documents as the former A/E.

ARTICLE 3 OWNER

3.1 DEFINITION

3.1.1 The Owner is the City of Lynchburg, Virginia ("City"). The term Owner means the Owner or its authorized representative. The Departmental Director, or his designee, is the authorized Owner's representative for this Contract. Notwithstanding the foregoing, the authority of the Owner's representative is subject to the limitations in the Lynchburg Public Procurement Code.

3.1.2 The Departmental Director, will designate a single Owner's representative, with the title of Project Manager (PM), who will have the power to act, within the scope of his delegated authority, for and on behalf of the Owner, in accordance with the terms of the Contract Documents.

3.1.3 For purposes of any change in the Work, the term "Owner" or "Owner's representative" specifically excludes any and all inspectors having building code or City ordinance responsibilities or jurisdiction under the requirements of the building permit for the Project.

3.2 INFORMATION POSSESSED BY OWNER

3.2.1 The Owner, as a courtesy, may make available for the Contractor's reasonable review, at the Owner's offices or together with the Contract Documents, certain boring logs, geotechnical, soils and other reports, surveys and analyses pertaining to the Project site. Any such information provided to the Contractor is intended to be for the Contractor's convenience only, and its accuracy and completeness are not guaranteed or warranted by the Owner or the A/E, it being the Contractor's sole responsibility to verify the accuracy and completeness of such information. Such information is not incorporated by reference into or made a part of the Contract Documents.

3.2.1.1 Notwithstanding any information provided by Owner or anyone acting on the behalf of Owner, the Contractor assumes full responsibility for inspection of the site and for the means and methods of construction that he employs when performing the Work. The Owner shall not be liable for any additional work or costs arising as a result of any conclusions reached or assumptions derived by the Contractor from or based upon any such information that the Owner makes available for the Contractor's convenience.

3.3 OWNER-PAID PERMITS AND FEES

3.3.1 The Owner will, where applicable, pay for:

.1 Sewer availability fees;

.2 Water availability/meter connection fee;

.3 Electrical, natural gas, telephone, and cable TV permanent installation charges;

.4 Any easements required;

.5 Railroad flagging services; and

.6 Permits for work in Virginia Department of Transportation (VDOT) right-of-way. The Contractor is required to comply with the general requirement for work in the VDOT right-of-way as outlined in the The Manual of Specifications and Standard Details, 2005 for the City of Lynchburg, and the VDOT Manual for this work. Upon completion of all work in the VDOT right-of-way, the VDOT Personnel will conduct an inspection and issue a punch list. The Contractor shall be responsible for completion of those items on the punch list and for obtaining the written release of the permit.

3.3.2. The Contractor's attention is directed to Article 4.7, Contractor-Paid Taxes, Permits, Fees, and Notices, describing other permits to be obtained and fees to be paid by the Contractor.

3.4 OWNER'S RIGHT TO STOP WORK

3.4.1 If the Contractor fails to correct defective Work as required herein or persistently fails to carry out the Work in accordance with the Contract Documents, the Owner, by a written order, may order the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of the Owner to stop the Work shall not give rise to any duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity.

3.5 OWNER'S RIGHT TO CARRY OUT THE WORK

3.5.1 If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within seven (7) days after receipt of Notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to any other remedy he may have, rectify such deficiencies, including without limitation, by performing the Work or having the Work performed by other contractors, as outlined in Section 6.1, Owner’s Right to Perform Work and to Award Separate Contracts. In such case, an appropriate Change Order or Change Directive shall be issued by Owner deducting from the payments then or thereafter due the Contractor the cost of correcting such deficiencies, including compensation for the A/E's additional services made necessary by such default, neglect or failure. If the payments then or thereafter due the Contractor are not sufficient to cover such amount, the Contractor shall pay the difference to the Owner.

3.5.2 Neither the Owner nor the A/E nor their officers, agents, assigns or employees are in any way liable or accountable to the Contractor or his surety for the method by which Work performed by the Owner or performed by other contractors pursuant to this Article 3.5, or any portion thereof, is accomplished or for the price paid therefore. Notwithstanding the Owner's exercise of its rights under this Article 3.5, the Contractor and its surety shall have sole responsibility to maintain and protect the Work, including without limitation, that portion of the Work performed by or on behalf of Owner pursuant to this Article 3.5.

3.6 SUSPENSION OF WORK

3.6.1 The Owner shall have the authority to suspend the Work, in whole or in part, for such periods and such reasons as the Owner may deem necessary or desirable, in its sole discretion, including without limitation:

.1 Unsuitable weather;

.2 Other conditions considered unfavorable for the suitable prosecution of the Work; and/or

.3. Other conditions considered adverse to the best interests of the Owner.

3.6.2 Any such suspension shall be made by Owner by written order to the Contractor. The Contractor shall obey immediately such order of the Owner and shall not resume the Work until so ordered in writing by the Owner. The Contractor shall be entitled to an extension of the Contract Time, subject to the provisions of Article 8, Contract Time, herein.

3.6.3 No such suspension of the Work shall be the basis of a claim by the Contractor for any increase in the Contract Sum or for any other damages, losses, costs or expenses if the suspension is for a reasonable time under the circumstances then existing and the cause thereof is beyond the control and is without the fault or negligence of the Owner or those acting on Owner's behalf.

3.6.4 In the event of suspension of Work, the Contractor will, and will cause his Subcontractors and others providing any of the Work through Contractor to, protect carefully his and their materials and Work against damage or injury from the weather and maintain completed and uncompleted portions of the Work as required by the Contract Documents. If, in the opinion of the Owner, any Work is damaged or injured by reason of failure on the part of the Contractor or any of his subcontractors to so protect same, such Work shall be removed and replaced at the expense of the Contractor.

3.7 USE AND OCCUPANCY PRIOR TO FINAL ACCEPTANCE BY OWNER

3.7.1 The Owner has the right to take possession of and use any completed or partially completed portions of the Work, notwithstanding that the time for completing the entire Work or any portions thereof may, or may not, have expired. The taking of possession and use by the Owner shall be in accordance with the provisions in Article 9.8, Substantial Completion and Guarantee Bond. If such prior use delays the Work, the Contractor may submit a request for a time extension in accordance with the requirements of Article 8, Contract Time.

3.8 RIGHT TO AUDIT AND PRESERVATION OF RECORDS

3.8.1 The Contractor shall maintain books, records and accounts that completely and accurately account for all of his costs and receipts relating to the Project in accordance with generally accepted accounting principles and practices. The Owner or its authorized representatives shall have the right to review, inspect, audit and/or copy the books, records, accounts and related documents, including without limitation, supporting documents, of the Contractor under any of the following conditions:

.1 If the Contract is terminated for any reason in accordance with the provisions of these Contract Documents, in order to arrive at equitable termination costs;

.2 If the Contractor and the Owner dispute the amount due the Contractor under the terms of this Contract;

.3 To check or substantiate any amounts invoiced or paid that are required to reflect the costs of the Contractor, or the Contractor's efficiency or effectiveness under this Contract or in connection with

any extras, changes, claims, additions, backcharges, or other, as may be provided for in this Contract; and/or

.4 If it becomes necessary to determine the Owner's rights and the Contractor's obligations under the Contract or to ascertain facts relative to any Claim.

3.8.2 These provisions for review, inspection, audit and copying shall give the Owner unlimited access during normal working hours to the Contractor's books, records, accounts and supporting documents under the conditions stated above.

3.8.3 The Contractor shall make all his books, records, accounts, and all other documents relating to his costs and receipts under this Contract, including without limitation any supporting documents, available to the Owner and its representatives for review, audit, inspection and copying at any time during the period from entry into this Contract through three years after Final Payment or termination of this Contract, whichever occurs later.

3.8.4 Any payments made under this Contract shall not constitute a waiver of the Owner's rights to review, inspect, copy and audit. Payments shall not constitute a waiver or agreement by the Owner that it accepts as correct the billings, invoices or other charges upon which the payments are based. If the Owner's review and audit produces a claim against the Contractor, the Owner may pursue all its legal remedies, even though Owner has made all or part of the payments required by this Contract.

3.8.5 If any review or audit by the Owner or the Owner's representatives discloses an underpayment by the Owner, the Owner shall pay any amounts found by the audit to be owed to the Contractor. If such audit discloses an overpayment, the Contractor reimburse the Owner for the amount of the overpayment.

3.8.6 The Owner's right to review, inspect, audit and copy, and the Contractor's duty as to preservation of records shall terminate at the end of three (3) years after Final Payment or termination of this Contract, whichever occurs later. The Contractor shall include this "Right to Audit and Preservation of Records" clause in all his subcontracts, and he shall require the same to be inserted by all Subcontractors and lower-tier subcontractors in their subcontracts~~,~~ for any portion of the Work. Should Contractor fail to cause this clause to be included in any such subcontract or lower tier subcontract or otherwise fail to ensure the Owner's rights under this Article 3.8, Contractor shall be liable to Owner for all costs, expenses and attorney's fees that Owner may incur in order to obtain the information that would have otherwise been available to Owner under this Article 3.8, and the absence of such information shall create a presumption in the Owner's favor, which Contractor must overcome with clear and convincing evidence, that the missing information does not support the payment to Contractor or Contractor claim at issue.

3.8.7 Review, inspection, audit and copying pursuant to this Article 3.8 may be conducted by the Owner or its authorized representatives.

3.8.8 Documents subject to this Article 3.8 shall be made available to Owner and its representatives in whatever formats Owner requests, including without limitation, any electronic formats and/or in paper formats.

3.9 RIGHT TO REVIEW OTHER DOCUMENTS AND MATERIALS

3.9.1 In addition to the rights granted to the Owner under Article 3.8, Right to Audit and Preservation of Records or Documents, the Owner shall have the right to inspect, review and copy any and all of the Contractor's records or documents pertaining to or relating in any way to the Work, including, but not limited to, correspondence, memoranda, minutes, reports, intra- and inter-office communications, work papers, estimating sheets, progress reports, forecasts, audio or video recordings, computer disks, e-mails, films, or any other materials, regardless of physical form or characteristics, which were prepared by or in

the possession of, or obtainable by, the Contractor. The Contractor shall make all such documents and records available to the Owner upon ten (10) days Notice to the Contractor of the Owner's intent to inspect and review such documents. The Contractor shall include this "Right to Review Documents and Other Materials" clause in all its subcontracts, and Contractor shall cause the same to be inserted by all Subcontractors and lower-tier subcontractors in their subcontracts for any portion of the Work. The Contractor hereby waives any right he may have to additional compensation or time extensions in the event he fails or refuses to preserve and produce records pertaining to any such claim as requested by the Owner pursuant to this paragraph. In addition, the Owner may withhold all or any portion of any progress payments, which may be otherwise due, in the event Contractor refuses to comply with its obligations under this Article 3.9. The review, inspection and copying of documents and other records under this Article 3.9 may be conducted by the Owner or its authorized representatives.

3.9.2 Records and documents subject to this Article 3.9 shall be made available to Owner and its representatives in whatever formats Owner requests, including without limitation, any electronic formats and/or in paper formats.

ARTICLE 4 CONTRACTOR

4.1 DEFINITION

4.1.1 The Contractor is the person or entity identified in the Contract as such, and is generally referred to throughout the Contract Documents as if singular in number and masculine in gender but includes the feminine and neuter in gender, as appropriate. The term Contractor means the Contractor or his authorized representative.

4.1.2 This entire Contract is not one of agency by the Contractor for Owner but one in which the Contractor is engaged independently in the business of providing the services and performing the Work herein described as an independent contractor.

4.2 REVIEW OF CONTRACT DOCUMENTS

4.2.1 The Contractor shall not perform any portion of the Work at any time without having obtained and carefully reviewed the Contract Documents or, where required, approved Shop Drawings, Product. Data, Samples or Manuals for such portion of the Work.

4.2.2 The Contractor shall keep at the Project site at least two (2) copies of the drawings and specifications and shall at all times give the A/E, inspectors, and representatives of the Owner access thereto. Further, said drawings and specifications shall be the approved sets issued to the Contractor by the appropriate City permit agencies

4.3 CONTRACTOR'S REPRESENTATIONS

By entering into this Contract with the Owner, the Contractor represents and warrants the following, together with all other representations and warranties in the Contract Documents

4.3.1 That he is experienced in and competent to perform the type of work required and to furnish the plant, materials, supplies or equipment to be so performed or furnished by him;

4.3.2 That he is financially solvent, able to pay his debts as they mature, and possessed of sufficient working capital to initiate and complete the Work required by the Contract Documents;

4.3.3 That he is familiar with all federal, state, and local government laws, ordinances, permits, regulations and resolutions that may in any way affect the Work or those employed therein;

4.3.4 That such temporary and permanent Work required by the Contract Documents which is to be done by him will be satisfactorily constructed and fit for use for its intended purpose and that such construction will not injure any person, or damage any property;

4.3.5 That he has carefully examined the Contract Documents and the site of the Project and the Work and that from his own investigations, he has satisfied himself and made himself familiar with: (1) the nature and location of the Work, (2) the character, quality and quantity of materials likely to be encountered, including, but not limited to, all structures and obstructions on or at the project site, both natural and man-made; (3) the character of equipment and other facilities needed for the performance of the Work, (4) the general and local conditions, including without limitation its climatic conditions, the availability and cost of labor and the availability and cost of materials, tools and equipment; (5) the quality and quantity of all materials, supplies, tools, equipment, labor and professional services necessary to complete the Work in the manner required by the Contract Documents; and (6) all other matters or things which could in any manner affect the performance of the Work;

4.3.6 That he will fully comply with all requirements of the Contract Documents;

4.3.7 That he will perform the Work consistent with good workmanship, sound business practice, and in the most expeditious and economical manner consistent with the best interests of the Owner;

4.3.8 That he will furnish efficient business administration, an experienced superintendent, and an adequate supply of workmen, equipment, tools and materials at all times;

4.3.9 That he will complete the Work within the Contract Time;

4.3.10 That his Contract Sum is based upon the labor, materials, systems and equipment required by the Contract Documents, without exception; and

4.3.11 That he has satisfied himself as to the feasibility and correctness of the Contract Documents for the construction of the Work.

4.4 SUPERVISION AND CONSTRUCTION PROCEDURES

4.4.1 The Contractor shall supervise and direct the Work, using his best skill and attention. He shall be solely responsible for all construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract; subject, however, to the Owner's right to reject means and methods proposed by the Contractor which are unsafe or otherwise not in compliance with the Contract Documents.

4.4.2 The Contractor shall be responsible to the Owner for the acts and omissions of Contractor's employees, Subcontractors and sub-subcontractors, suppliers, their agents and their employees, and of any other persons providing any of the Work through Contractor, and for their compliance with each and every requirement of the Contract Documents, in the same manner as if they were directly employed by the Contractor.

4.4.3 The Contractor understands and agrees that he shall not be relieved of his obligations to perform the Work in accordance with the Contract Documents either by the activities or duties of the Owner or the A/E in their administration of the Contract or by inspections, tests, or approvals required or performed under Article 7 by persons other than the Contractor.

4.4.4 Before starting a section of the Work, the Contractor shall carefully examine all preparatory work that has been executed by others to receive his Work to see that it has been completed. He shall check carefully,

by whatever means are required, to ensure that his Work and adjacent, related work will finish to proper quality, contours, planes, and levels.

4.4.5 The Contractor understands and agrees that the Owner and A/E will not have any liability for or any responsibility to exercise any control over construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Work, and they will not be responsible for the Contractor's failure to carry out the Work in accordance with the Contract Documents. The Owner and the A/E will not have any liability for or any responsibility to exercise any control over the acts or omissions of the Contractor, Subcontractors, sub-subcontrators or any of their agents or employees, or any other persons performing any of the Work.

4.4.6 The Contractor shall use no plant, equipment, materials, or persons for this Work to which the Owner objects.

4.4.7 The Contractor shall not remove any portion of the Work or stored materials from the site of the Project without the Owner's prior, written approval.

4.5 LABOR, MATERIALS AND EQUIPMENT

4.5.1 The Contractor shall furnish all plant, labor, materials, supplies, equipment and other facilities and things necessary or proper for, or incidental to, the Work, and will perform all other obligations imposed on him by the Contract Documents. Final payment will not be made until the Work is so completed.

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

4.5.3 Work, materials, and equipment which are necessary in the construction but which are not specifically referred to in the specifications or shown in the drawings but implied by the Contract Documents shall be furnished by the Contractor at his own cost and expense. Such work and materials shall correspond with the general character of the Work as may be determined by the A/E subject to review as provided in Article 2.2.11.

4.5.4 The Contractor shall perform at least that percentage of the Work specified in the Contract to be Contractor self performed with forces that are in the direct employment of the Contractor. The Contractor shall submit to the Owner within thirty (30) days after award of the Contract a designation of the Work to be performed by the Contractor with his own forces. The percentage of the Work to be performed under subcontract shall be calculated by adding the amounts of all subcontracts and dividing this sum by the total Contract Sum.

4.5.5 The Contractor shall at all times enforce strict discipline, safety and good order among all persons providing any of the Work through him and shall not cause or allow to be used for the Work any unfit person or anyone not skilled in the task assigned to him. If any person providing any of the Work through the Contractor shall appear to the Owner to be incompetent or to act in a disorderly or improper manner, such person shall be removed immediately, at the request of the Owner, and shall not provide any of the Work except on written consent of the Owner.

4.5.6 No materials or supplies for the Work shall be purchased by the Contractor or by any Subcontractor subject to any chattel mortgage, or under a conditional sale or other agreement by which an interest is retained by the seller. The Contractor warrants that he has good title to all materials and supplies used by him in the Work.

4.5.7 The Contractor shall provide approved and adequate sanitary accommodations. All wastes shall be covered, disinfected, incinerated or otherwise disposed of legally.

4.5.8 All equipment, apparatus and/or devices of any kind to be incorporated into the Work that are shown or indicated on the drawings or called for in the specifications or required for the completion of the Work shall be entirely satisfactory to the Owner as regards operation, capacity and/or performance. No approval, either written or verbal, of any drawings, descriptive data or samples of such equipment, apparatus, and/or device shall relieve the Contractor of his responsibility to turn over the same in good working order for its intended purpose at the completion of the Work in complete accordance with the Contract Documents. Any equipment, apparatus and/or device not fulfilling these requirements shall be removed and replaced by Contractor with proper and acceptable equipment, apparatus, and/or device, or put in good working order satisfactory to the Owner by Contractor without additional cost to the Owner.

4.6 WARRANTY

4.6.1 The Contractor warrants to the Owner that all materials and equipment furnished under this Contract will be new unless otherwise specified, and that all workmanship will be of first class quality, free from faults and defects and in conformance with the Contract Documents and all other warranties and guaranties specified therein. Where no standard is specified for such workmanship or materials, they shall be the best of their respective kinds. All Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. If required by the Owner, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment. This warranty is not limited by the provisions of Article 13, Uncovering and Correction of Work.

4.6.2 The Work included in this Contract is specified in the Contract Documents. The Contractor shall be required to complete the Work specified and to provide all items needed for construction of the Work, complete and in good order.

4.7 CONTRACTOR-PAID TAXES, PERMITS, FEES AND NOTICES

4.7.1 The Contractor shall pay all sales, consumer, use and other similar taxes for the Work or portions thereof provided by the Contractor which are legally enacted at the time bids are received, whether or not yet effective. Taxes to be paid by the Contractor shall include, but shall not be limited to, the Lynchburg City Business, Professional and Occupational License Tax (a gross receipts tax).

4.7.2 Except as provided in Article 3.3, Owner-Paid Permits and Fees, the Contractor will be responsible for obtaining and paying for all other fees, permits and licenses necessary for the proper execution of the Work, including but not limited to:

.1 Building Permit and inspections (City fees waived);

.2 Plumbing, Electrical, Mechanical Permits and inspections (City fees waived);

.3 Temporary water meter, temporary electrical and telephone installations and temporary utility usage;

.4 Temporary security lighting;

.5 All other permits necessary in order to perform the Work shall also be secured by the Contractor, and fees necessary in order to perform the Work shall be paid by him as part of this Contract at no additional cost to the Owner.

4.7.3 The Contractor shall give all notices and comply with all laws, ordinances, rules, regulations, codes, permits, resolutions and lawful orders of any public authority bearing on the performance of the Work; including but not limited to OSHA, Title 40.1 Labor and Employment Chapter 3 of the Code of Virginia, and Title VII of the Civil Rights Act of 1964, as amended. All safety violations shall be corrected immediately upon receipt of notice of violation.

4.8 COMPLIANCE

4.8.1 All demolition and excavation shall comply with all laws, ordinances, rules and regulations, and lawful orders of public authority, including without limitation, those for the prevention of accidents as issued by the Department of Labor and Industry of the Commonwealth of Virginia.

4.8.2 To the extent of the Work indicated in the Contract Documents, the Contractor shall comply and the construction shall conform with all applicable and current editions or revisions of the following codes, specifications and standards. In case of conflict, the order of precedence shall be as hereinafter listed:

.1 Lynchburg Public Procurement Code;

.2 Contract Documents;

.3 The Virginia Uniform Statewide Building Code (“USBC”), as amended including, without limitation, The International Building Code ("IBC") and other codes incorporated by the USBC and IBC); and

.4 The Virginia Department of Transportation Road and Bridge Specifications and the Road Designs and Standards.

4.8.3 If the Contractor (or any person in a contract with the Contractor relating to the Work) finds an error, inconsistency, omission, ambiguity, discrepancy, conflict or variance in the Contract Documents, or between the Contract Documents and any provisions of law, ordinance, rule, or regulations or any of the codes, specifications and standards set forth in 4.8.2 herein, the Contractor has the obligation to promptly seek in writing a clarification thereof from the A/E, with a copy to the Owner, prior to the time of beginning any of the Work that is affected by such error, inconsistency, omission, ambiguity, discrepancy, conflict or variance. The Owner will welcome such a clarification request, and, if deemed necessary by the Owner, the Owner will issue a written instruction clarifying the matter in question. If the Contractor feels that the written clarification requires additional work, the Contractor shall follow the change process in Article 12, Changes and Modifications in the Work.

Should the Contractor fail to seek such a clarification thereof immediately upon the discovery of the need therefor, prior to the time the said Work is performed, the Contractor thereby assumes all risk of loss related to such error, inconsistency, ambiguity, discrepancy, conflict or variance which the Contractor (and any person in contract with Contractor relating to the Work) knew or should have known, using a normal, professional standard of care, existed prior to the time the Work was performed.

4.8.4 Any material or operation specified by reference to publications~~,~~ or published specifications of a manufacturer, a society, an association, a code, or other published standard, shall comply with the requirements of the referenced document which is current on the date of receipt of bids. If the Contractor observes that any of the Contract Documents are at variance with any such referenced publications, codes, published specifications, or published standards in any respect, he shall promptly notify the A/E in writing, with a copy to the Owner. The A/E will make such judgments as are necessary and notify the Contractor prior to the performance of the Work.

4.8.5 If the Contractor performs any Work contrary to any law, code, ordinance, regulation, publication, standard, permit, rule, regulation or resolution, he shall assume full responsibility therefore and shall bear all costs attributable thereto.

4.8.6 The Contractor is responsible for locating all underground structures such as water, oil and gas mains, water and gas services, storm and sanitary sewers and telephone and electric conduits that may be encountered during construction. The Contractor shall have Miss Utility locate all utilities on the site within the area of the Work and shall dig test holes, to determine the position of the underground structures. The Contractor shall pay the cost of digging test holes and likewise he shall pay the cost of the services of the representatives of the owners of such utilities for locating the said utilities. The cost of determining the location of any and all utilities is to be included in the bid price. The Owner shall pay the owners of such utilities for fees or charges for relocation of gas, electric, telephone, cable or other lines and/or services indicated to be relocated by others.

4.8.7 If utilities are marked which are not shown on the plans, the Contractor shall immediately give Notice to the Owner and the A/E of such finding. The Owner and A/E shall provide a direction to the Contractor within a reasonable period of time if additional work is required as a result of the finding. If the Contractor believes that it requires additional work, the Contractor shall follow the change process in Article 12, Changes and Modifications in the Work.

4.9 ALLOWANCES

4.9.1 The Special Conditions, if any, will contain provisions for allowances, if applicable to this Contract.

4.10 SUPERINTENDENT

4.10.1 The Contractor shall employ and have present at the Project site a competent Superintendent and any necessary assistants to ensure adequate supervision of the Work. The Superintendent shall have full authority to represent the Contractor, and all communications given to the Superintendent shall be as binding as if given to the Contractor.

4.10.2 Such Superintendent shall be acceptable to the Owner and shall be one who will be continued in that capacity for duration of this Project, unless he ceases to be on the Contractor's payroll. The Superintendent shall not be employed on any other project during the performance of this Contract.

4.11 CONSTRUCTION SCHEDULE

4.11.1 The Contractor shall, within twenty (20) days after issuance of the Notice of Award, prepare and submit to the A/E and Owner for review, a reasonably practicable and feasible Construction Schedule, showing the method by which the Contractor will comply with Completion Date requirements as set forth in the Contract. Unless otherwise agreed in writing by Owner or indicated in the specifications, the Construction Schedule shall use the Critical Path Method ("CPM") and an industry-standard computer software program, such as Primvera, acceptable to Owner and A/E, and shall be provided in electronic and paper format. The Construction Schedule shall show in detail how the Contractor plans to execute and coordinate the Work. The Contractor shall use this schedule in the planning, scheduling, direction, coordination and execution of the Work. The Construction Schedule shall encompass all of the work of all trades necessary for construction of the Project and shall be sufficiently complete and comprehensive to enable progress to be monitored on a day-to-day basis. The Owner and A/E shall each be provided with a copy of all schedules, updates, reports and other documentation required herein, which shall be suitable for reproduction by the Owner, and, unless otherwise agreed by Owner, shall be in electronic and paper format. When required to assist the A/E with Project staffing requirements for the following week, the Contractor shall provide the A/E, on each Friday, with a detailed work schedule for the following week. The Contractor shall provide the A/E with at least a seventy-two (72) hour notice for the following

items: (1) All traffic lane changes, (2) Work ready for inspection or testing, (3) _____. The Contractor may be charged for additional costs of inspection when material and workmanship are found to not be ready for inspection or testing at the time the Contractor calls for inspection or testing.

4.11.2 It is the sole responsibility of the Contractor to prepare, maintain, update, revise and utilize the Construction Schedule as outlined in this Article 4.11, Construction Schedule. The Construction Schedule shall be the sole overall schedule utilized by the Contractor in managing this Project; provided, however, that Contractor may, at its option, employ and utilize other schedules based upon and consistent with the Construction Schedule. In general, it is the intent of this paragraph 4.11.2 to allow the Contractor to choose its own means, methods and construction procedures consistent with good practice and the Contract Documents.

4.11.3 If the Contractor should express an intention to complete the Work earlier than any required Milestone or Completion Date, including without limitation, in any schedule, the Owner shall not be liable to the Contractor for any delay or associated extra costs based upon the Contractor being unable to complete the Work before such earlier date. The duties, obligations and warranties of the Owner to the Contractor apply only to the completion of the Work on the Milestone and Completion Dates required by the Contract Documents and do not apply to early completion.

4.11.4 Submission to the Owner of the Construction Schedule is advisory only, does not satisfy any requirement for any notice required by the Contract Documents or the Lynchburg Public Procurement Code, and such submission shall not relieve the Contractor of the responsibility for accomplishing the Work within each and every required Milestone and Completion Date. Omissions and errors in the approved Construction Schedule shall not excuse performance that is not in compliance with the Contract Documents. Submission to the Owner and/or A/E in no way makes the Owner and/or A/E an insurer of the Construction Schedule's success or makes Owner and/or the A/E liable for time or cost overruns flowing from the Construction Schedule’s shortcomings. The Owner hereby disclaims any obligation or liability by reason of Owner and/or A/E approval or failure to object to the Construction Schedule, and any such approval or failure to object shall not be considered an admission by the Owner that the Construction Schedule was reasonably practicable or feasible.

4.11.5 Contractor shall consult with and obtain information from principal Subcontractors necessary in preparation of the Construction Schedule, and for updates and revisions required therein. Contractor shall provide each principal Subcontractor with copies of the Construction Schedule and any revisions or updates affecting that Subcontractor's work. Contractor shall hold appropriate progress meetings with Subcontractors and shall direct and coordinate the work of Subcontractors consistent with and as required herein. Owner shall have the right to attend Subcontractor progress meetings but shall not be required to participate in such meetings or provide information to Subcontractors, except through the Contractor. Contractor shall keep up-to-date minutes of subcontractor progress meetings and shall provide same to Owner. The Contractor shall ensure that each Subcontractor, sub-subcontractor or supplier acknowledges and accepts the requirements of the Construction Schedule relating to their part of the Work.

4.11.6 If Contractor's Construction Schedule indicates that Owner, the A/E, or a separate contractor is to perform an activity by a specific date, or within a certain duration, Owner, the A/E, or any separate contractor shall not be bound to said date or duration unless Owner expressly and specifically agrees in writing to the same. The Owner's and/or A/E’s overall review and acceptance or approval of the schedule does not constitute an agreement to specific dates or durations for activities of the Owner, A/E, or any separate contractor.

4.11.7 The Contractor's Superintendent shall maintain at the Project site a current, updated Construction Schedule, indicating actual monthly progress for those portions of the Project on which Work has been or is being performed.

4.11.8 If an extension or contraction of any Milestone or Completion Date is authorized by any Change Order, the Contractor shall revise his Construction Schedule, Milestone and Completion Dates accordingly.

4.11.9 If, in the opinion of the Owner, the Construction Schedule does not accurately reflect the actual progress and sequence of the Contractor's performance of the Work, the Contractor shall revise the Construction Schedule, upon the Owner's request, and submit a revised Construction Schedule that accurately represents the progress and sequence of the Contractor's performance of the Work.

4.11.10 Contractor shall submit to the Owner the name of any scheduling consultant that Contractor may select or retain, prior to using such consultant. Contractor shall not utilize any particular scheduling consultant over the reasonable objection of the Owner to that consultant.

4.11.11 Contractor covenants, warrants, and guarantees that Contractor will not:

.1 Misrepresent to Owner its planning and scheduling of the Work;

.2 Utilize schedules materially different from those made available to the Owner or any subcontractors for the direction, execution and coordination of the Work, or which are not feasible or realistic;

.3 Prepare schedules, updates, revisions or reports that do not accurately reflect Contractor's actual intent or Contractor's reasonable and actual expectations as to:

(a) The sequences of activities,

(b) The duration of activities,

(c) The responsibility for activities,

(d) Resource availability,

(e) Labor availability or efficiency,

(f) Expected weather conditions,

(g) The value associated with the activity,

(h) The percentage complete of any activity,

(i) Completion of any item of work or activity,

(j) Project completion,

(k) Delays, slippages, or problems encountered or expected,

(l) Subcontractor requests for time extension, or delay claims of subcontractors, and

(m) If applicable, the float time available.

4.11.12 Contractor's failure to substantially comply with the foregoing covenants, warranties and guarantees of paragraph 4.11.11 shall be a substantial and material breach of contract which will permit Owner to terminate Contractor for default~~,~~ or withhold payments under the Contract Documents~~,~~ and shall entitle Owner to the damages afforded by these Contract Documents or applicable law.

4.11.13 Should Contractor fail to substantially comply with the provisions of the Contract Documents relating to scheduling and execution of the Work by the overall Construction Schedule, Owner shall have the right, at its option, to retain the services of scheduling consultants or experts (including attorneys if necessary in the opinion of the Owner) to prepare schedules, reports, updates and revisions of the schedule in accordance with the Contract Documents and to review and analyze same, in order to allow Owner and the A/E to evaluate the progress of the Work by Contractor, to determine whether Contractor is substantially complying with the Contract Documents, and to direct such action by the Contractor, as permitted by the Contract Documents, as required to ensure, under the Owner's schedule prepared hereunder, that Contractor will complete the Work within the Contract Time. All costs and expenses and fees incurred by Owner in exercising its rights hereunder shall be charged to Contractor's account. If Contractor fails to substantially comply with the scheduling and execution of the Work requirements of the Contract Documents, Contractor hereby agrees, in such instance, to comply with such Owner-prepared schedules, if any, or directions, activity sequences and durations as Owner may reasonably require, without additional cost to the Owner (subject only to cost adjustments for such changes in the Work as Owner may direct), to ensure completion within the Contract Time.

4.11.14 The Construction Schedule shall be utilized by Owner, A/E and Contractor for submission, review and approval of monthly Payment Requests. The schedule must be updated by Contractor monthly with each progress payment application and submitted to the Owner and A/E for review with the progress payment application. Owner shall not be required to process and review Contractor's Application for Payment if Contractor has failed or refused to provide the scheduling update information required herein.

4.11.15 The type of schedule to be utilized on this Project, along with its particular elements, shall be as specified in the Contract Documents.

4.12 RESPONSIBILITY FOR COMPLETION

4.12.1 The Contractor shall furnish such manpower, materials, facilities and equipment and shall work such hours, including night shifts, overtime operations and Sundays and holidays, as may be necessary to ensure the performance of the Work within the Milestone and Completion dates specified in the Contract. If the Owner notifies the Contractor that it has become apparent that the Work will not be completed within required Milestone or Completion Dates and such is not due solely to circumstances for which Contractor has established entitlement to an extension to the Contract Time, the Contractor agrees that it will assume full responsibility to take some or all of the following actions, at no additional cost to the Owner (except for circumstances beyond the Contractors' control), in order to ensure, in the opinion of the Owner, that the Contractor will comply with all Milestone and Completion Date requirements:

.1 Increase manpower, materials, crafts, equipment and facilities;

.2 Increase the number of working hours per shift, shifts per working day, working days per week, or any combination of the foregoing; and

.3 Reschedule activities to achieve maximum practical concurrency of accomplishment of activities.

Failure of the Owner to notify the Contractor of the apparent delay shall not relieve Contractor of the obligation to finish the Work within the required Milestone or Completion date.

4.12.2 If the actions taken by the Contractor to remedy delays not due solely to circumstances for which Contractor has established entitlement to a time extension are not satisfactory, the Owner may direct the Contractor to take any and all actions necessary to ensure completion within the required Milestone and

Completion Dates, without additional cost to the Owner. In such event, the Contractor shall continue to assume responsibility for his performance and for completion within the required dates.

4.12.3 If, in the opinion of the Owner, the actions taken by the Contractor pursuant to this Article or the progress or sequence of Work are not accurately reflected on the Construction Schedule, the Contractor shall revise such schedule to accurately reflect the actual progress and sequence of Work.

4.12.4 Failure of the Contractor to substantially comply with the requirements of this Article is grounds for a determination by the Owner, pursuant to Article 15, Termination Of The Contract, that the Contractor is failing to prosecute the Work with such diligence as will ensure its completion within the time specified.

4.12.5 The Owner may, at its sole discretion and for any reason, including when it is apparent to the A/E or Owner that the Work will not be completed within the required Milestone or Completion Dates, require the Contractor to accelerate the Construction Schedule by providing overtime, Saturday, Sunday and/or holiday work and/or by having all or any subcontractors designated by the Owner provide overtime, Saturday, Sunday, and/or holiday work. If the Owner requires overtime, Saturday, Sunday or holiday work by the Contractor's or his Subcontractor's own forces, and such requirement is not related in any way to the Contractor's apparent inability to comply with Milestone and Completion Date requirements, the Owner shall reimburse the Contractor for the direct cost to the Contractor of the premium time for all labor utilized by the Contractor in such overtime, Saturday, Sunday or holiday work (but not for the straight time costs of such labor), together with any Social Security and State or Federal unemployment insurance taxes in connection with such premium time. However, no overhead supervision costs, commissions, profit or other costs and expenses shall be payable in connection therewith.

4.12.6 This provision does not eliminate the Contractor's responsibility to comply with the City's noise ordinances, all VDOT permit requirements, and all other applicable laws, regulations, rules, ordinances, resolutions, and permit requirements.

4.13 DOCUMENTS AND SAMPLES AT THE SITE

4.13.1 The Contractor shall, at the Owner's direction, maintain at the site for the Owner one record copy of all drawings, specifications, addenda, Change Orders and other Modifications, and Field Orders in good order and marked currently to record all changes made during construction, and approved Shop Drawings, Product Data, Samples and Manuals. These shall be available to the A/E. These shall be delivered to the Owner upon completion of the Work.

4.14 SHOP DRAWINGS, PRODUCT DATA, SAMPLES AND MANUALS

4.14.1 SHOP DRAWINGS are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or any Subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

4.14.2 PRODUCT DATA are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate a material, product or system for some portion of the Work.

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

4.14.4 MANUALS are manufacturer's installation, start-up, operating, maintenance and repair instructions, together with parts lists, pictures, sketches and diagrams that set forth the manufacturer's requirements, for the benefit of the Contractor and the Owner.

4.14.5 The Contractor shall review, approve and submit, with reasonable promptness and in such sequence as to cause no delay in the Work or in the work of the Owner or any separate contractor, all Shop Drawings, Product Data, Samples and Manuals required by the Contract Documents.

4.14.6 By approving and submitting Shop Drawings, Product Data, Samples and Manuals, the Contractor represents that he has determined and verified all materials, field measurements, and field construction criteria related thereto, and that he has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

Parts and details not fully indicated on the contract drawings shall be detailed by the Contractor in accordance with standard engineering practice. Dimensions on the drawings, as well as detailed drawings themselves, are subject in every case to measurements of existing, adjacent, incorporated and completed Work, which shall be taken by the Contractor before undertaking any Work dependent on such data.

4.14.7 The Contractor shall not be relieved of responsibility for any deviation from the requirements of the Contract Documents by the Owner or A/E's approval of Shop Drawings, Product Data, Samples or Manuals under Article 2, Architect/Engineer unless the Contractor has specifically informed the Owner and A/E in writing of such deviation at the time of submission and the Owner has given specific written approval to the specific deviation. The Contractor shall not be relieved from responsibility for errors or omissions in the Shop Drawings, Product Data, Samples or Manuals by the A/E's approval thereof.

4.14.8 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data or Samples, to revisions other than those requested by the Owner or A/E on previous submittals.

No portion of the Work requiring submission of Shop Drawings, Product Data, or Samples shall commence until the submittal has been approved by the Owner and A/E as provided in Article 2, Architect/Engineer. All such portions of the Work shall be in accordance with approved submittals.

4.14.9 For substances that are proposed for use in the Project that may be hazardous to human health, the Contractor shall submit to the A/E, for information only, information on precautions for safely using these substances, including Material Safety Data Sheets and certification of registration by the Contractor with authorities under the respective Virginia and Federal Toxic Substances Control Acts.

4.14.10 Unless otherwise modified by the Owner in writing, the Contractor shall label or stamp and number all Shop Drawings, Product Data, Samples or Manuals as prescribed by the Project Manager.

4.14.11 The Contractor shall submit a copy of each submittal, including the transmittal sheet (for shop drawings, product data, samples or manuals) to the Owner simultaneously with the Contractor's submission of said drawings, data, samples or manual packages to the A/E.

4.15 EQUAL PRODUCTS:

4.15.1 The term "Product" as used in the Contract Documents refers to materials, equipment, supplies, articles, fixtures, devices, types of construction, or products, as appropriate.

4.15.2 All products furnished shall, whenever specified and otherwise wherever practicable, be the standard products of recognized, reputable manufacturers. If the manufacturer cannot make scheduled delivery of an approved item, the Contractor may request approval of the A/E to use another brand, make, manufacturer, article, device, product, material, fixture, form or type of construction which the Contractor judges to be equal to that specified. An item need not be considered by the A/E for approval as equal to the item so named or described unless it (1) it is at least equal in quality, durability, appearance, strength, and design; (2) it will perform at least equally the specific function imposed by the general design for the work being contracted for or the material being purchased; and (3) it conforms substantially, even with

deviations, to the detailed requirements for the item in the specifications. Approval shall be at the sole discretion of the A/E and will be based upon considerations of quality, workmanship, economy of operation, suitability for the purpose intended, and acceptability for use on the project. Any such approval must be in writing to be effective, and the decision of the A/E shall be final.

4.15.4 To obtain such approval of equal products other than those specified in Contract Documents, and not previously approved during the bidding, the Contractor's request for approval of any equal product shall include the following:

.1 Complete data substantiating compliance of the proposed equal product with the Contract Documents;

.2 Accurate cost data on proposed equal product in comparison with product or method specified;

.3 Product identification including manufacturer's name, address, and phone number;

.4 Manufacturer's literature showing complete product description, performance and test data, and all reference standards;

.5 Samples and colors in the case of articles or products;

.6 Name and address of similar projects on which the product was used and date of installation;

.7 All directions, specifications, and recommendations by manufacturers for installation, handling, storing, adjustment, and operation.

4.15.5 The Contractor shall also submit with his request for approval a statement which shall include all of the following representations by the Contractor, namely that:

.1 He has investigated the proposed equal product and determined that it is equal or better in all respects to that specified and that it fully complies with all requirements of the Contract Documents;

.2 He will meet all contract obligations with regard to this substitution;

.3 He will coordinate installation of accepted equal products into the work, making all such changes and any required schedule adjustments, at no additional cost to the Owner, as may be required for the Work to be complete in all respects;

.4 He waives all claims for additional costs and additional time related to equal products. He also agrees to hold the Owner harmless from claims for extra costs and time incurred by subcontractors and suppliers, or additional services which may have to be performed by the A/E, for changes or extra work that may, at some later date, be determined to be necessary in order for the Work to function in the manner intended in the Contract Documents;

.5 He will provide the same warranty and guarantee, and perform any work required in accordance therewith, for the equal product that is applicable to the specified item for which the equal product is requested;

.6 Material will be installed, handled, stored, adjusted, tested, and operated in accordance with the manufacturers' recommendation and as specified in the Contract Documents;

.7 In all cases, new materials will be used unless this provision is waived in writing by, the Owner or unless otherwise specified in the Contract Documents;

.8 All material and workmanship will be in every respect, in accordance with that which in the opinion of the Owner, is in conformity with approved modern practice; and

.9 He has provided accurate cost data on the proposed equal product in comparison with the product or method specified, if applicable.

4.15.6 The Owner may require tests of all products proposed as equal products so submitted to establish quality standards, at the Contractor's expense. After approval of an equal product, if it is determined that the Contractor submitted defective information or data regarding the equal product upon which Owner's approval was based, and that unexpected or uncontemplated redesign or rework of the Project will be required in order to accommodate the equal product, or that the item will not perform or function as well as the specified item for which equal product was requested, the Contractor will be required to furnish the original specified item or request approval to use another equal product. The Contractor shall pay all costs, expenses or damages associated with or related to the unacceptability of such an equal product and the resultant utilization of another item, and no time extension shall be granted for any delays associated with or related to such an equal product.

4.15.7 Equal products will not be considered for approval by the Owner if:

.1 The proposed equal product is indicated or implied on the Contractor's shop drawing or product data submittals and has not been formally submitted for approval by the Contractor in accordance with the above-stated requirements; or

.2 Acceptance of the proposed equal product will require substantial design revisions to the Contract Documents or is otherwise not acceptable to the Owner.

4.15.8 Except as otherwise provided for by the provisions of any applicable laws, the Contractor shall not have any right of appeal from the decision of the Owner disapproving any products submitted if the Contractor fails to obtain the approval for an equal product under this Article.

4.15.8 If the Contractor proposes a product which the Owner determines is not equal to the product named in Contract Documents but which the Owner nevertheless is willing to accept, Contractor shall provide, upon request by the Owner, an itemized comparison of the proposed substitution with the product specified and the cost differential which shall be credited to the Owner in a Change Order issued in accordance with Article 12, Changes and Modifications in the Work.

4.16 USE OF SITE

4.16.1 The Contractor shall confine his operations at the site to areas permitted by law, ordinances, permits, easements, right-of-way agreements and the Contract Documents. The Contractor shall not unreasonably encumber the site, in the opinion of the Owner, with any materials, equipment or trailers, nor shall Contractor block the entrances or otherwise prevent reasonable access to the site, other working and parking areas, completed portions of the Work and/or properties, storage areas, areas of other facilities that are adjacent to the worksite. If the Contractor fails or refuses to move said material, equipment or trailers within 24 hours of Notice by the Owner to so do, the Owner shall have the right, without further Notice, to remove, at the Contractor's expense, any material, equipment and/or trailers which the Owner deems are in violation of this paragraph.

4.17 CUTTING AND PATCHING OF WORK

4.17.1 The Contractor shall be responsible for all cutting, fitting or patching that may be required to complete the Work and to make its several parts fit properly and in accordance with the Contract Documents.

4.17.2 The Contractor shall not damage or endanger any portion of the Work or the work of the Owner or any separate contractors by cutting, patching or otherwise altering any work, or by excavation. The Contractor shall not cut or otherwise alter the work of the Owner or any separate contractor except with the written consent of the Owner and of such separate contractor. The Contractor shall not unreasonably withhold from the Owner or any separate contractor Contractor's consent to cutting or otherwise altering the Work. The Owner shall not be required to accept Work with a cut, splice, or patch when such cut, splice or patch is not generally accepted practice for the particular work involved or is otherwise unworkmanlike in the opinion of the Owner.

4.18 SITE CLEAN UP

4.18.1 The Contractor at all times shall keep the Project site and adjacent areas free from accumulation of waste materials or rubbish caused by his operations. Before final payment is made, the Contractor shall remove all of his waste materials, rubbish, scrap materials, debris, tools, construction equipment, machinery, surplus materials, falsework, temporary structures, including foundations thereof and plant of any description, from the Project site and put the site in a neat, orderly condition.

4.18.2 If the Contractor fails to clean up as required herein at any time during the performance of the Work or at the completion of the Work, the Owner may, upon 24 hours notification, clean up the site at the Contractor's expense.

4.19 PATENTS, ROYALTIES, ETC.

4.19.1 The Contractor guarantees to save harmless the Owner, its officers, agents, servants and employees from liability of any kind or nature, including without limitation, cost, expense and attorney's fees, on account of suits and claims of any kind for violation or infringement of any patents or patent rights by the Contractor, or by anyone directly or indirectly employed by him, or by reason of the use of any art, process, method, machine, manufacture, or composition of matter patented or unpatented in the performance of this Contract in violation or infringement of any letter or rights. The Contractor agrees to pay all royalties, fees, licenses, etc. required in respect of the Work or any part thereof as part of his obligations hereunder without any additional compensation.

4.20 INDEMNIFICATION

4.20.1 It is hereby mutually covenanted and agreed that the relation of the Contractor to the Work to be performed by him under this Contract shall be that of an independent contractor and that as such he will be responsible for all damages, loss or injury, including death, to persons or property that may arise or be incurred in or during the conduct and progress of said work as the result of any action, omission or operation under the Contract or in connection with the Work, whether such action, omission or operation is attributable to the Contractor, subcontractor, any material supplier, or anyone directly or indirectly employed by any of them. The Contractor shall make good any damages that may occur in consequence of the Work or any part of it. The Contractor shall assume all liability, loss and responsibility of whatsoever nature by reason of his neglect or violation of any federal, state, county or local laws, regulations , codes or ordinances.

4.20.2 The Contractor shall indemnify, hold harmless and defend the Owner, its employees, agents, servants and representatives from and against any and all claims, suits, demands, actions (regardless of the merits thereof) and damages of whatever nature arising out of or resulting from the performance of the Work or

the failure to perform the Work, including without limitation, jurisdictional labor disputes or other labor troubles that may occur during the performance of the Work.

4.20.3 The indemnification obligations under this Article shall not be affected in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any Subcontractor under worker's or workman's compensation acts, disability benefit acts or other employee benefit acts.

4.20.4 The obligations of the Contractor under this Article 4.20 shall not extend to the actions or omissions of the A/E, his agents or employees, arising out of the preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs or specifications.

4.20.5 The obligations of the Contractor under this Article 4.20 shall not extend to the proportion of damages, loss or injury, including death, to persons or property that may arise or be incurred as the result of any action, omission or operation of the Owner, or Owner's separate contractor(s), and their employees, agents, servants, and/or representatives.

4.21 NON-DISCRIMINATION IN EMPLOYMENT

4.21.1 During the performance of this Contract, the Contractor agrees as follows:

.1 The Contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, disability, or any other basis prohibited by state law relating to discrimination in employment, except where there is 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.

.2 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.

.3 Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting the requirements of this section.

.4 The Contractor will include the provisions of the foregoing paragraphs 1, 2, and 3 in every subcontract or purchase order of over $10,000, so that the provisions will be binding upon each subcontractor or vendor.

4.21.2 DRUG-FREE WORKPLACE REQUIRED:

As required by section 2.2-4312 of the Code of Virginia during the performance of the Contract, 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 Article 4.21, "drug-free workplace" means a site for the performance of Work done in connection with this Contract where Contractor's employees are prohibited from engaging in the unlawful

manufacture, sale, distribution, dispensation, possession or use of any controlled substance or marijuana during the performance of the Contract.

4.22 CONTRACT SECURITY

4.22.1 The Contractor shall deliver to the Owner, within ten (10) working days from Notice of Award, two (2) originals of a Performance Bond and a separate Labor and Material Payment Bond, in a form acceptable to the Owner, and each in an amount required by the Contract Documents and the Virginia Public Procurement Act, as security for the faithful performance of the Contract, and the payment of all persons performing labor and furnishing materials in connection with this Contract. The City will not issue Notice to Proceed until the bonds are received. The amount of the Performance and Payment Bonds shall be increased to the same extent the Contract Sum is increased due to Modifications. The form of bonds shall be acceptable to the Owner, and the surety shall be such surety company or companies as are acceptable to the Owner and as are authorized to transact business in the Commonwealth of Virginia. The cost of such bonds shall be included in the Contractor's bid amount.

4.22.2 The bonds shall irrevocably obligate the Contractor and surety to the full amount of the bonds unless and until all of Contractor’s obligations under the Contract Documents have fully been fulfilled.

4.22.3 If, at any time, any surety or sureties for any bond relating to the Work becomes insolvent or is determined by the Owner to be unable to adequately secure the interest of the Owner, the Contractor shall, within (30) days after Notice from the Owner to do so, substitute an acceptable bond(s) in such form and sum and with such other sureties as obligors as may be satisfactory to the Owner. The premiums on such bond(s) shall be paid by the Contractor.

ARTICLE 5 SUBCONTRACTORS

5.1 DEFINITIONS

5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform or supply any of the Work at the site. Subcontractor means a Subcontractor or his authorized representative. The term Subcontractor does not include any separate contractor performing work pursuant to Article 6 or his subcontractors.

5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform or supply any of the Work at the site. The term Sub-subcontractor includes a Sub-subcontractor or an authorized representative thereof.

5.1.3 The A/E will not deal directly with any Subcontractor or Sub-subcontractor or materials supplier. Subcontractor, Sub-subcontractors or material suppliers shall route requests for information or clarification through the Contractor to the A/E, with a copy to the Owner.

5.2 AWARD OF SUBCONTRACT AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

5.2.1 The Contractor shall submit to the Owner with a copy to the A/E prior to the award of any subcontract for Work under this Contract and thirty (30) calendar days after the award of this Contract, the names of the suppliers of principal items, systems, materials, and equipment proposed for the Work; the names and addresses, business and emergency phones of the Subcontractors which he proposes to employ under this Contract, as well as such other information as may be requested by the Owner. The Owner will review each Subcontractor and supplier based upon his apparent financial soundness and responsibility, his known or reported performance on previous similar work, and his available plant, equipment and personnel to perform the Work. The Contractor shall not employ a

Subcontractor or supplier to whom the Owner reasonably objects. The Owner's objection to a proposed Subcontractor or supplier shall not affect the Contract Sum.

5.2.2 The Contractor shall make no substitutions for any Subcontractor, person or entity previously selected unless first submitted to the Owner for review and approval.

5.3 SUBCONTRACTUAL RELATIONS

5.3.1 By an appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by the terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities which the Contractor, by these Contract Documents, assumes toward the Owner and the A/E. Said agreement shall preserve and protect the rights of the Owner and the A/E under the Contract Documents with respect to the Work to be performed by the Subcontractor so that the subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the Contractor-Subcontractor agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by these Contracts Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with his Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract, copies of all of the Contract Documents, and identify to the Subcontractor any terms and conditions of the proposed subcontract which may be at variance with the Contract Documents. Each Subcontractor shall similarly make copies of such Contract Documents available to his Sub-subcontractor's. Each subcontract agreement shall insure that all appropriate provisions of the Contract Documents are complied with by the Subcontractor.

5.3.2 The provisions herein regarding the City's reasonable objection to any Subcontractor shall in no way affect the liability of the Contractor to Owner regarding performance of all obligations by or payment of Subcontractors. The City's failure to object to any given Subcontractor shall not relieve the Contractor of his obligation to perform or have performed to the full satisfaction of the Owner all of the work required by this Contract.

5.3.3 Neither this article nor any other provision of the Contract Documents shall be deemed to make the Owner a joint venture or partner with the Contractor or to place the Subcontractor and materialmen in privity of contract with the Owner.

5.4 QUALIFICATION SUBMITTALS

5.4.1 Specific qualification submittals may be required of the Contractor, Subcontractors, installers and suppliers for certain critical items of the Work. Required qualification submittals are set forth in detail in the Instruction to Bidders and shall be provided, collected and submitted by the Contractor to the A/E with copies to the Owner. All information required of a single Subcontractor, installer or supplier shall be contained in a single, complete submittal. The Contractor shall submit the required qualification information within ten (10) days after receipt of the Owner's request.

5.4.2 The Owner may reject any proposed Subcontractor, installer or supplier, or any qualification submittals related thereto, for the following reasons:

.1 The Contractor's failure to submit requested information within the specified time; or

.2 The Contractor's failure to provide all of the requested information; or

.3 The Contractor's submission of a Subcontractor, installer or supplier, or qualifications thereof, which are unacceptable in the judgment of the Owner.

5.4.3 Should the Owner have reasonable objection to any proposed Subcontractor, installer or supplier, the Contractor shall submit another firm for approval by the Owner at no additional cost to the Owner.

ARTICLE 6 WORK BY OWNER OR BY SEPARATE CONTRACTORS

6.1 OWNER'S RIGHT TO PERFORM WORK AND TO AWARD SEPARATE CONTRACTS

6.1.1 The Owner reserves the right to perform work related to the Project with his own forces, and to award separate contracts in connection with other portions of the Project or other work on the site.

6.1.2 When separate contracts are awarded for different portions of the Project or other work on the site, the term "contractor" in the contract documents in each case shall mean the contractor who executes each separate construction agreement.

6.2 MUTUAL RESPONSIBILITY

6.2.1 The Contractor shall afford other contractors and the Owner reasonable opportunity for the introduction and storage of their materials and equipment and the execution of their work and shall properly connect and coordinate the Work with such other work. The Contractor shall coordinate his Work with the Owner and other contractors and 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 the Work or the work of any other contractors.

6.2.1.1 If the execution or result of any part of the Work depends upon any work of the Owner or of any separate contractor, the Contractor shall, prior to proceeding with the Work, inspect and promptly report to the Owner in writing any apparent discrepancies or defects in such work of the Owner or of any separate contractor that render it unsuitable for the proper execution or result of any part of the Work.

6.2.1.2 Failure of the Contractor to so inspect and report shall constitute an acceptance of the Owner's or separate contractor's work as fit and proper to receive the Work, except as to defects which may develop in the Owner's or separate contractor's work after completion of the Work and which the Contractor could not have discovered by its inspection prior to completion of the Work.

6.2.2 Should the Contractor cause damage to the work or property of the Owner or of any separate contractor on the Project, or to other work on the site, or delay or interfere with the Owner's work on ongoing operations or facilities or adjacent facilities or said separate contractor's work, the Contractor shall be liable for the same; and, in the case of another contractor, the Contractor shall attempt to settle said claim with such other contractor prior to such other contractor's institution of litigation or other proceedings against the Contractor.

If such separate contractor sues the Owner on account of any damage, delay or interference caused or alleged to have been so caused by the Contractor, the Owner shall notify the Contractor, who shall defend the Owner in such proceedings at the Contractor's expense. If any judgment or award is entered against the Owner, the Contractor shall satisfy the same and shall reimburse the Owner for all damages, expenses, and other costs that the Owner incurs as a result thereof.

6.2.3 Should Contractor have a dispute with a separate contractor with whom the Owner has contracted regarding damage to the Work or the property of Contractor or to the Work or property of said separate contractor or with regard to any delays or interferences which either Contractor or said separate contractor has caused to the performance of the other's Work, Contractor agrees to attempt to settle such dispute directly with said separate contractor. Contractor agrees that it will not seek to recover from the Owner any damages, costs, expenses (including, but not limited to, attorney's fees) or losses of profit incurred by

the Contractor as a result of any damage to the Work or property of the Contractor or for any delay or interference caused or allegedly caused by any separate contractor.

6.3 OWNER'S RIGHT TO CLEAN UP

6.3.1 If a dispute arises between the Contractor and separate contractors as to their responsibility for cleaning up as required by Article 4, Contractor, the Owner may clean up and charge the cost thereof to the contractor responsible as the Owner shall determine to be just.

ARTICLE 7 MISCELLANEOUS PROVISIONS

7.1 GOVERNING LAW

The provisions of this Contract shall be interpreted in accordance with the laws of the Commonwealth of Virginia.

7.2 PROVISIONS REQUIRED BY LAW DEEMED INSERTED

Each and every provision of law and clause required by law to be inserted in this Contract shall be deemed to be inserted herein, and the Contract shall be read and enforced as though it were included herein and if through mistake or otherwise, any such provision is not inserted or is not correctly inserted, then upon the application of either party, the Contract shall forthwith be physically amended to make such insertion.

7.3 SUCCESSORS AND ASSIGNS

The Owner and the Contractor each binds himself, his partners, successors, assigns and legal representatives to the other party hereto and to the partners, successors, assigns and legal representatives of such other party in respect to all covenants, agreements and obligations contained in the Contract Documents. Neither party to the Contract shall assign the Contract or sublet it without the written consent of the other, nor shall the Contractor assign any monies due or to become due to him hereunder, without the previous written consent of the Owner and the Contractor's surety.

In the event the Contractor desires to make an assignment of all or part of the Contract or any monies due or to become due hereunder, the Contractor shall file a copy of consent of surety, together with a copy of the assignment to the Owner and A/E. In the event the Contractor assigns all or any part of the monies due or to become due under this Contract, the instrument of assignment shall state that the right of assignees in and to any monies due to or to become due to Contractor shall be subject to prior liens and claims of all persons, firms and corporations that provided labor services or furnished material and equipment during the performance of the Work. The rights of assignees shall further be subject to the payment of any liens, claims, or amounts due to Federal, state, or local governments.

7.4 RIGHTS AND REMEDIES

7.4.1 The duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder shall be in addition to, and not a limitation of, any duties, obligations, rights and remedies otherwise imposed or available by law, not inconsistent with the Contract Documents. No time limitations described in this Contract shall be construed to alter the applicable statutory period of limitations with regard to the enforcement of the obligations of the parties.

7.4.2 No action or failure to act by the Owner, A/E or Contractor shall constitute a waiver of any right or duty afforded any of them under the Contract, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

7.4.3 Contractor agrees that he can be adequately compensated by money damages for any breach of this Contract which may be committed by the Owner and hereby agrees that, no default, act, or omission of the Owner or the A/E, except for failure to make payments as required by the Contract Documents, shall constitute a material breach of the Contract entitling Contractor to cancel or rescind the provisions of this Contract or (unless the Owner shall so consent or direct in writing) to suspend or abandon performance of all or any part of the Work. Contractor hereby waives any and all rights and remedies to which he might otherwise be or become entitled, saving only its right to money damages.

7.5 SEVERABILITY

In the event that any provision of this Contract shall be adjudged or decreed to be invalid, such ruling shall not invalidate the entire agreement but shall pertain only to the provision in question and the remaining provisions shall continue to be valid, binding, and in full force and effect.

7.6 TESTS

7.6.1 If the Contract Documents, laws, ordinances, rules, regulations, codes, permits, resolutions or orders of any public authority having jurisdiction require any portion of the Work to be inspected, tested or approved, the Contractor shall give the Owner at least 24 hours notice of its readiness so that the Owner or the A/E or other representatives of the Owner may observe such inspection, testing or approval. The Contractor shall bear all costs of such inspections, tests or approvals conducted by public authorities. 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 Contractor. Examples include, but are not limited to, the testing of cast-in-place concrete, foundation materials, soil compaction, pile installations, caisson bearings, and steel framing connections.

7.6.2 All materials and workmanship (if not otherwise designated by the specifications) shall be subject to inspection, examination or test by the Owner, A/E, and other representatives of the Owner, at any and all times during the manufacture and/or construction and at any and all places where such manufacture and/or construction are carried on. Special, full-sized and performance tests shall be as described in the specifications. Without additional charge, the Contractor shall furnish promptly all reasonable facilities, labor and materials necessary to make tests safe and convenient.

7.6.3 The selection of bureaus, laboratories and/or agencies for the inspection and tests of supplies, materials or equipment shall be subject to the approval of the Owner. Satisfactory documentary evidence, including but not limited to certificates of inspection and certified test reports that the material has passed the required inspection and tests must be furnished to the Owner, with a copy to the A/E, by the Contractor prior to the incorporation of the supplies, materials or equipment into the Work or at such times as to allow for appropriate action by the Owner.

7.6.4 Inspection or testing performed exclusively for the Contractor's convenience shall be the sole responsibility of the Contractor. Tests required by Contractor's or Subcontractor's error, omission or non-compliance with the Contract Documents, shall be paid for by the Contractor.

7.6.5 It is specifically understood and agreed that an inspection and approval of the materials by the Owner shall not in any way subject the Owner to pay for the said materials or any portion thereof, even though incorporated in the Work, if said materials shall in fact turn out to be unfit to be used in the Work, nor shall such inspection be considered as any waiver of objection to the Work on account of the unsoundness or imperfection of the material used.

ARTICLE 8 CONTRACT TIME

8.1 DEFINITION

8.1.1 Unless otherwise provided, the Contract Time is the period of time specified in the Contract Documents for Substantial Completion of the Work as defined herein, including authorized adjustments thereto. The Contractor shall complete his Work within the Contract Time.

8.1.2 The date of commencement of the Work is the date established in the Notice to Proceed

The Contractor shall not commence Work or store materials or equipment on site until written Notice to Proceed is issued or until the Contractor otherwise receives the Owner's written consent. The Contractor shall commence work no later than ten (10) days after the date established in the Notice to Proceed.

8.1.3 The date of Substantial Completion of the Work or designated portion thereof is the date determined by Owner when: (1) construction is sufficiently complete, in accordance with the Contract Documents, so the Owner can occupy or utilize the Work or designated portion thereof for the use for which it is intended; and (2) the Contractor has satisfied all other requirements for Substantial Completion which may be set forth in the Contract Documents.

8.1.4 The date of Final Completion of the Work is the date determined by the Owner when the Work is totally complete, to include punch list work, in accordance with the Contract Documents and the Owner may fully occupy and utilize the Work for the use for which it is intended.

8.1.5 The term “day” as used in the Contract Documents shall mean calendar days unless otherwise specifically designated.

8.2 PROGRESS AND COMPLETION

8.2.1 All time limits stated in the Contract Documents, including without limitation the date of Substantial Completion of the Work, are of the essence of the Contract.

8.2.2 The Contractor shall begin the Work on the date of commencement as defined herein. He shall carry the Work forward expeditiously with adequate forces and shall achieve Substantial and Final Completion as required by the Contract Documents.

8.3 CLAIMS FOR TIME EXTENSIONS

8.3.1 The time during which the Contractor is delayed in the performance of the Work by the acts or omissions of the Owner, the A/E or their employees or agents, acts of God, unusually severe and abnormal climatic conditions, fires, floods, epidemics, quarantine restrictions, strikes, riots, civil commotion or freight embargoes, or other conditions beyond the Contractor's control and which the Contractor could not reasonably have foreseen and provided against, shall be added to the time for completion of the Work (i.e., the Contract Time) stated in the Agreement; however, no claim by the Contractor for an extension of time for delays will be considered unless made in compliance with the requirements of this Article and other provisions of the Contract Documents.

8.3.2 The Owner shall not be obligated or liable to the Contractor for, and the Contractor hereby expressly waives any claims against the Owner on account of, any indirect or direct damages, costs or expenses of any nature which the Contractor, its Subcontractors, or Sub-subcontractor's or any other person may incur as a result of (1) any delays, reasonable or unreasonable, foreseeable or unforeseeable, which are either not caused by the acts or omissions of the Owner, its agents or employees or which arise from or out of (or due to) causes not within the control of the Owner, its agents or employees, or (2) any reasonable

delay regardless of its cause, it being understood and agreed that the Contractor's sole and exclusive remedy in any such events shall be an extension of the Contract Time, but only as determined in accordance with the provisions of the Contract Documents.

8.3.3 The burden of proof to substantiate a claim for an extension of the Contract Time shall rest with the Contractor, including evidence that the cause was beyond his control. It shall be deemed that the Contractor has control over the supply of labor, materials, equipment, methods and techniques of construction and over the Subcontractors, Sub-contractors, and suppliers, unless otherwise specified in the Contract Documents.

8.3.4 In the event of changes in the Work, the Contractor must identify any additional time required in the Proposed Change Order. The Owner need not consider any time extensions for changes in the Work not included in the Proposed Change Order.

8.3.5 No time extensions will be granted as a result of the Contractor's improper or unreasonable scheduling or for the Contractor's failure to have Shop Drawings, Product Data, Samples or Manuals submitted in ample time for review under a reasonable and agreed upon schedule.

8.3.6 Delays by Subcontractors, Sub-subcontractors or suppliers will not be considered justification for a time extension, except for the same valid reasons and conditions enumerated herein.

8.3.7 The Contractor acknowledges and agrees that actual delays due to changes, suspension of work or excusable delays~~,~~ in activities which, according to the Construction Schedule, do not affect the Contract Time will not be considered to have any effect upon the Contract Time and therefore will not be the basis for a time extension.

8.3.8 The Contractor acknowledges and agrees that time extensions will be granted only to the extent that: (1) excusable delays exceed the available flexibility in the Contractor's schedule; and (2) Contractor can demonstrate that such excusable delay actually caused, or will cause, delay to the Contractor's schedule that will extend the Contract Time.

8.3.9 With respect to Suspensions of Work under Paragraph 3.6, Suspension of Work, herein, the Contractor shall be entitled to an extension of the Contract Time not to exceed the length of time that the Work was suspended (unless as determined under this Article and the other requirements of the Contract Documents that a further extension is justified and warranted) if the claim is submitted in accordance with the requirements of this Article, and if the suspension is not due to any act or omission of the Contractor, any Subcontractor or Sub-subcontractor or any other person or organization for whose acts or omission the Contractor may be liable. The Contractor's claim will be evaluated in accordance with the terms of this Article.

8.3.10 The Contractor shall not be entitled to any extension of time for delays resulting from any conditions or other causes unless it shall have given written Notice to the Owner, within seven (7) calendar days following the commencement of each such condition or cause, describing the occurrence, the activities impacted and the probable duration of the delay. The Contractor's complete claim submittal for a time extension shall be submitted no later than twenty (20) calendar days after cessation of the delay or within such other longer period as the Owner may agree in writing to allow.

8.3.11 No such extension of time shall be deemed a waiver by the Owner of his right to terminate the Contract for abandonment or delay by the Contractor as herein provided or to relieve the Contractor from full responsibility for performance of his obligations hereunder.

8.4 CHANGE ORDER WORK

8.4.1 The Contractor shall make every reasonable effort to perform Change Order work within the Contract Time and in such manner as to have minimum delaying effects on all remaining Work to be performed under the Contract. If, however, the Change Order work results in an unavoidable increase in the time required to complete the Work, an extension of the Contract Time may be granted to the Contractor for the Change Order work. The Contractor's request shall be determined in accordance with the provisions of Article 8.3, Claims for Time Extensions, herein and as follows:

.1 If the time required for performance of the Change Order work has an unavoidable, direct, delaying effect on the primary sequence of Work activities remaining after rescheduling (e.g., the critical path in CPM type scheduling), the overall Contract Time may be extended by the minimum number of days required for the Change Order work as mutually agreed upon by the Owner and the Contractor;

.2 If the time required for performance of the Change Order work does not have an unavoidable direct delaying effect on the primary sequence of Work activities but is ordered by the Owner at a time such that insufficient Contract Time remains for completion of the Change Order work (and any limited number of contingent work activities), the Contract Time may be extended by the minimum number of days required for the Change Order work as mutually agreed upon by the Owner and the Contractor but only for the Change Order work and contingent activities, All other unaffected Work shall be performed within the Contract Time;

.3 Failure of the Owner and the Contractor to agree on a Contract Time extension as specified in .1 and .2 above shall not relieve the Contractor from proceeding with and performing the Change Order work promptly, as well as in such manner as to have minimal delaying effects on all remaining Work to be performed under the Contract. Such disagreement shall be resolved as soon as practical by negotiation.

8.5 LIQUIDATED DAMAGES FOR DELAY

8.5.1 The damages incurred by the Owner due to the Contractor's failure to complete the Work within required Milestone Dates and the Contract Time, including any extensions thereof, shall be in the amount set forth in the Construction Agreement, for each consecutive day beyond the Milestone Dates or the Contract Time (Sundays and all holidays included) for which the Contractor shall fail to complete the Work.

8.5.2 The parties hereby agree that the amount of liquidated damages provided in this Contract is neither a penalty nor a forfeiture and is intended to compensate the Owner solely for the Owner's inability to use the Work for its fully intended purpose, and is not intended to, nor does said amount include: (1) any damages, additional or extended costs~~,~~ incurred by the Owner for extended administration of this Contract, or by the Owner's agents, consultants or independent contractors for extended administration of this Contract, or (2) any additional services, relating to or arising as a result of the delay in the completion of the Work. Owner shall be entitled to claim against Contractor for its actual damages ~~and~~for any damages not specifically included within the liquidated damages as set forth herein. Such damages shall be computed separately, and, together with liquidated damages, either deducted from the Contract Sum or billed to the Contractor, at the option of the Owner.

Contractor agrees that it will not challenge the per diem amounts of liquidated damages imposed pursuant to this Article 8.5 except as to whether Contractor is responsible for the delays, themselves, that have resulted in the assessment of liquidated damages. The Contractor waives any challenge as to the validity of any liquidated damages specified on the grounds that such liquidated damages allegedly are void as penalties or allegedly are not reasonably related to Owner’s actual damages.

Owner may, in its sole discretion, deduct from any payments otherwise due Contractor amounts of liquidated damages assessable under this Article 8.5. Owner's failure to deduct liquidated damages assessable under this Article 8.5 from payments to Contractor shall not be deemed a waiver by Owner of any entitlement to such liquidated damages.

8.6 TIME EXTENSIONS FOR WEATHER

8.6.1 The Contract Time will not be extended due to inclement weather conditions that are normal to the general locality of Work site. The time for performance of this Contract includes an allowance for workdays (based on a 5-day workweek) which, according to historical data, may not be suitable for construction work.

.1 The following is the schedule of monthly anticipated normal inclement weather workdays for the Project location and will constitute the base line for monthly weather time extension evaluations.

ANTICIPATED NORMAL INCLEMENT WEATHER WORK-DAYS INCLUDED IN THE CONTRACT TIME OF PERFORMANCE											
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
7	7	7	7	9	7	7	7	6	6	6	7

8.6.2 The Contractor, in his planning and scheduling of the Work as required by the Contract Documents, shall allow for the normal inclement weather for the locality of the Work site. If the Contractor believes that the progress of the Work has been adversely affected and that it will directly result in a failure to meet Substantial Completion within the Contract Time, by weather conditions above and beyond the amount normally expected, he shall submit a written request to the Owner, with a copy to the A/E, for an extension of time, pursuant to Paragraph 8.3, Claims for Time Extensions.

8.6.3 Such request shall be evaluated by the Owner in accordance with the provisions of the Contract Documents and shall include a comparison of actual weather statistics compiled by City of Lynchburg's Department of Public Works, for the time of year, locality of the particular Work site with the days claimed by the Contractor and the anticipated normal inclement weather as stated in subparagraph 8.6.1. The normal inclement weather expected has been included in the designated Contract Time for completion. The decision of the Owner shall be final.

8.6.4 The Contractor shall not be entitled to any money damages whatsoever for any delays resulting from inclement weather, whether normal or abnormal, foreseeable or unforeseeable. The Contractor and Owner stipulate and agree that, for delays due to weather as determined in 8.6.3, the Contractor's sole relief is a time extension granted in accordance with this Article 8.6, Time Extensions for Weather.

ARTICLE 9 PAYMENTS AND COMPLETION

9.1 CONTRACT SUM

9.1.1 The Contract Sum is stated in the Construction Agreement and, including authorized adjustments thereto, is the total amount payable by the Owner to the Contractor for the performance of the Work under the Contract Documents. The Contract Sum includes, but is not limited to, the Contractor's profit and general overhead and all costs and expenses of any nature whatsoever (including without limitation taxes, labor, equipment and materials), foreseen or unforeseen, and any increases in said costs and expenses, foreseen or unforeseen, incurred by the Contractor in connection with the performance of the Work, all of which

costs and expenses shall be borne solely by the Contractor. The Contractor agrees to assume all increases in costs of any nature whatsoever that may develop during the performance of the Work.

9.2 SCHEDULE OF VALUES

9.2.1 For Lump Sum Price contracts, before the pre-construction meeting, the Contractor shall submit to the Owner and A/E a schedule of values allocated to the various portions of the Work, prepared on payment forms provided by the Owner and supported by such data to substantiate its accuracy as the Owner may require. This schedule of values, unless rejected by the Owner, shall be used as a basis for the Contractor's Applications for Payment.

9.2.2 For Unit Price contracts, the Contractor shall utilize the payment request form provided by the Owner, wherein the schedule of values shall correspond with the individual unit price bid items. When so requested by the Owner, the Contractor shall provide a more detailed cost breakdown of the unit price items.

9.2.3 Contractor may include in his schedule of values a line item for "mobilization" which shall include a reasonable amount for mobilization for the Contractor and his Subcontractors. The Contractor shall not front-end load his schedule of values.

9.3 APPLICATION FOR PAYMENT

9.3.1 The Contractor shall submit to the A/E three (3) originally executed, itemized Applications for Payment (and one (1) copy to the Owner) by the tenth of each month, along with any authorized change orders for that billing cycle. The Applications for Payment shall be notarized, indicate in complete detail all labor and material incorporated in the Work during the month prior to submission, and supported by such data substantiating the Contractor's payment request as the Owner may require. The Applications for Payment shall also contain Contractor’s certification that due and payable amounts and bills have been paid by the Contractor for Work for which previous Certificates of Payment were issued and payments received from the Owner.

9.3.2 Payment may be made for the value of materials, which are to be incorporated into the finished Work, and which are delivered to and suitably stored and protected on the Work site. The Contractor shall provide releases or paid invoices from the seller of such materials to establish, to the Owner's satisfaction, that the Owner has title to said material. Stored materials shall be in addition to the Work completed and shall be subject to the same retainage provisions as the completed Work. Material once paid for by the Owner becomes the property of the Owner and may not be removed from the Work site without the Owner's written permission.

9.3.3 The requirements for payment for materials stored off-site shall include, but are not limited to, those specified in Paragraph 9.3.2 and the additional requirements hereinafter specified. Material stored off-site under this provision shall be included in the definition of Work, Article 1, Contract Documents.

9.3.3.1 The requirements of Paragraph 10.2, Safety of Persons and Property, are fully applicable to materials stored off-site.

9.3.3.2 For purposes of administering this provision, the following definitions are provided.

a. Material stored NEAR the Work site: A storage location shall be considered near the Work site if it is not more than fifty (50) miles (approximately a one-hours drive) from the Work site.

b. Material stored DISTANT from the Work site: Locations beyond the limit of fifty (50) miles shall be considered distant.

9.3.3.3 All proposed off-site locations, regardless of whether they are near or distant, shall be approved by the Owner prior to any payment under this Article. The approval process will include an inspection of the proposed storage site, which may or may not coincide with any inspection of materials stored.

9.3.3.4 Prior to payment for any material stored off-site, said material shall be inspected to verify that it is properly stored; i.e., segregated, inventoried, identified as the property of the Owner and Contractor, and duly protected as required in Article 10.2, Safety of Persons and Property. This material shall be clearly identified and physically segregated from any other material or stock, in such a manner that it is clear, from casual observationthat said material is not a part of any other stock or stored material.

9.3.3.5 For materials stored distant to the Work site, the Contractor shall reimburse the Owner for all reasonable costs incurred by the Owner, to include but not limited to salary, transportation, lodging and per diem, for the Owner's or the A/E's employees to travel to and from the storage locations for the purpose of verifying that the material is properly stored. It is anticipated that such trips would occur whenever additional material is claimed for payment and/or at least every six (6) months until the material is delivered to the Work site.

9.3.3.6 Except for unusual circumstances, the Contractor will not be required to reimburse the Owner's costs for visits to storage locations near the Work site.

9.3.3.7 The Contractor shall hold the Owner harmless from any and all losses, additional costs, direct or indirect damages and/or delays, whatsoever, which may occur as a result of a failure of the Contractor to deliver (or have delivered), in a timely manner, materials (for which payment has been made) to the Work site for installation and incorporation into the Work.

9.3.3.8 The Contractor shall provide to the Owner a release of lien or other suitable certification by the seller of the materials, in addition to paid invoices, verifying that the Contractor has valid title to all materials for which payment is requested. The seller, however, shall not be required to waive his rights for recovery against Contractor or any surety if his contract is breached.

9.3.4 The Contractor warrants that title to all Work, materials and equipment covered by an Application for Payment will pass to the Owner, either by incorporation in the construction or upon the receipt of payment by the Contractor, whichever occurs first, free and clear of all liens, claims, security interests or encumbrances, hereinafter referred to as "liens". The Contractor further warrants that no Work, materials or equipment covered by an Application for Payment will have been acquired by the Contractor or by any other person performing Work at the site or furnishing materials and equipment for the Work that is subject to an agreement under which an interest therein or an encumbrance thereon is retained by the seller or otherwise imposed by the Contractor or such other person.

9.3.5 The Contractor's Application for Payment shall provide that the payment request attests that all Work for which the request is made has been completed in full according to all the requirements of the Contract Documents. By submitting his Application for Payment, the Contractor also represents that he has no knowledge that any Subcontractors or suppliers have not been fully and timely paid and that, insofar as he knows, the only outstanding items for payment with respect to the Contract are those to be paid from the funds for which application is being made.

9.4 CERTIFICATES FOR PAYMENT

9.4.1 The A/E will, within seven (7) calendar days after the receipt of the Contractor's Application for Payment, recommend a Certificate for Payment to the Owner, for such amount as the A/E determines is properly

due, with his reasons for any withholding or adjusting a Certificate as provided in Paragraph 9.6, Payments Withheld.

9.4.2 After the Certificate for Payment is recommended by the A/E, the Owner will review it and make any changes deemed necessary by the Owner's representative. The recommendation of the Certificate for Payment by the A/E does not waive or limit the Owner's right to reduce the amount of the payment due to the Contractor as determined to be appropriate by the Owner.

9.4.3 The recommendation of a Certificate for Payment will constitute a representation by the A/E to the Owner, based on his observations at the site as provided in Article 2, Architect/Engineer, and the data comprising the Application for Payment, that the Work has progressed to the point indicated; that, to the best of his knowledge, information and belief: (1) the quality of the Work is in accordance with the Contract Documents (subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial or Final Completion, to the results of any subsequent tests required by or performed under the Contract Documents, to minor deviations from the Contract Documents correctable prior to completion, and to any specific qualifications stated in his Certificate); and that (2) the Contractor is entitled to payment in the amount certified. However, by recommending a Certificate for Payment, the A/E shall not thereby be deemed to represent that he has made exhaustive or continuous on-site inspections to check the quality or quantity of the Work or that he has reviewed the construction means, methods, techniques, sequences or procedures, or that he has made any examination to ascertain how or for what purpose the Contractor has used the moneys previously paid on account of the Contract Sum.

9.4.3.1.1 The Application for Payment shall be on a form approved by the City. Payment for stored material delivered but not incorporated in the work will be the invoiced amount only. Stored materials drawdown shall be approved by the Owner. Submit applicable invoices with Application for Payment. Monthly partial payment request shall be submitted in **TRIPLICATE** to Owner’s representative for approval by the 25th of the month so that the Owner can approve payment request by the first working day of the next month. Partial payments shall be made on a monthly basis on or before the end of the next month for which the Work was performed, in accordance with the Contract Documents.

9.4.3.1.2 The Owner shall pay to the Contractor 95 percent of the total amount due and the Owner shall retain five (5) percent of the amount due until all work has been performed strictly in accordance with the Contract Documents and until such work has been accepted by the Owner.

9.5.1 The Owner shall make payment in the manner and within thirty (30) calendar days after receipt of the Certificate of Payment from the A/E based upon the Owner's approval or adjustment of said Certificate. The Contractor shall be paid the amount approved or adjusted by the Owner, less 5% retainage which is being held to assure faithful performance; provided however, that said retainage is not applicable to Time and Material Change Orders.

9.5.1.1 In relation to punch list or other uncompleted Work and in lieu of a portion of the above-specified five-percent 5% retainage, the Owner may, at its sole discretion, elect to retain fixed amounts directly relating to the various items of uncompleted Work. All amounts withheld shall be included in the Final Payment.

9.5.2 The Contractor shall, within seven (7) days after receiving payment from the Owner, do one of the following:

9.5.2.1 Pay all Subcontractors for the proportionate share of the total payment received from the Owner for Work performed by each Subcontractor under the Contract; or

9.5.2.2 Notify the Owner and Subcontractor(s), in writing, of his intention to withhold all or part of the Subcontractor's payment with the reason for nonpayment.

9.5.3 The Contractor shall make payment to Subcontractors as heretofore specified. Each payment shall reflect the percentage actually retained, if any, from payments to the Contractor on account of such Subcontractor's Work.

9.5.4 The Contractor shall provide the Owner with his social security number, if an individual, or his federal identification number, if a corporation, partnership, or other entity.

9.5.5 The Contractor shall pay unpaid Subcontractors interest on payments that are not made in accordance with this Article 9.5, Progress Payments. The rate of interest shall be in compliance with the Prompt Payment section of the Virginia Public Procurement Act of the Code of Virginia. The Contractor shall, by an appropriate agreement with each Subcontractor, require each Subcontractor to make payments to his Sub-subcontractors according to all the same requirements as provided in this Article 9.5 Progress Payments.

9.5.6 The Owner may, upon written request, furnish to any Subcontractor, if practicable, information regarding the percentages of completion or the amounts applied for by the Contractor and the action taken thereon by the Owner on account of Work done by such Subcontractor.

9.5.7 Neither the Owner nor the A/E shall have any obligation to pay or to see to the payment of any monies to any Subcontractor except as may otherwise be required by law.

9.5.8 No Certificate for Payment, nor any payment, nor any partial or entire use or occupancy of the Project by the Owner, shall constitute an acceptance of any Work not in accordance with the Contract Documents, nor shall it waive any right or claim by Owner based upon the Work, or any portion of the Work, including Work for which payment has been made, not conforming to the requirements of the Contract Documents.

9.6 PAYMENTS WITHHELD

9.6.1 The Owner may withhold the payment in whole or in part, if necessary to reasonably protect the Owner. If the A/E is unable to make representations as provided in subparagraph 9.4.3 and to recommend payment in the amount of the application, he will notify the Owner as provided in subparagraph 9.4.1. If the Contractor and the Owner cannot agree on a revised amount, the Owner will promptly issue a Certificate for Payment for the amount for which he is able to make representations with respect to payment, due for Work performed. The Owner may also decline to certify or make payment because of subsequently discovered evidence or subsequent observations, and the Owner may nullify the whole or any part of any Certificate for Payment previously issued.

9.6.2 The Owner may withhold from the Contractor so much of any payment approved by the A/E, as may in the judgment of the Owner be necessary:

.1 To protect the Owner from loss due to defective work not remedied;

.2 To protect the Owner upon receipt of notice of the filing in court or in an arbitration proceeding as may be required in any third party contract, of verified claims of any persons supplying labor or materials for the Work, or other verified third party claims;

.3 To protect the Owner upon reasonable evidence that the Work will not be completed for the unpaid balance of the Contract Sum;

.4 To protect the Owner upon reasonable evidence that the Work will not be completed within the Contract Time established by this Contract; or

.5 To protect the Owner upon the Contractor's failure to properly schedule and coordinate the Work in accordance with or as required by the Contract Documents, or failure to provide progress charts, revisions, updates or other scheduling data as required by the Contract Documents, or upon the Contractor's failure to provide as-built drawings as required herein, or upon Contractor's failure to otherwise substantially or materially comply with the Contract Documents.

9.6.3 If required by the Contract Documents, the Contractor shall, concurrent with his submission of the Construction Schedule, submit a practicable and realistic payment schedule showing the dates on which the Contractor will submit each and every Application for Payment and the amount he expects to receive for each and every monthly progress payment. If during the performance of the Work, the Contractor expects to receive an amount for a monthly progress payment larger than that indicated on the payment schedule, the Contractor shall notify the Owner at least thirty (30) days in advance of that payment so that the necessary allocation of funds can be processed. If Contractor fails to submit a practicable and realistic payment schedule, the Contractor's Application for Payment shall be honored only to the extent that the Work is actually performed and that the proportion of payments made to the Contract Sum does not exceed the proportion of the Contract Time expired as of the time of the request.

9.7 FAILURE OF PAYMENT

If the Owner does not make payment to the Contractor within the thirty (30) calendar days after receipt of the Contractor's Application for Payment by the A/E through no fault of Contractor, and the Owner otherwise not being entitled under the Contract Documents or applicable law to withhold payment, then the Contractor may, upon fifteen (15) additional days' written Notice to the Owner and the A/E, stop the Work until payment of the amount owing has been received. In such event, the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, which shall be effected by appropriate Change Order as provided herein.

9.8 SUBSTANTIAL COMPLETION AND GUARANTEE BOND

9.8.1 Unless otherwise specified in Article 9.9, Final Completion and Final Payment, when the Contractor considers that the Work, or a designated portion thereof which is acceptable to the Owner, is substantially complete as defined in Article 8, Contract Time, the Contractor shall request in writing that the A/E and the Owner perform a Substantial Completion inspection. Prior to such inspection the Contractor shall:

.1 If applicable, secure a Certificate of Occupancy for the Project or a designated portion thereof; and

.2 Submit five (5) copies each of the Operations and Maintenance Manuals to the A/E as specified and one (1) copy to the Owner.

9.8.2 The Owner shall determine whether the Work is substantially complete and shall compile a punch list of items to be completed or corrected. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

9.8.3 When the Owner on the basis of his inspection determines that the Work or a designated portion thereof is substantially complete, the A/E will then prepare a Certificate of Substantial Completion which shall establish the Date of Substantial Completion and shall state the responsibilities of the Owner and the Contractor for security, maintenance, heat, utilities, damage to the Work and insurance. The Certificate of Substantial Completion shall be submitted to the Owner and the Contractor for their written acceptance of the responsibilities assigned to them in such Certificate.

9.8.4 The Contractor shall have thirty (30) days from the Date of Substantial Completion to complete all items on the punch list to the satisfaction of the Owner. If the Contractor fails to complete all punch list items within the designated time, the Owner shall have the option to correct or conclude any remaining items by utilizing its own forces or by hiring others. The cost of such correction of remaining punch list items by the Owner or others shall be deducted from the final payment to the Contractor, and if the Owner has not retained sufficient funds to cover the cost, Contractor or its surety shall pay the difference within 30 days of a written demand by the Owner to do so.

9.8.5 Guarantees and warranties required by the Contract Documents shall commence on the Date of Final Completion of the Work, unless otherwise provided in the Certificate of Substantial or Final Completion, or the Contract Documents. Provided, however~~,~~ that if Contractor does not complete certain punch list items within the time period~~,~~ specified in 9.8.4, all warranties and guarantees for such incomplete Punch List items shall become effective upon issuance of final payment for the Work.

9.8.5.1 The Contractor shall guarantee for a term of one (1) year from the date of Final Completion or Final Payment, whichever comes later, (unless otherwise provided for in the Certificate(s) of Substantial or Final Completion or the Contract Documents): (1) the quality and stability of all materials equipment and Work; (2) all the Work against defects in materials, equipment or workmanship; and (3) all shrinkage, settlement or other faults of any kind which are attributable to defective materials or workmanship. The Contractor shall remedy at his own expense, when so notified in writing to do so by the Owner, and to the satisfaction of the Owner, the Work or any part thereof that does not conform to any of the warranties and guaranties described in the Contract Documents~~.~~ or that otherwise does not conform to the requirements of the Contract Documents

9.8.5.2 In order to make good the guarantee as herein required, the Contractor shall deposit with the Owner, after Substantial Completion but before Final Payment, a Guarantee Bond(s) issued by a surety licensed to do business in Virginia and otherwise acceptable to the Owner, for the faithful performance of the guarantee. Said Bond(s) shall be for a period of one (1) year from the date the guaranties and warranties commence and in the amount of five percent (5%) of the final gross value of the Contract.

9.8.5.3 The Contractor shall complete repairs during the guarantee period~~,~~ within five (5) working days after the receipt of Notice from the Owner, and if the Contractor shall fail to complete such repairs within the said five (5) working days, the Owner may employ such other person or persons as it may deem proper to make such repairs and pay the expenses thereof out of any sum retained by it, provided nothing herein contained shall limit the liability of the Contractor or his surety to the Owner for non-performance of the Contractor's obligations at any time.

9.8.6 The issuance of the Certificate of Substantial Completion does not indicate final acceptance of the Work by the Owner, and the Contractor is not relieved of any responsibility for the Work except as specifically stated in the Certificate of Substantial Completion.

9.8.7 Upon Substantial Completion of the Work, or designated portion thereof, and upon application by the Contractor and certification by the A/E, the Owner shall make payment, adjusted for retainage and payments withheld, if any, for such Work or portion thereof, as provided in the Contract Documents.

9.8.8 Should the Owner determine that the Work or a designated portion thereof is not substantially complete, he shall provide the Contractor a written Notice stating why the Work or designated portion is not substantially complete. The Contractor shall expeditiously complete the Work and shall re-request in writing that the Owner perform a Substantial Completion inspection.

9.9 FINAL COMPLETION AND FINAL PAYMENT

9.9.1 A Certificate of Final Completion shall be issued by the A/E prior to final payment. At the Owner's sole option, this Final Completion Certificate may be issued without a Certificate of Substantial Completion. The Contractor, prior to application for Final Payment and within the time specified for completion of the Work, shall complete all Work, to include punch list items and provide operation and maintenance manuals and as-built data, for the Work, as completed and in place. Said Certificate of Final Completion shall be issued, even if a Certificate of Substantial Completion has been issued previously and temporary authority to operate the Work has been granted.

9.9.1.1 The Certificate of Final Completion shall certify that all Work has been completed in accordance with Contract Documents and is ready for use by the Owner.

9.9.2 For all projects where Substantial Completion Certificates have been issued for various portions of the Work, at differing times, the Contractor shall request and the Owner shall, prior to final payment, issue a Certificate of Final Completion which certifies that all required Work, including punch list items, has been completed in accordance with the Contract Documents.

9.9.3 Neither the final payment nor any remaining retainage shall become due until the Contractor submits to the A/E the following:

.1 An Application for Payment for all remaining monies due under the -Contract.

.2 Consent of surety to final payment;

.3 If required by the Owner, other data establishing payment or satisfaction of all such obligations, such as receipts, releases and waivers of claims arising out of the Contract, to the extent and in such form as may be designated by the Owner. If any Subcontractor refuses to furnish waiver of claims satisfactory to the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify Owner against any such claim. If any such claim remains unsatisfied after all payments are made, the Contractor shall refund to the Owner all monies that the latter may be compelled to pay in discharging such claim, including all costs and reasonable attorneys' fees;

.4 As-built drawings, operation and maintenance manuals and other project closeout submittals, as required by the Contract Documents;

.5 Construction releases as required by the Contract Documents from each property owner on whose property an easement for construction of the Work has been obtained by the Owner, such release to be in the forms to be provided by the Owner. This release is for the purpose of releasing the Owner and the Contractor from liability, claims, and damages arising from construction operations on or adjacent to the easement and includes proper restoration of the property after construction. It shall be the Contractor's sole responsibility to obtain all such releases and furnish them to the Owner; and

.6 A written certification that:

.1 The Contractor has reviewed the requirements of the Contract Documents,

.2 The Work has been inspected by the Contractor for compliance with all requirements of the Contract Documents,

.3 Pursuant to this inspection, the Contractor certifies and represents that the Work complies in all respects with the requirements of the Contract Documents,

.4 The Contractor further certifies and represents that all equipment and systems have been installed in accordance with the Contract Documents and have been tested in accordance with specification requirements and are operational, and

.5 The Contractor hereby certifies and represents that the Work is complete in all respects and ready for final inspection.

9.9.4 Upon receipt of the documents required in subparagraph 9.9.3 and upon receipt of a final Application for Payment, the A/E and Owner will promptly make a final inspection. When the A/E finds the Work acceptable under the Contract Documents and the Contract fully performed, he will issue within seven (7) days a final Certificate for Payment and a Final Certificate of Completion.

The Certificate of Completion will state that to the best of his knowledge, information and belief, and on the basis of his observations and inspections, the Work has been completed in accordance with the terms and conditions of the Contract Documents and that the entire balance designated in the final Certificate for Payment is due and payable. The final Certificate for Payment will constitute a further representation that the conditions precedent to the Contractor's being entitled to final payment as set forth in Subparagraph 9.9.3 have been fulfilled. The Owner shall review the Certificate of Payment and shall accept it and issue final acceptance, or reject it and notify the Contractor, within ten (10) days. Final payment to the Contractor shall be made within thirty (30) days after final acceptance. All prior estimates and payments, including those relating to Change Order work, shall be subject to correction by this final payment.

9.9.5 The making of Final Payment shall constitute a waiver of all claims by the Owner, except those arising from:

.1 Unsettled claims;

.2 Faulty, defective, or non-conforming Work discovered or appearing after Substantial or Final Completion;

.3 Failure of the Work to comply with the requirements of the Contract Documents;

.4 Terms of any warranties or guarantees required by the Contract Documents; or

.5 Fraud or bad faith committed by the Contractor or any subcontractor or supplier during performance of Work but discovered by Owner after Final Payment.

9.9.6 The acceptance of Final Payment shall constitute a waiver of all claims by the Contractor, except those previously made in writing and so identified by the Contractor~~,~~ as unsettled at the time of the final Application for Payment. No payment, however, final or otherwise, shall operate to release the Contractor or his sureties from any obligations under this Contract or the Performance, Payment, or Guarantee Bonds.

ARTICLE l0 PROTECTION OF PERSONS AND PROPERTY

10.1 SAFETY PRECAUTIONS AND PROGRAMS

10.1.1 The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. The requirement applies continuously throughout the Contract performance, until Final Payment is made, and is not limited to regular working hours.

10.2 SAFETY OF PERSONS AND PROPERTY

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

.1 All persons performing any of the Work and all other persons who may be affected thereby;

.2 All the Work and all materials and equipment to be incorporated therein, whether in storage on or off the site, under the care, custody or control of the Contractor or any of his Subcontractors or Sub-subcontractor's. Machinery, equipment and all hazards shall be guarded or eliminated in accordance with the safety provisions of the Manual of Accident Prevention in Construction published by the Associated General Contractors of America, to the extent that such provisions are not in contravention of applicable law; and

.3 Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

10.2.2 The Contractor shall give all notices and comply with all applicable laws, ordinances, codes, rules, regulations, permits, resolutions and lawful orders of any public authority bearing on the safety of persons or property or their protection from damage, injury or loss.

The Contractor shall at all times safely guard the Owner's property from injury or losses in connection with the Contract. Contractor shall at all times safely guard and protect his Work and adjacent property as provided by law and the Contract Documents, from damage. All passageways, guard fences, lights and other facilities required for protection by local authorities or local conditions must be provided and maintained without additional cost to the Owner.

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

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

10.2.5 The Contractor is responsible for the proper packing, shipping, handling and storage (including but not limited to shipment or storage at the proper temperature and humidity) of materials and equipment to be incorporated in the Work, so as to insure the preservation of the quality and fitness of the materials and equipment for proper installation and incorporation in the Work, as required by the Contract Documents.

For example, but not by way of limitation, Contractor shall, when necessary, place material and equipment on wooden platforms or other hard and clean surfaces and not on the ground and/or place such material and equipment under cover or in any appropriate shelter or facility. Stored materials or equipment shall be located so as to facilitate proper inspection. Material and equipment that is delivered crated shall remain crated until ready for installation. Lawns, grass plots or other private property shall not be used for storage purposes without the written permission of the owner or lessee unless otherwise within the terms of the easements obtained by the Owner.

10.2.6 In the event of any indirect or direct damage to public or private property referred to in Paragraphs 10.2.1.2 and 10.2.1.3, caused in whole or in part by an act, omission or negligence on the part of the Contractor, any Subcontractor, any Sub-subcontractor, or anyone directly or indirectly employed by any of them or by anyone for whose acts any of them may be liable, the Contractor shall at his own expense

and cost promptly remedy and restore such property to a condition equal to or better than existing before such damage was done. The Contractor shall perform such restoration by underpinning, replacing, repairing, rebuilding, replanting, or otherwise restoring as may be required or directed by the Owner, or shall make good such damage in a satisfactory and acceptable manner. In case of failure on the part of the Contractor to promptly restore such property or make good such damage, the Owner may, upon two (2) calendar days written Notice, proceed to repair, replace, rebuild or otherwise restore such property as may be necessary and the cost thereof, or a sum sufficient in the judgment of the Owner to reimburse the owners of property so damaged, will be deducted from any monies due or to become due the Contractor under the Contract. If insufficient monies remain due or will become due to pay such sum, Contractor or its surety shall, within 30 days of receipt of a written demand from Owner to do so, pay Owner such sum.

10.2.7 The Contractor shall designate a responsible member of his organization at the site whose duty shall be the prevention of accidents and the protection of material, equipment and other property. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner.

10.2.8 The Contractor shall not load or permit any part of the Work to be loaded so as to endanger the safety of any portion of the Work.

10.2.9 The Contractor shall give notice in writing at least forty-eight (48) hours before breaking ground, to all persons, Public Utility Companies, owners of property having structures or improvements in proximity to site of the Work, superintendents, inspectors, or those otherwise in charge of property, streets, water pipes, gas pipes, sewer pipes, telephone cables, electric cables, railroads or otherwise, who may be affected by the Contractor's operation, in order that they may remove any obstruction for which they are responsible and have representative(s) on site to see that their property is properly protected. Such notice does not relieve the Contractor of responsibility for any damages and claims. Nor does such notice relieve the Contractor from his responsibility to defend and indemnify the Owner from actions resulting from the Contractor’s performance of such work in connection with or arising out of the Contract.

10.2.10 The Contractor shall protect all utilities encountered while performing its work, whether indicated on the Contract Drawings or not. The Contractor shall maintain utilities in service until moved or abandoned. The Contractor shall exercise due care when excavating around utilities and shall restore any damaged utilities to the same condition or better as existed prior to starting the Work, at no cost to the Owner. The Contractor shall maintain operating utilities or other services, even if they are shown to be abandoned on the drawings, in service until new facilities are provided, tested and ready for use.

10.2.11 The Contractor shall return all improvements on or about the site and adjacent property which are not shown to be altered, removed or otherwise changed to conditions which existed prior to starting the Work.

10.2.12 The Contractor shall protect the Work, including but not limited to, the site, stored materials and equipment, excavations, and excavated or stockpiled soil or other material, intended for use in the Work, and shall take all necessary precautions to prevent or minimize damage to same and to prevent detrimental effect upon his performance or that of his Subcontractors, caused by or due to rain, snow, ice, run-off, floods, temperature, wind, dust, sand and flying debris. For example, but not by way of limitation, Contractor shall, when necessary, utilize temporary dikes, channels or pumping to carry-off, divert or drain water, and shall as necessary tie-down or otherwise secure the Work and employ appropriate covers and screens.

10.3 OBLIGATION OF CONTRACTOR TO ACT IN AN EMERGENCY

10.3.1 In case of an emergency that threatens immediate loss or damage to property and/or safety of life, the Contractor shall act to prevent threatened loss, damage, injury or death. The Contractor shall notify the Owner of the situation and all actions taken immediately thereafter. If the Contractor fails to act and any loss, damage, injury or death occurs that could have been prevented by the Contractor's prompt and immediate action, the Contractor shall be fully liable to the Owner or any other party for all costs, damages, claims, actions, suits, costs of defense, and all other expenses arising therefrom or relating thereto.

10.3.2 Prior to commencing the Work and at all times during the performance of the Work, the Contractor shall provide the Owner two, twenty-four hour (24) emergency phone numbers where his representatives can be contacted at any time.

ARTICLE 11 INSURANCE FOR CONTRACTS

11.1 CONTRACTOR'S INSURANCE

11.1.1 During the term of this Contract, the Contractor shall procure and maintain insurance coverages with insurance companies rated by A. M. Best Company as A – VIII or better. The company(ies) shall be authorized to do business under the laws of the Commonwealth of Virginia and be acceptable to the City of Lynchburg and shall provide the following minimum types of insurance:

a. **Commercial General Liability Insurance** – This will cover claims for Bodily Injury, Property Damage, Personal and Advertising Injury, Products and Completed Operations, which may arise from operations under the Contract, whether such operations be performed by the Contractor or by any Subcontractor or Independent Contractor, or by anyone directly or indirectly employed by any of them. Such insurance shall include coverages "X", "C" and "U" for explosion, collapse of other structures and underground utilities, as well as Contractual Liability Insurance covering the requirements outlined in the General Conditions. This insurance shall name the City, the City Council and its employees as additional insureds ***by endorsement*** to the Commercial General Liability policy. Such policy shall not have a restriction on the limits of coverage provided to the City of Lynchburg as an additional insured. The City of Lynchburg shall be entitled to protection up to the full limits of the Contractor's policy regardless of the minimum requirements specified in this Contract. If endorsements to the Commercial General Liability insurance policies cannot be made, then separate policies providing such protection shall be purchased by the Contractor.

1. The Policy shall have the following ***minimum*** limits:

$1,000,000 Each Occurrence Limit
$1,000,000 General Aggregate Limit
$1,000,000 Personal and Advertising Injury Limit
$1,000,000 Products and Completed Operations Aggregate Limit
$5,000 Medical Expense Limit

This insurance shall include the following provisions and /or endorsements:

1) The General Aggregate limit shall apply on a "per project" and on a "per location" basis;
2) Coverage shall apply to all liability arising from all premises and operations conducted by the Contractor, Subcontractors and independent contractors;
3) The Contractor agrees that liability arising from Products and Completed Operations will be covered. Such liability coverage will be maintained for two years after completion of the Work.

4) The Contractor shall require each of his Subcontractors to procure and maintain Commercial General Liability Insurance of the type specified in these Contract Documents in the minimum amounts required by the Owner and the Contractor (which shall be the amounts required by this paragraph 11.1.1. of Contractor unless otherwise agreed in writing by Owner), during the term of their subcontracts.

b. **Worker's Compensation and Employer's Liability Insurance** for the Contractor's employees engaged in the Work under this Contract, in accordance with statutory requirements of the Commonwealth of Virginia. The Contractor shall require each of his Subcontractors to provide Worker's Compensation and Employer's Liability Insurance for all of the Subcontractor's employees engaged on such subcontracts. If any class of employees engaged on Work under the Contract is not protected under the Worker's Compensation statute, the Contractor shall provide similar protection for these employees in amounts not less than the legal requirements. The amount of Employer's Liability Insurance for the Contractor and each of his Subcontractors shall be not less than:

$100,000 per employee for Bodily Injury.
$100,000 per employee for disease
$500,000 per policy for disease

The Worker's Compensation and Employer's Liability Insurance policy shall include an "all states" or "other states" endorsement.

c. **Commercial Automobile Liability Insurance**, including coverage for owned, hired, non owned and borrowed vehicles used in the work with ***minimum*** limits of $1,000,000 Combined Single Limit per occurrence. This insurance shall name the City, the City Council and its employees as additional insureds ***by endorsement*** to the Commercial Automobile Liability policy. Such policy shall not have a restriction on the limits of coverage provided to the City of Lynchburg as an additional insured. The City of Lynchburg shall be entitled to protection up to the full limits of the Contractor’s policy regardless of the minimum requirements specified in this Contract.

d. **Umbrella Liability or Excess Liability** Insurance with the following minimum limits of:

$5,000,000 Each Occurrence
$5,000,000 Annual Aggregate

The following policies shall be scheduled as underlying policies:

Commercial General Liability
Commercial Automobile Liability
Employers Liability

This insurance shall name the City, the City Council and its employees as additional insureds ***by endorsement*** to the Umbrella or Excess Liability policy. Such policy shall not have a restriction on the limits of coverage provided to the City of Lynchburg as an additional insured. The City of Lynchburg shall be entitled to protection up to the full limits of the Contractor’s policy regardless of the minimum requirements specified in this Contract.

11.1.2 Proof of insurance for each type of coverage listed herein shall be provided within 10 days after issuance of the award letter for the Contract, and no Work shall proceed unless all such insurance is in effect. The Contractor shall not allow any Subcontractor to commence work on his subcontract until all such insurance of the Subcontractor has been so obtained and approved by the Contractor and found to be in accordance with the requirements set forth herein. The Contractor certifies by commencement of

the Work that his insurance and that of Subcontractors is in effect and meets the requirements set forth herein.

11.1.3 The Contractor shall purchase and maintain required liability and all other insurance as is appropriate for the Work being performed and furnished. The insurance shall provide protection from claims which may arise out of or result from Contractor's performance and furnishing of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed or furnished by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform or furnish any of the Work, or by anyone for whose acts any of them may be liable:

a. claims under Worker's Compensation, Employers Liability, disability benefits, and other similar employee benefit acts;

b. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;

c. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;

d. claims for damages insured by personal injury liability coverage which are sustained: (1) by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor; or (2) by any other person for any other reason;

e. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and

f. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle.

11.1.4 The insurance required to be purchased and maintained by the Contractor shall:

a. include completed operations insurance;

b. with respect to any other insurance coverage written on a claims-made basis, remain in effect for at least 2 years after final payment (and Contractor shall furnish the City and A/E evidence satisfactory to the City of continuation of such insurance at final payment and 1 year thereafter);

c. contain a cross liability or severability of interest clause or endorsement. Insurance covering the specified additional insureds shall be primary insurance, and all other insurance carried by the additional insureds shall be excess insurance.

11.1.5 All of the aforesaid insurance policies must be endorsed to provide that the insurance company ***shall give 30 days written notice to the City*** if the policies are to be terminated or if any changes are made during the Contract period which will affect in any way the insurance provided pursuant to such policy. Before starting the Work, the Contractor shall provide the City with a copy of each policy that he and each of his Subcontractors is required to carry in accordance with this Article 11, together with receipted bills evidencing proof of premium payment. These policies shall contain endorsements to the policies naming the City of Lynchburg as an additional insured as required.

11.1.6 Nothing contained herein shall effect, or shall be deemed to affect, a waiver of the City's sovereign immunity under law.

ARTICLE 12 CHANGES AND MODIFICATIONS IN THE WORK

12.1 CHANGES IN THE WORK

12.1.1 The Owner, without invalidating the Contract and without notice to the surety, may order a change to the Work consisting of additions, deletions or other revisions to the general scope of the Contract, or changes in the sequence of the performance of the Work. The Contract Sum and the Contract Time shall be adjusted accordingly. All such changes in the Work shall be authorized by Change Order, Modification, or Change Directive, and all Work involved in a change shall be performed in accordance with the terms and conditions of the Contract Documents. If the Contractor should proceed with a change in the Work upon an oral order, by whomsoever given, it shall constitute a waiver by the Contractor of any claim for an increase in the Contract Sum and/or Contract Time, on account thereof.

12.2 FIELD ORDER

12.2.1 A Field Order is a written order to the Contractor signed by the Owner's designated representative, interpreting or clarifying the Contract Documents or directing the Contractor to perform minor changes in the Work. Any work relating to the issuance of a Field Order shall be performed promptly and expeditiously and without additional cost to the Owner and within the Contract Time, unless the Contractor submits a Proposed Change Order, defined below, which is approved by the Owner. Field Orders shall be numbered consecutively by date of issuance by the Owner.

12.3 OWNER CHANGE REQUEST

12.3.1 An Owner Change Request is a written request from the Owner to the Contractor that describes a proposed change in the Work. The Contractor is required to submit a complete proposal for the total cost and additional time, if any, necessary to perform the proposed change in the Work. Owner Change Requests shall be numbered consecutively by date of issuance by the Owner.

12.4 CONTRACTOR'S PROPOSED CHANGE ORDER

12.4.1 A Contractor's Proposed Change Order is a written request from the Contractor to the Owner requesting a change in the Contract Sum and/or Contract Time. A Contractor's Proposed Change Order is submitted as a proposal in response to a Owner Change Request or as a claim for an increase in the Contract Sum or Contract Time pursuant to the issuance of a Field Order, or as a result of unforeseen circumstances, such as an unknown site conditions.

Change Orders for unforeseen site conditions will only be entertained if the Contractor has not accepted responsibility for the unforeseen site conditions pursuant to other provisions in the Contract Documents. A Contractor's Proposed Change Order must be submitted within twenty (20) calendar days of the issuance of a Owner Change Request or a Field Order or the discovery of an unforeseen circumstance. The Contractor shall not be entitled to any adjustment to the Contract Time or Contract Sum if Contractor fails to comply strictly with the requirements of the preceding sentence. Contractor's Proposed Change Orders shall be numbered consecutively by date of issuance by the Contractor. The Contractor shall also indicate on the Proposed Change Order the number of the Owner Change Request or the Field Order to which it responds. The Contractor understands and agrees to the City's provisions and policy regarding Change Orders as outlined in Article 1, section 1.1.2 of these General Conditions.

12.4.2 In the case of unit price items, it is understood and agreed by the Contractor that the estimates of the quantities in unit price items are approximate only and are presented solely for the purpose of comparing bids and may not represent the actual amount of work to be performed. The Contractor, therefore, understands and agrees that the Owner reserves the right to increase, decrease or eliminate

entirely the quantity of work to be done under any item. If called upon to do more work under any unit price item named in the Bid Documents, he will perform all such additional work and accept as payment the unit price named in the proposal, subject to the 20% deviation limitations specified in subparagraph 12.4.2.2.

12.4.2.1 The Contractor's Proposed Change Order shall be determined by applicable unit prices, if any, as set forth in the Contract.

12.4.2.2 However, if changes in quantities are of an item increase the actual work to more than twenty percent (20%) of the original bid quantity for that item, or decrease quantities of that item more than 20% of the original bid quantity for that item, then the Owner or the Contractor shall have the right to request a decrease or an increase in the unit price for the item for quantities greater than 120% or less than 80% of the original bid quantity for that item.

12.4.2.3 It shall be understood that such unit prices shall constitute full payment for the extra work performed, including, but not limited to, “general conditions” costs, plant, materials, labor, equipment, overhead, profit, and safety requirements.

12.4.3 If no such unit prices are set forth, the Contractor's proposal shall be on a lump sum basis and shall be itemized and segregated by labor, equipment, and materials for the various components of the change in the Work (no aggregate labor total will be acceptable) and shall be accompanied by signed proposals of any Subcontractors who will perform any portion of the change in the Work and of any persons who will furnish materials or equipment for incorporation therein.

12.4.3.1 The portion of the proposal relating to labor, whether by the Contractor's forces or the forces of any of its Subcontractors, may include reasonably anticipated gross wages of job site labor, including foremen, who will be directly involved in the change in the Work (for such time as they will be so involved), plus separately identified payroll costs (including premium costs of overtime labor, if overtime is authorized, Social Security, Federal or State unemployment insurance taxes and fringe benefits required by collective bargaining agreements entered into by the Contractor or any such Subcontractor in connection with such labor).

12.4.3.2 The portion of the proposal relating to materials may include the reasonably anticipated direct costs to the Contractor or to any of its Subcontractors of materials to be purchased for incorporation in the change in the Work, plus transportation and applicable sales or use taxes.

12.4.3.3 The proposal may further include the Contractor's and any of his Subcontractor's reasonably anticipated equipment rental costs, except small hand tools, in connection with the change in the Work.

12.4.4 Base Cost is defined as the total of labor, material and equipment rentals as described in subparagraphs 12.4.3.1, 12.4.3.2 and 12.4.3.3. The actual net cost in money to the Owner for the change in the Work shall be computed as follows:

.1 If the Contractor performs the change in the Work without use of Subcontractors or sub-subcontractors, his compensation will be the Base Costs as described above, plus a maximum mark-up of 15% for overhead and profit.

.2 If the work is performed by a bona fide Subcontractor, the Subcontractor's compensation will be the Base Costs as described above plus a maximum mark-up of 15% for overhead and profit. The

Contractor's compensation will be a maximum mark-up of five percent (5%) of the Subcontractors Base Costs for his overhead and profit.

.3 If the Work is performed by a bona fide Sub-subcontractor, the Subcontractor's compensation will be the Base Costs as herein described, plus a maximum mark-up of 15% for overhead profits. The mark-up of any Sub-subcontractor's work by the Contractor and all intervening tiers of Subcontractors shall not exceed a total of 10%.

12.4.5 The mark-up on the cost of labor, materials, and equipment described in Paragraphs 12.4.4.1, 12.4.4.2, and 12.4.4.3 shall be all the compensation to which the Contractor, Subcontractors and Sub-subcontractor are entitled for all indirect costs associated with or relating to the change in the Work including, but not limited to, labor and/or equipment inefficiency, changes in sequence, delays, interferences, impact on unchanged work, gross receipts tax, superintendent, small tools, reproduction, administration, insurance, unrelated safety requirements, temporary structures and offices, all other general and administrative, home office and field office expenses.

12.4.6 The Proposed Change Order may also include the cost of increases in premiums for the Payment Bond and the Performance Bond, provided coverage for the cost of the change in 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 premiums shall not be marked up.

12.4.7 In the event that it is necessary to increase the Contract Time in order to perform the change in the Work, the Contractor shall provide an estimate of the increase in the Contract Time as part of the Proposed Change Order. The Contractor's request for a time extension shall be evaluated in accordance with the criteria described in Article 8.3, Claims for Time Extensions.

12.4.8 If the Contractor's Proposed Change Order is rejected by the Owner as being within the scope of the Work required by the Contract Documents, the Owner may, at its sole option and discretion, direct the Contractor to perform the Work which is the subject of the said Proposed Change Order, with claimed compensation to be accounted for pursuant to 12.6 and to be subject to the procedures of Article 13. The Contractor shall then promptly proceed with said Work. Nothing herein shall excuse the timely performance by the Contractor of the Work because any Proposed Change Order is pending.

12.5 CHANGE ORDER

12.5.1 A Change Order is a written order to the Contractor signed by the Owner, issued after execution of the Contract, authorizing a change in the Work or an adjustment in the Contract Sum and/or the Contract Time. The Contract Sum and the Contract Time may be changed only by Change Order. A Change Order signed by the Contractor indicates his agreement therewith, including the adjustment in the Contract Sum and/or the Contract Time. Change Orders shall be numbered consecutively by date of issuance by the Owner and shall, if applicable, indicate the number of the Field Order(s), Request for Proposal(s) and/or Proposed Change Order(s) to which they relate.

12.5.1.1 If the Owner determines that the Contractor's Proposed Change Order, submitted pursuant to Article 12.4 for a change in the Contract Sum or Contract Time, is acceptable, the Owner shall prepare and issue a Change Order which will authorize the Contractor to proceed with the change in the Work with the adjustment to Contract Sum and Contract Time stated in the Proposed Change Order, or as otherwise may be agreed upon by the parties. The amounts stated in the Change Order for the adjustment to Contract Sum and Contract Time for the change in the Work shall be binding on the parties.

12.5.2 After issuance of the Change Order, the Contractor shall ensure that the amount of the Performance and Payment Bond coverage has been revised to reflect the increase in the Contract Sum due to the Change Order. Notwithstanding the foregoing, Contractor's failure to do so shall not release any surety from its obligations under any bonds.

12.6 CHANGE DIRECTIVE

12.6.1 If Owner and Contractor cannot agree as to whether something constitutes a change to the Work originally contemplated by the Contract Documents, or if they cannot agree as to the adjustment to the Contract Sum or Contract Time required for what Owner acknowledges to be a change to the Work constituting Extra Work, Owner may, in his sole discretion, issue a written Change Directive directing Contractor to perform such work. Contractor shall then promptly proceed with the work at issue. Owner may elect, in its sole discretion, to have the compensation or claimed compensation for such work accounted for on either a time and material basis or lump sum basis as described in 12.6.2 and 12.6.3.

12.6.2 If Owner elects to have the compensation and/or claimed compensation accounted for on a time and materials basis, the following procedures apply:

12.6.2.1 Change Directive work, the compensation or claimed compensation for which is being accounted for on a time and material basis shall be performed, whether by the Contractor's forces or the forces of any of its Subcontractors' or Sub-subcontractors', at actual cost to the entity performing the Work (without any charge for administration, clerical expense, supervision or superintendent of any nature whatsoever). The percent mark-ups for the Contractor, Subcontractors and Sub-subcontractor's shall be as described in subparagraphs 12.4.4 and 12.4.5.

12.6.2.2 Prior to starting the Change Directive work on a time and material basis, the Contractor shall notify the Owner in writing as to what labor, materials, equipment or rentals are to be used for the change or claimed change in the Work. During performance, the Contractor shall submit to the Owner daily time and material tickets, which shall list the categories and amounts of labor and equipment for which Change Directive compensation is to be charged for the previous work day. Such tickets shall specifically include the following information: location and description of the change in the Work, the classification of labor employed, including names and social security numbers of laborers, labor trades used, man hours, wage rates, insurance, taxes and fringe benefits, equipment and materials suppliers' quotations with detailed break-out and pricing, rental equipment hours and rates, and materials quantities and unit prices and such other evidence of cost as the Owner may require.

12.6.2.3 The Contractor shall commence submission of daily time and material tickets immediately upon commencement of the Change Directive work and continue to submit them until completion of the Change Directive work. The Owner may require authentication of all time and material tickets and invoices by persons designated by the Owner for such purpose.

12.6.2.4 No payment will be made to the Contractor for any portion of the Change Directive work that Owner acknowledges to be Extra Work unless and until such daily time and material tickets and invoices are submitted. The submission of any such ticket or invoice shall not constitute an acknowledgment by the Owner that the items thereon were reasonably required for the Change Directive work.

12.6.2.5. For any work performed on a time and material basis, the Contractor shall submit its complete submission of the reasonable actual cost and time to perform the change in the Work within twenty (20) days after such Work has been completed. If Change Directive work includes both Work that Owner acknowledges to be Extra Work and work that Owner disputes to be Extra Work, Contractor shall clearly segregate its accounting for the two. The Owner shall review the costs and time submitted by the Contractor on the basis of reasonable expenditures and savings of those performing the Change Directive work. If such costs and time are acceptable to the Owner, or if the parties otherwise agree to the actual reasonable cost to perform the Change Directive work, a Change Order will be issued for the cost and time agreed upon. The amounts stated in the Change Order for the cost and time to perform the Change Directive work shall be binding upon the parties.

12.6.3 If Owner elects to have the compensation or claimed compensation accounted for on a lump sum basis, Owner may make a unilateral determination of a reasonable adjustment in Contract Sum and Contract Time due to the Change Directive. Any unresolved dispute about the reasonableness of Owner's unilateral determination shall be subject to Article 13, Claims and Dispute Procedure.

12.7 DECREASES AND WORK NOT PERFORMED (Deductive Change Orders)

12.7.1 Should it be deemed expedient by the Owner to decrease the dimensions, quantity of material or Work, or vary in any other way the Work required by the Contract Documents, the Owner may direct by written Change Order, such decreases to be made or performed without in any way affecting the validity of the Contract. The Contractor shall~~,~~ comply with the Change Order from the Owner. The difference in expense occasioned by such decrease shall be deducted from the amount payable under this Contract.

12.7.2 When Work is deleted from the Contract by Owner, the amounts to be credited to the Owner shall reflect the same current pricing as if the Work were being added to the Contract at the time the deletion is ordered, and Contractor shall provide documentation for a credit as specified in Article 12.5.4. If such deleted materials and equipment shall have already been purchased and stored on site and cannot be used in other projects, cannot be returned for credit or cannot be returned for credit at the price paid by the Contractor at the time of purchase, the Contractor shall be entitled, upon proper documentation and certification, to an adjustment in the pricing of the credit to avoid hardship to the Contractor. If necessary in order to establish such reasonable value, the Contractor may be required to submit a detailed breakdown of his original bid and all documents upon which Contractor's bid was based for the items or Work involved.

12.7.3 If Work is not performed, and such deletion of Work was not directed or approved by the Owner, the Owner shall ascertain the amount of the credit due.

12.8 CHANGES IN LINE AND GRADE

12.8.1 The Owner reserves the right to make such alterations in the line and grade of various structures or pipe lines shown on the drawings, as may be necessitated by conditions found during construction or that in the judgment of the Owner appears advisable. Such alterations shall in no way affect the validity of the Contract

12.8.1.1 In case of a unit price contract, if such changes increase the amount of the Work or materials, the Contractor will be paid according to the quantity of Work actually done at the prices established for such Work under the Contract.

12.8.1.2 In case of a lump sum contract, the price for the Work shall be determined as specified in Article 12.4, Proposed Change Order.

12.9 SUBSURFACE CONDITIONS FOUND DIFFERENT

12.9.1 Should the Contractor encounter subsurface and/or latent conditions at the site materially differing from those shown on the drawings or indicated in the specifications, he shall immediately give Notice to the Owner of such conditions before they are disturbed. The Owner shall thereupon promptly investigate the conditions and if he finds that they materially differ from those shown on the drawings or indicated in the specifications, he shall at once make such changes in the drawings and/or specifications as he may find necessary. Any increase or decrease of cost resulting from such changes shall be adjusted in the manner provided herein for adjustments as to extra and/or additional work and changes. Notwithstanding the foregoing, if the Contract Documents indicate elsewhere that excavation is to be on an unclassified basis, Contractor shall not be entitled to any adjustment to the Contract Sum or Contract Time based upon this 12.9.

12.10 OTHER CLAIMS

If the Contractor claims that additional cost or time is involved because of, but not limited to, (1) any written interpretation pursuant to Article 2, Architect/Engineer, (2) any order by the Owner to stop the Work pursuant to Article 3, Owner, where the Contractor was not at fault, (3) failure of payment by the Owner pursuant to Article 9 Payments and Completion, or (4) any written order for a minor change in the Work issued pursuant to Article 12.8, Changes in Line and Grade~~;~~, the Contractor shall make such claim as provided in Section 12, Changes and Modification in the Work~~.~~, and Article 13, Claims and Dispute Procedure.

ARTICLE 13 CLAIMS AND DISPUTE PROCEDURE

Any Claims by the Contractor arising under or relating to the Contract or the Contract Documents shall only be resolved as follows:

13.1. INITIAL NOTICE, SUBMISSION OF CLAIM, AND CONSIDERATION.

a. The Contractor shall give the Owner and the A/E written notice of any Claim within ten (10) days of the beginning of the occurrence of the event leading to the Claim. The written notice shall be a document from the Contractor addressed to the Owner's and A/E's officials or employees designated by the Contract Documents to receive such notice, or if no one is so designated, to the Owner's City Manager and to the A/E. The written notice shall clearly state the Contractor's intention to make a claim, shall describe the occurrence involved, and shall be transmitted in a manner to ensure receipt by the Owner and A/E within the ten (10) days. The Contractor shall submit the Claim and any supporting data to the Owner and A/E within thirty (30) days after the occurrence giving rise to the Claim ends. The burden shall be on the Contractor to substantiate that it has given written notice and submitted its Claim in accordance with this provision.

b. The Claim must (i) be certified under oath as true and correct by a principal of Contractor; (ii) must be for specific relief; (iii) if any money is sought, must specify the dollar amount sought; and (iv) must contain sufficient supporting documentation to reasonably allow its consideration, including without limitation, any documentation required by the Contract Documents. The burden shall be on the Contractor to substantiate the Claim.

c. The Contractor shall comply with all other terms and conditions of the Contract Documents, including without limitation, those in Articles 8 and 12, as applicable. No decision by the A/E on

a claim shall be binding on the Owner, but such decision shall have whatever effect on the Contractor that the Contract Documents provide.

d. Following consideration by the A/E, and following initial, informal consideration by the Owner's City Manager or his designee, the parties shall endeavor to resolve any Claim through direct negotiations, and if such direct negotiations fail, and if the Owner requests, by non-binding mediation conducted pursuant to the Rules of the American Arbitration Association, with the site of the mediation being Lynchburg, Virginia.

e. Should the Claim remain unresolved for more than 60 days after it is submitted, then the City Manager or his designee shall, within no later than 90 days after the Claim's submission, render a written decision on the Claim on behalf of the Owner . The Contractor may not institute any legal action with respect to the Claim until after the City Manager or his designee renders his written decision or 90 days from its receipt by the City Manager has passed, whichever comes first. The only effect of the failure by the City Manager or his designee to render a decision within this 90-day period is to allow the Contractor to institute a legal action pursuant to this provision without having to wait for a decision on the Claim concerned.

13.2 APPEAL OF DENIAL OF CLAIM.

a. If the Owner denies in whole or part a Claim by Contractor or more than 90 days have passed since the Claim was received by the City Manager but no written decision has been issued, the Contractor may appeal denial of the claim by instituting an action in the Lynchburg Circuit Court, Lynchburg, Virginia, or if the subject or amount in controversy is within its jurisdiction, the Lynchburg General District Court, Lynchburg, Virginia, and may thereafter pursue all available appeals in Virginia state courts, to the extent they have jurisdiction.

b. The Contractor must initiate its appeal of the Claim within 180 days of the date it first has the right to do so or the Claim will be barred and the Owner’s decision will be binding and conclusive.

c. The Contractor may not amend its Claim on appeal to increase the amount of money sought.

d. In the event of any Claim arising, Contractor shall continue its performance diligently during such Claim's pendency and thereafter as if no Claim had arisen. During the pendency of any Claim in connection with the payments of moneys, Contractor shall be entitled to receive payments for non-disputed items, subject to any right of set-off by Owner.

13.3 Notwithstanding anything in the Contract Documents to the contrary, the Owner may, in its discretion, assert a Claim without first resorting to any procedures contained in the Contract Documents.

13.4 "Claim" means a "claim" as defined in the Lynchburg Public Procurement Code.

13.5 Notwithstanding anything in the Contract Documents to the contrary, Owner shall not be liable to Contractor for any damages or increase in the Contract Sum due to delays to Contractor, any Subcontractor, or any other person except due to extent required by Virginia Code § 2.2-4335.

ARTICLE 14 UNCOVERING AND CORRECTION OF WORK

14.1 UNCOVERING OF WORK

14.1.1 If any portion of the Work should be covered contrary to: (1) the request of the A/E or Owner; (2) requirements specifically expressed in the Contract Documents; or (3) the requirements of applicable

permits, it must, if required in writing by the Owner, be uncovered for the Owner's and A/E's observation and shall be replaced at the Contractor's expense.

14.1.2 If any other portion of the Work has been covered which the Owner has not specifically requested to observe prior to being covered, the Owner may request to see such Work and it shall be uncovered by the Contractor. If such Work be found in accordance with the Contract Documents, the cost of uncovering and replacement shall, by appropriate Change Order, be charged to the Owner. If such Work be found not in accordance with the Contract Documents, the Contractor shall pay such costs unless it is found that this condition was caused solely by the Owner, in which event the Owner shall be responsible for the payment of such costs. If such Work be found not in accordance with the Contract Documents and the condition was caused by a separate contractor, Contractor may proceed against said separate contractor as provided in Article 6, Work by Owner or by Separate Contractors.

14.2 WARRANTY AND CORRECTION OF WORK

14.2.1 The Contractor guarantees and warrants to the Owner all Work as follows:

.1 That all materials and equipment furnished under this Contract will be new and the best of its respective kind unless otherwise specified;

.2 That all Work will be of first-class quality and free of omissions and faulty, imperfect or defective material or workmanship;

.3 That the Work shall be entirely watertight and leakproof in accordance with all applicable industry customs and practices, and shall be free of shrinkage and settlement which are attributable to defective materials or workmanship;

.4 That the Work, including but not limited to, mechanical and electrical machines, devices and equipment shall be fit and fully usable for its intended and specified purpose and shall operate satisfactorily with ordinary care;

.5 That consistent with requirements of the Contract Documents the Work shall be installed and oriented in such a manner as to facilitate unrestricted access for the operation and maintenance of fixed equipment; and

.6 That the Work will be free of abnormal or unusual deterioration which occurs because of poor quality materials or workmanship.

14.2.2 All Work not conforming to guarantees and warranties specified in the Contract Documents, including substitutions not properly approved and authorized, may be considered defective. If required by the Owner, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment furnished and installed.

14.2.3 The Contractor shall within five (5) working days after receipt of written Notice from the Owner during the performance of the Work, reconstruct, replace or correct all Work rejected by the A/E or Owner as defective, as failing to conform to the Contract Documents, or as not in accordance with the guarantees and warranties specified in the Contract Documents , whether observed before or after Substantial Completion and whether or not fabricated, installed or completed. The Contractor shall bear all costs of reconstructing, replacing or correcting such rejected Work, including compensation for the A/E's additional services made necessary thereby.

14.2.4 If, within one (1) year after the Date of Final Completion of the Work or designated portion thereof or within one (1) year after acceptance by the Owner of designated equipment or within such longer period

of time as may be prescribed by law or by the terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be defective, not in accordance with the Contract Documents, or not in accordance with the guarantees and warranties specified in the Contract Documents, the Contractor shall correct it within five (5) working days after receipt of a written Notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition pursuant to 14.3, Acceptance of Faulty, Defective or Non-Conforming Work. This obligation shall survive termination of the Contract. The Owner shall give such Notice within a reasonable time after discovery of the condition.

14.2.5 Subject to limitation as prescribed by law, if at any time deficiencies in the Work are discovered which are found to have resulted from fraud or misrepresentation, or an intent or attempt to defraud the Owner by the Contractor, any Subcontractor or supplier, the Contractor will be liable for replacement or correction of such Work and any damages which Owner has incurred related thereto, regardless of the time limit of any guarantee or warranty.

14.2.6 Any materials or other portions of the Work, installed, furnished or stored on site which are not of the character or quality required by the specifications, or are otherwise not acceptable to the Owner, shall be immediately removed and replaced by the Contractor to the satisfaction of the Owner, when notified to do so by the Owner.

14.2.7 If the Contractor fails to correct defective or nonconforming Work as required by Articles 13.2.3 and 13.2.4, or if the Contractor fails to remove defective or nonconforming Work from the site, as required by Article 13.2.6, the Owner may elect to either correct such Work in accordance with Article 3.5, Owner’s Right to Carry Out the Work, or remove and store materials and equipment at the expense of the Contractor. If the Contractor does not pay the cost of such removal and storage within ten (10) days thereafter, the Owner may, upon ten additional days written Notice, sell such Work at auction or at public or private sale and shall account for the net proceeds thereof, after deducting the costs of the sale and all of the costs that should have been borne by the Contractor, including compensation for the A/E's additional services made necessary thereby. If such proceeds of sale do not cover all costs indicated in the previous sentence, the difference shall be charged to the Contractor and an appropriate Change Order shall be issued. If the payments then or thereafter due the Contractor are not sufficient to cover such amount, the Contractor or its surety shall pay the difference to the Owner.

14.2.8 The Contractor shall bear the cost of making good all work of the Owner, separate contractors or others, destroyed or damaged by such correction or removal required under this Article.

14.3 ACCEPTANCE OF FAULTY, DEFECTIVE OR NON-CONFORMING WORK

If the Owner prefers to accept faulty, defective or nonconforming Work, he may do so instead of requiring its removal and correction, in which case a Change Order will be issued at Owner's option, to reflect a reduction in the Contract Sum in an amount to be determined by the Owner.

ARTICLE 15 TERMINATION OF THE CONTRACT

15.1 CONTRACTOR'S RIGHT TO STOP WORK OR TERMINATE 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 providing services, materials or equipment through him, or if the Owner should fail to pay to the Contractor within thirty (30) days any sum for which a Certificate of Payment has been certified when no dispute exists as to the sum due and Owner has no right to withhold payment under any provision of the Contract Documents, then the Contractor may, upon ten (10) days written Notice to the Owner, 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.

15.2 OWNER'S RIGHT TO TERMINATE CONTRACT FOR CAUSE

15.2.1 The Owner may terminate the Contract for cause based upon any of the following grounds:

.1 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.

.2 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.

.3 If the Contractor should fail to make prompt payment to subcontractors or suppliers of material of labor.

.4 If the Contractor should disregard laws, ordinances, codes, regulations, or the written instructions of the Architect/Engineer or the Owner.

.5 If the Contractor be in substantial violation of any provision of the Contract Documents.

15.2.2 For termination for cause based upon the grounds in 15.2.1.1, Owner may terminate without prior notice and without giving Contractor any opportunity to rectify the basis for termination. For termination for cause based upon any other grounds, prior to termination of the Contract, the Owner shall give the Contractor and his surety Notice followed by a ten (10) day period 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. Notwithstanding the foregoing, 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 his surety that the basis for the termination will be remedied within a time and in a manner which the Owner finds acceptable. If at any time after such postponement, the Owner determines that Contractor and/or his 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 allowing any further opportunity by the Contractor and/or surety to rectify the basis for the 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.

15.2.3 Upon termination of the Contract, the Contractor shall immediately cease Work, and the Owner may take possession of the site and of all materials, tools and equipment thereon and finish the Work by whatever method he may deem expedient. In such case, the Contractor shall not be entitled to receive any further payment until the Owner has finally completed the Work through its own resources or those of a subsequent contractor. If the Owner's damages, including the expense of finishing the Work, compensation for additional design, managerial and administrative services, any liquidated damages, and any claims by the Owner, shall exceed the unpaid balance of the Contract Sum, the Contractor shall pay the difference to the Owner, together with any other expenses of terminating the Contract and having it completed by others. If the unpaid balance of the Contract Sum exceeds Owner's damages, including the costs of finishing the Work, compensation for additional design, managerial and administrative services,

any liquidated damages and any claims by Owner, together with any other expenses of terminating the Contract and having it completed by others, such excess shall be paid to the Contractor.

15.2.4 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, with Contractor's recovery limited to what is allowed for a termination for convenience under the Contract Documents.

15.2.5 Termination of the Contract under this Section is without prejudice to any other right or remedy of the Owner.

15.3 OWNER'S RIGHT TO TERMINATE CONTRACT FOR CONVENIENCE

15.3.1 Owner may terminate this Contract, in whole or in part, at any time without cause upon giving the Contractor written Notice of such termination. Upon such termination, the Contractor shall immediately cease Work and remove from the site all of its labor forces and such of its materials and equipment 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 through the date of termination.

.2 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 by the preceding sentence. Upon payment of the foregoing, Owner shall have no further obligations to Contractor of any nature.

15.3.2 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.

15.3.3 After receipt of a Notice of termination, the Contractor shall promptly submit to the Owner his termination claim. Such claim shall be submitted no later than forty-five (45) days from the effective date of termination. Upon failure of the Contractor to submit his termination claim within the time allowed, the Owner may determine, on the basis of information available to it, the amount, if any, due to the Contractor by reason of the termination.

15.4 CONTRACTOR'S RESPONSIBILITIES UPON TERMINATION

15.4.1 After receipt of a notice of termination pursuant to 15.3, Owner's Right to Terminate Contract for Convenience, the Contractor shall mitigate any damages to the extent reasonably possible.

15.4.2 In addition to the provisions of 15.4.1, the Contractor shall:

.1 At the option of the Owner, assign to the Owner, in the manner, at the time, and to the extent directed by the Owner, all of the right, title, and interest of the Contractor under the orders and subcontracts so terminated, in which case the Owner shall have the right, in its discretion, to settle or pay any or all claims arising out of the termination of such orders and subcontracts;

.2 Transfer title and deliver to the Owner in the manner, at the times, and to the extent, if any, directed by the Owner:

a) The fabricated or un-fabricated parts, work in process, completed Work, supplies, and other material and equipment procured as a part of, or acquired in connection with the performance of the Work terminated by the Notice of Termination, and

b) The completed or partially completed drawings, releases, information, manuals and other property which, if the Contract had been completed, would have been required to be furnished to the Owner;

.3 Complete performance of such part of the Work as shall not have been terminated by the Notice of Termination; and

.4 Take such action as may be necessary, or as the Owner may direct, for the protection and preservation of the property related to this Contract which is in the possession of the Contractor and in which the Owner has or may acquire an interest.

TECHNICAL SPECIFICATIONS

for

A TRADITION OF EXCELLENCE FOR ALL

LYNCHBURG CITY SCHOOLS

LYNCHBURG CITY SCHOOLS

STAGE UPGRADES

E.C. GLASS HIGH SCHOOL

December 19, 2014

MEAD Project No. 372-028

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PROFESSIONAL ENGINEER

TECHNICAL SPECIFICATIONS

for

STAGE UPGRADES

E.C. GLASS HIGH SCHOOL

December 19, 2014

MEAD Project No. 372-028

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END OF SECTION 000002

SECTION 000110

SUMMARY OF WORK

PART 1 - GENERAL

1.1 BID PACKAGE A SUMMARY OF WORK: This project will involve:

A. Rigging system
   1. Re-roping and reconfiguring the stage rigging system.
   2. Reconfiguring the conduit and cabling to the stage lighting electric battens.
   3. Addressing existing safety issues with the stage rigging system.

1.2 BID PACKAGE B SUMMARY OF WORK: This project will involve:

A. Replacing the performance lighting dimmer rack control electronics.
B. House lighting
   1. Providing and installing new house lighting dimmer racks.
   2. Providing and installing new house lights in the auditorium ceiling.
   3. Providing and installing electrical distribution
      a. From existing performance lighting dimmer rack to the new house light dimmer racks.
      b. From the new house light dimmer racks to the new house lights in the auditorium ceiling and existing house lights below and above the balcony.
   4. Providing and installing control wiring
   5. Constructing a platform above the auditorium ceiling to support the new dimmer racks and associated electrical distribution equipment.
C. Public address
   1. Providing and installing new speaker clusters and amp rack.
   2. Reworking the existing sound rack.
   3. Providing and installing signal wiring from the racks to associated input and output jacks.
   4. Providing and installing power wiring to the new audio rack and to speaker clusters requiring power.
D. Video
   1. Providing a new video projection system.
   2. Providing and installing signal wiring from an audio rack to the outlet jack for the video projector.
   3. Providing and installing power wiring to a power receptacle for the video projector.

1.3 SCHEDULE

A. Start work on site: June 8, 2015

B. Substantial completion: August 7, 2015

C. Final completion: August 21, 2015

PART 2 – PRODUCTS (Not used)

PART 3 – EXECUTION (Not used)

END OF SECTION 000110

SECTION 000123

ALTERNATES

PART 1 - GENERAL

1.1 ALTERNATES TO BID PACKAGE A PRICE will be received for the following work:

A. Add Alternate #1 - Provide a new pit cover platform system. Shown on drawings TR-109 and TR-110. Drawing titles are prefixed with "ADD ALTERNATE #1". Reference Specification Section 116123 – Theater Orchestra Pit Filler.

B. Add Alternate #2 - Move existing line sets to new locations. Shown on drawing TR-111. Drawing title is prefixed with "ADD ALTERNATE #2". Reference Specification Section 116133 - Stage Rigging, "WORK INCLUDED - BASE BID", "WORK INCLUDED - ADD ALTERNATE #2".

1.2 ALTERNATES TO BID PACKAGE B PRICE will be received for the following work:

C. Add Alternate #3 - Provide a new video system. Shown on drawing TS-104. Drawing title is prefixed with "ADD ALTERNATE #3". Reference Specification Section 274116 - Theatre AV System, "WORK INCLUDED - BASE BID", "WORK INCLUDED - ADD ALTERNATE #3".

PART 2 – PRODUCTS (Not used)

PART 3 – EXECUTION (Not used)

END OF SECTION 000123

SECTION 000850

DRAWING LIST

Sheet No.	**Description**
CS	Cover Sheet
Bid Package A	
TR-100	Existing Stage Rigging – Plan
TR-101	Existing Stage Rigging - Section
TR-102	Existing Stage Rigging - General Purpose Set Elevation
TR-103	Existing Stage Rigging - Stage Electric Set Elevation
TR-104	Existing Stage - Front of House Plan
TR-105	New Stage Rigging - Plan
TR-106	New Stage Rigging - General Purpose Set Elevation
TR-107	New Stage Rigging - Stage Electric Set Elevation
TR-108	New Stage Rigging - House Rigging Plan
TR-109	Existing Orchestra Pit Plan
TR-110	New Orchestra Pit Platform Plan
TR-111	Alternate Stage Rigging Plan
Bid Package B	
TL-100	Existing Stage Lighting - System Oneline
TL-101	Existing Stage Lighting - Stage Plan
TL-102	Existing Stage Lighting - Lighting Circuit Strips
TL-103	Existing Stage Lighting - House Lighting Plan
TL-104	Existing Stage Lighting - Stage Lighting Battens Elevation
TL-105	New Stage Lighting - System Oneline
TL-106	New Stage Lighting - House Lighting System Oneline

TL-107 New Stage Lighting - Under Balcony House Plan

TL-108 New Stage Lighting - Stage Plan

TL-109 New Stage Lighting - Lighting Circuit Strips

TL-110 New Stage Lighting - House Lighting Plan

TL-111 New Stage Lighting - Stage Lighting Battens Elevation

TS-100 AV System - New Speaker Arrays

TS-101 AV System - New Amps And Speaker Outline

TS-102 AV System - Rework Existing Sound Rack Oneline

TS-103 AV System - Rack Elevations And Plate Details

TS-104 AV System - New Video System

E0.1	Legend, Notes, Abbreviations & Drawing List
E1.0	One Line Diagram - Existing Conditions
E1.1	Lighting - Basement - Existing Conditions
E1.2	Lighting - First Floor - Existing Conditions
E1.3	Lighting - Second Floor - Existing Conditions
E1.4	Lighting - Third Floor - Existing Conditions
E2.0	One Line Diagram - Reworked & Power Schedules
E2.01	Power & Light Fixture Schedules
E2.1	Lighting - Basement - Reworked Conditions
E2.2	Lighting, Sound & Video - First Floor - Reworked Conditions
E2.21	Lighting - First Floor - Reworked Conditions
E2.3	Lighting, Sound & Video - Second Floor - Reworked Conditions
E2.4	Lighting - Third Floor - Reworked Conditions

END OF SECTION 000850

SECTION 001039

COORDINATION AND MEETINGS

PART 1 - GENERAL

1.1 SECTION INCLUDES:

A. Coordination.

B. Progress Meetings.

C. Pre-installation Meetings.

D. Pre-construction Meetings.

E. Monthly Pay Meeting.

1.2 RELATED SECTIONS:

A. Section 001700 – Contract Close-out

1.3 COORDINATION

A. Coordinate scheduling, submittals and work of the various sections of specifications to assure efficient and orderly sequence of installation of interdependent construction elements.

B. Contractor shall submit schedules for each phase; to be updated at each progress meeting.

C. Verify that utility requirement characteristics of operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to and placing in service such equipment.

D. Coordinate completion and clean-up of work of separate sections in preparation for final completion and inspection.

1.4 PROGRESS MEETINGS:

A. Contractor shall schedule progress meetings throughout progress of the Work at regular intervals, minimum of two per month. The monthly pay meeting, required by the General Conditions, may serve as a progress meeting. Coordinate scheduled meeting dates with Lynchburg City School and Engineer.

B. Contractor shall provide a brief summary, in narrative form, of progress since the previous meeting and report on project work for the next two weeks.

C. Attendance Required: Job superintendent, major Subcontractors and suppliers, representatives of the Lynchburg City Schools and the Engineer, as appropriate to agenda topics for each meeting.

D. Agenda: Review and correct or approve minutes of the previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to the status of the Project.

1. Schedule.
2. Issues.
3. Requests for Information.
4. Requests for Proposal.
5. Estimated Change Orders.
6. Change Orders.
7. Submittals.
8. Applications for Payment.
9. Safety, Security and Conduct.
10. Coordination with Lynchburg City Schools

1.5 PRE-CONSTRUCTION MEETING:

A. The pre-construction meeting, required by the General Conditions, will be scheduled by the Lynchburg City Schools. Owner will schedule the meeting after Notice of Award prior to starting construction.

B. Attendance Required: Owner's representative, Engineer, General Contractor, major Sub-contractors.

C. Agenda:

1. Construction schedules
2. Critical work scheduling
3. Major material deliveries
4. Designation of personnel representing parties in Contract
5. Procedures and processing of field decisions
6. Use of premises by Owner and Contractor
7. Owner's requirements and occupancy
8. Construction facilities and controls provided by Owner
9. Temporary utilities provided by Owner
10. Material data sheets on all products and materials that are to be brought on site

1.6 MONTLY PAY MEETING

A. The monthly pay meeting, required by the General Conditions, will be scheduled by the Lynchburg City Schools.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION 001039

SECTION 001040

REMOVAL AND RESTORATION

PART 1 - GENERAL

1.1 GENERAL:

A. Remove portions of facility and equipment necessary to make way for new construction indicated or specified, or as may become necessary to accomplish desired results. No extra charge may be made for removal work not specifically indicated or specified.

1.2 REQUIREMENTS:

A. Removal shall be carried out with care so that portions of building that are to remain will be undamaged. Debris shall be removed by the Contractor as required by the Owner. Debris shall not accumulate to extent it will interfere with work or passage of occupants of building.

B. New work shall be carefully installed with materials that match existing and conform to existing planes, unless indicated otherwise. Existing ceiling, wall and floor finish or trim that is disturbed or destroyed by these operations shall be replaced with material to match existing at no additional cost to Owner.

C. Connecting work and new work in extension of existing work shall correspond in all respect with that to which it connects, or similar existing work, unless other wise indicated or specified. Existing work shall be cut, drilled, altered or temporarily removed and replaced as necessary for performance of contract. No structural member shall be cut or altered without authorization of Owner. Any penetration of fire walls or other such structures shall be restored in Work remaining in place that is damaged or defaced by work under this Contract shall be restored equal to condition at time of award of Contract. If removal of existing work exposes discolored, unfinished surfaces or work out of alignment, such surfaces shall be refinished or material replaced as necessary to make contiguous work uniform and harmonious.

1.3 SALVAGE:

A. Owner assumes no responsibility for loss or damage to materials or structures on site.

B. All existing items, materials and equipment, located in altered areas of the project that the Owner does not want to retain will become the property of the Contractor and shall be removed from the premises.

1.4 COOPERATION WITH OWNER:

A. It is expected that the construction of the proposed project will be performed while facilities are in use, and, therefore, the Contractor shall give full cooperation to the Owner in scheduling and performing the work.

B. The Contractor shall provide, install and maintain safety and dust barriers as required by applicable health and safety regulations.

C. The Contractor shall schedule his work and deliveries so as not to interfere with the normal operation of the facilities.

D. The Contractor shall give twenty-four hours advance notice to Owner when work is to be performed which might endanger occupants.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 001040

SECTION 001045

CUTTING AND PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

A. Drawings, Project Manual, and other Sections of Division I, General Requirements, of these Specifications apply to the work specified in this Section.

1.2 DESCRIPTION OF REQUIREMENTS:

A. Definition: "Cutting and Patching" includes cutting into existing construction to provide for the installation or performance of other work and subsequent fitting and patching required to restore surfaces to their original condition.

1. "Cutting and Patching" is performed for coordination of the work, to uncover work for access or inspection, to obtain samples for testing, to permit alterations to be performed or for other similar purposes.
2. Cutting and patching performed during the manufacture of products, or during the initial fabrication, erection or installation processes is not considered to be "cutting and patching" under this definition. Drilling of holes to install fasteners and similar operations are also not considered to be "cutting and patching".

B. Refer to other sections of these Specifications for specific cutting and patching requirements and limitations applicable to individual units of work.

1.3 QUALITY ASSURANCE:

A. Requirements for Structural Work: Do not cut and patch structural work in a manner that would result in a reduction of load-carrying capacity or of load - deflection ratio.

B. Before cutting and patching structural work, obtain an Engineer's approval to proceed as described in the procedural proposal for cutting and patching.

C. Operational and Safety Limitations: Do not cut and patch operational elements or safety related components in a manner that would result in a reduction of their capacity to perform in the manner intended, including energy performance, or that would result in increased maintenance, decreased operational life or decreased safety.

D. Visual Requirements: Do not cut and patch work exposed on the building's exterior or in its occupied spaces, in a manner that would, in an Engineer's opinion, result in lessening the building's aesthetic qualities. Do not cut and patch work in a manner that would result in substantial visual evidence of cut and patch work. Remove and replace work judged by the Engineer to be cut and patched in a visually unsatisfactory manner.

PART 2 - PRODUCTS

2.1 MATERIALS: Except as otherwise indicated, or as directed by an Engineer, use materials for cutting and patching that are identical to existing materials. If identical materials are not

available, or cannot be used; submit samples from available products to Engineer for approval. Use materials for cutting and patching that will result in equal-or-better performance characteristics.

PART 3 - EXECUTION

3.1 **PROTECTION:** Protect other work during cutting and patching to prevent damage. Provide protection from adverse weather conditions for that part of the project that may be exposed during cutting and patching operations.

3.2 **CUTTING:** Cut the work using methods that are least likely to damage work to be retained or adjoining work. Where possible, review proposed procedures with the original installer; comply with original installer's recommendations. Holes cut through concrete and/or masonry to accommodate new work shall be cut by rotary or reciprocating motor driven, non percussive methods.

3.3 Patching of area disturbed by installation of new work and/or removal of existing materials shall match existing adjacent surfaces as to construction, material, texture and color. Open spaces between pipe/conduits and existing masonry materials shall be patched with non-shrink grout.

3.4 **PATCHING:** Patch with seams which are durable and as invisible as possible. Comply with specified tolerances for the work. Where feasible, inspect and test patched areas to demonstrate integrity of work.

3.5 **RESTORATION:** Restore exposed finishes of patched areas and where necessary extend finish restoration into retained adjoining work in a manner which will eliminate evidence of patching and refinishing.

3.6 **CLEANING:** Thoroughly clean areas and spaces where work is performed or used as access to work. Completely remove paint, mortar, oils, putty, and items of similar nature. Thoroughly clean piping, conduit and similar features before painting or other finishing is applied. Restore damaged pipe covering to its original condition.

3.7 **Asbestos:** The Contractor shall notify the Owner immediately if suspected asbestos-containing material is encountered during the progress of work performed under this Contract. Such materials shall not be disturbed. Work progress in the immediate area of conflict with the suspected materials shall be suspended until the Owner has addressed the situation.

END OF SECTION 001045

SECTION 001070

SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SECTION INCLUDES:

A. Demolition requires the selective removal and subsequent off site disposal of materials, systems and existing construction as identified on the Drawings.

1.2 RELATED SECTIONS:

A. Documents affecting work of this section include, but are not necessarily limited to, Drawings and Project Manual.

1.3 SUBMITTALS:

A. Schedule: Submit schedule indicating proposed methods and sequence of operations for selective demolition work to Owner's Representative for review prior to commencement of work. Include coordination for shut-off, capping, and continuation of utility services as required, together with details for dust and noise control protection.

1. Provide detailed sequence of demolition and removal work to ensure uninterrupted progress of Owner's on-site operations.
2. Coordinate with Owner's continuing occupation of portions of existing building.

1.4 PROJECT CONDITIONS:

A. Occupancy: Owner will be continuously occupying areas of the building immediately adjacent to areas of selective demolition. Conduct selective demolition in manner that will minimize need for disruption of Owner's normal operations. Provide minimum of 72 hours advance notice to Owner of demolition activities which will impact Owner's normal operations.

B. Condition of Structures: Owner assumes no responsibility for actual condition of items to be demolished.

C. Partial Demolition and Removal: Items indicated to be removed but of salvable value to Contractor and not wanted by the Owner, may be removed from structure as work progresses. Transport salvaged items from site as they are removed. Storage or sale of removed items on site will not be permitted.

D. Protections: Provide temporary barricades and other forms of protection as required to protect Owner's personnel and general public from injury due to selective demolition work.

1. Provide protective measures as required to provide free and safe passage of Owner's personnel and public to and from occupied portions of building.
2. Protect from damage existing finish work that is to remain in place and becomes exposed during demolition operations.

3. Protect floors with suitable coverings when necessary.
4. Protect furnishings, fixtures, equipment and materials and floor below.

E. Damages: Promptly repair damages caused to adjacent facilities by demolition work at not cost to Owner.

F. Utility Services: Maintain existing utilities indicated to remain, keep in service, and protect against damage during demolition operations. Do not interrupt utilities serving occupied or used facilities, except when authorized in writing by authorities having jurisdiction. Provide temporary services during interruptions to existing utilities, as acceptable to governing authorities.

PART 2 – PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION: Prior to commencement of selective demolition work, inspect areas in which work will be performed. Photograph existing conditions of surfaces, equipment, and surrounding construction which could be misconstrued as damage resulting from selective demolition work; file with Owner's Representative prior to starting work.

3.2 PREPARATION: Cover and protect furniture, equipment and fixtures to remain from soiling or damage when demolition work is performed in rooms or areas from which such items have not been removed.

3.3 DEMOLITION: If unanticipated mechanical, electrical or structural elements which conflict with intended function or design are encountered, investigate and measure both nature and extent of the conflict. Submit report to Owner's Representative in written, accurate detail. Pending receipt of directive from Owner's Representative, rearrange selective demolition schedule as necessary to continue overall job progress without delay.

3.4 DISPOSAL OF DEMOLISHED MATERIALS: Remove debris, rubbish and other materials resulting from demolition operations building site. Transport and legally dispose of materials off site. Burning of removed materials is not permitted on project site.

3.5 CLEAN-UP AND REPAIR:

A. Upon completion of demolition work, remove tools, equipment and demolished materials from site. Remove protections and leave interior areas broom clean.

B. Repair demolition performed in excess of that required. Return structures and surfaces to remain to condition existing prior to commencement of selective demolition work. Repair adjacent construction or surfaces soiled or damaged by selective demolition work.

END OF SECTION 001070

SECTION 001300

SUBMITTALS

PART 1- GENERAL

1.1 SECTION INCLUDES

A. Submittal procedures.

B. Construction progress schedules.

C. Proposed products list. (if applicable)

D. Shop drawings.

E. Product data.

F. Samples.

G. Manufacturer’s instructions

H. Manufacturer's certificates.

1.2 RELATED SECTIONS

A. Section 001700 - Contract Close-out: Contract warranty and manufacturer's certificates closeout submittals.

1.3 SUBMITTAL PROCEDURES

A. Transmit each submittal with Engineer accepted form to the Engineer.

B. Identify project, contractor, subcontractor or supplier; pertinent drawing sheet and detail number(s), and specification section number, as appropriate.

C. Apply contractor's stamp, signed or initialed certifying that review, verification of products required, field dimensions, adjacent construction work, and coordination of information, is in accordance with the requirements of the work and contract documents.

D. Schedule submittals to expedite the project, and deliver to Engineer at business address.

E. Identify variations from Contract Documents and Product or system limitations which may be detrimental to successful performance of the completed work.

F. Include copy of Show Drawing Review Stamp Sheet as found in Part 4 of this Section with contractors’ sections executed certifying to review of submittal, verification of products, field measurements and field construction criteria, and coordination of the information within the submittal with requirements of the work and of Contract Documents.

G. Revise and resubmit submittals as required, identify all changes made since previous submittal.

H. Distribute copies of reviewed submittals to concerned parties. Instruct parties to promptly report any inability to comply with provisions.

1.4 CONSTRUCTION PROGRESS SCHEDULES

A. Submit initial progress schedule in duplicate within 15 days after date of Notice to Proceed for Engineer review.

B. Revise and resubmit as required.

C. Submit revised schedules with each Application for Payment, identifying changes since previous version.

1.5 SHOP DRAWINGS

A. Submit to the Engineer the number of opaque reproductions which Contractor requires, plus three copies.

B. After review, distribute in accordance with Article on Procedures above two (2) copies of all approved and rejected submittals to the University Construction Manager.

1.6 MANUFACTURER'S INSTRUCTIONS

A. When specified in individual specification sections, submit manufacturers' printed instructions for delivery, storage, assembly, installation, adjusting and finishing, in quantities specified for Product Data.

B. Identify conflicts between manufacturer's instructions and Contract Documents.

1.7 MANUFACTURER'S CERTIFICATES

A. When specified in individual specification sections, submit manufacturers' certificate to Engineer for review, in quantities specified for Product Data.

B. Indicate that material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.

C. Certificates may be recent or previous test results on material or product, but must be acceptable to Engineer.

1.8 OPERATIONS AND MAINTENANCE MANUALS

A. Submit the number of opaque reproductions which Contractor requires, plus four copies.

B. After review distribute in accordance with Article on Procedures above and for Record Documents described in Section 01700 - Project Closeout.

PART 2 – PRODUCTS (Not used)

PART 3 – EXECUTION (Not used)

PART 4 - SHOP DRAWING REVIEW STAMP SHEET

4.1 See following page.

GENERAL CONTRACTOR'S SHOP DRAWING REVIEW			
PROJECT NO.:			
PROJECT NAME: Stage Upgrades - E.C. Glass High School, Lynchburg, VA			
SPEC SECTION NO. & NAME			
APPROVED	☐	APPROVED AS NOTED	☐
GENERAL CONTRACTOR'S COMPANY NAME: _____ By:_____ Date:_____			

SUB-CONTRACTOR'S SHOP DRAWING REVIEW			
PROJECT NO.:			
APPROVED	☐	APPROVED AS NOTED	☐
SUB-CONTRACTOR'S COMPANY NAME: _____ By:_____ Date:_____			

The fields above shall be completed before associated shop drawings are submitted.

ENGINEER'S SHOP DRAWING REVIEW			
PROJECT NO: 372-028			
SPECIFICATION SECTION			
APPROVED	☐	APPROVED AS NOTED	☐
NOT APPROVED	☐	REVISE & RESUBMIT	☐
Approval is only for conformance with the design concept of the project and compliance with the information given in the Contract Documents. Contractor is responsible for dimensions to be confirmed and correlated at the job site; for information that pertains solely to the fabrication process or to techniques of construction; and for coordination of the work of all trades. Master Engineers and Designers, Inc. By: _____ Date:_____			

END OF SECTION 001300

SECTION 001500

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART I - GENERAL

1.1 SECTION INCLUDES

A. Temporary Utilities: Electricity, lighting, heating, cooling, ventilation, telephone service, water and sanitary facilities.

B. Construction Support Facilities: Field offices, temporary barriers, closures and parking.

C. Security: Temporary controls, protection of work, cleaning, restoration, environmental protection, and fire protection.

1.2 RELATED DOCUMENTS

A. Drawings, Project Manual, other Division 1 specifications sections, apply to work specified in this section.

1.3 TEMPORARY MATERIALS: Temporary materials may be new or used, but must be adequate in capacity for required usage, must not create unsafe conditions, and must not violate requirements of applicable codes and standards.

1.4 TEMPORARY ELECTRICITY

A. The Owner will provide the Contractor with electricity for construction use. The Contractor is responsible for coordinating work related electrical requirements and protecting the building within the limits of available electrical power, without compromising the Owner's need for electricity. The Contractor is responsible for energy conservation and reasonable construction use of electrical power. Should the Owner determine an unreasonable or excessive use of electricity, the Contractor shall pay for additional power above the reasonable amount. Should the Contractor's use of electricity required for work exceed the limits of available power in the building, the Contractor shall reduce power consumed and/or pay for such modifications as required to eliminate compromising the Owner's system.

B. Existing receptacles may be utilized as source of temporary electric service for remodeling work within existing building.

C. Contractor shall replace receptacle plates and wiring devices damaged during construction.

D. Contractor shall provide lighting to ensure safe construction operations and to allow proper finishing operations.

E. The portion of the permanent lighting system may be utilized during construction.

F. Existing lighting system may be utilized for temporary lighting for remodeling work within existing building. Any damage to existing lighting must be repaired.

G. All temporary wiring shall be removed before completion of project.

1.5 TEMPORARY WATER

A. The Owner will provide the Contractor with existing source(s) of water for construction use. The Contractor is responsible for coordinating work related temporary water requirements and protecting the building within the limits of available water resources, without compromising the Owner's need for water. The Contractor is responsible for water conservation and reasonable construction use when utilizing temporary or permanent water supply systems. Should the Owner determine an unreasonable or excessive use of water, the Contractor shall pay for water usage and related sewer costs above the reasonable amount. Should the Contractor's use of water required for work exceed the limits of available water to the building, the Contractor shall reduce water consumed and/or pay for such modifications as required to eliminate compromising the Owner's system ability to meet water requirements for existing services.

B. The Contractor shall be responsible for connecting to the service point or system designated by the Facilities Operations Department, and for furnishing, installing, and removing all temporary service required for water during construction, including protection of potable water system.

C. All temporary piping shall be removed before completion of the project.

1.6 TEMPORARY SANITARY FACILITIES

A. Provide and maintain temporary sanitary facilities and enclosures outdoors.

B. Existing and permanent, Lynchburg City Schools, interior facilities are not available for use.

1.7 TEMPORARY BARRIERS AND CLOSURES

A. Provide barriers to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from damage from construction operations.

1. Barriers:
   a. Furnish, install, and maintain suitable barriers as required to prevent public entry, to provide for public safety, and to protect the Work.
   b. Install facilities of a neat and reasonably uniform appearance, structurally adequate for the required purposes.
   c. Maintain barriers during entire construction period.
   d. Relocate barriers as required by progress of construction.
   e. Completely remove barricades, when construction has progressed to the point that they are no longer needed and when approved by the OEHS representative.
   f. Clean and repair damage caused by installation.

B. Interior Closures:

1. Provide temporary barriers to separate construction areas from Owner occupied areas, to prevent penetration of dust into occupied areas, to prevent entry of

unauthorized persons in construction areas, and to prevent damage to existing materials and equipment.

2. Construct of adequate framing and surface with non-combustible materials having closed joints and sealed edges at intersections with existing surfaces.
3. Closures with fire-rated corridors shall meet fire-rating equivalents.
4. Paint surfaces exposed to view in occupied areas in colors directed by the Owner.

1.8 TEMPORARY PARKING

A. Temporary parking is limited to Contractor's trade vehicles. Arrangements will be made during pre-construction meeting for location and quantity.

B. Parking violators are subject to towing and fines.

1.9 TEMPORARY CONTROLS

A. Site Dust Control:

1. Execute Work by methods to minimize raising dust from construction operations.
2. Provide positive means to prevent air-borne dust from dispersing into atmosphere.

B. Security:

1. Provide security and facilities to protect Work and existing premises from unauthorized entry, vandalism, and theft.
2. Conduct operations in manner to avoid risk of loss, theft, or damage by vandalism.

C. Noise Control:

1. Execute Work as quietly as practicable to avoid unnecessary disturbances to occupants within premises.
2. High-level noise operations must be performed in accordance with local regulations and must be approved by Owner prior to proceeding.
3. Loud noise and vibrations, which cause disturbance must be controlled and coordinated in advance with the Owner.

1.10 PROTECTION OF INSTALLED WORK

A. Protect installed Work in manner to prevent damage from construction operations.

B. Provide special protection where specified in individual Specifications section.

C. Provide temporary and removable materials for protection of installed products. Control activity in immediate work area to minimize damage.

D. Protect finished Work from damage, defacements, stains, scratches, and wear.

E. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from weatherproofing or roofing material manufacturer.

F. Prohibit traffic on lawn and landscaped areas.

1.11 TEMPORARY INSTALLATION

A. Install, maintain, and operate temporary utilities and services to ensure continuous operation. Modify and extend systems as Work progresses.

B. Access Provisions: Provide ramps, flooring, stairs, ladders, and similar temporary access elements as reasonably required to perform the Work and facilitate its inspection during installation. Comply with reasonable requests of governing authorities performing inspections. Permanent stairs are available for access during construction, cover finished surfaces with sufficient protection during construction.

C. Install temporary facilities and controls in manner to produce reasonable uniform appearance, structurally adequate for required purposes, and properly maintained.

D. Modify and relocate temporary facilities and controls as necessary to accommodate progress of Work.

1.12 CLEANING, REMOVAL AND RESTORATION

A. Maintain construction site in a clean and orderly manner. Provide for routine removal of trash and construction debris. Provide appropriate waste receptacles and containers on site. Remove all containers prior to Substantial Completion Inspection.

B. Remove all temporary utilities, equipment, facilities, controls, and materials prior to Substantial Completion inspection.

C. Repair damage caused by installation or use of temporary work.

D. Restore existing facilities and equipment used during construction to original condition. Restore permanent facilities and equipment used during construction to specified condition.

1.13 ENVIRONMENTAL PROTECTION PROCEDURES

A. Provide facilities, establish procedures, and conduct construction activities in a manner which will ensure compliance with regulations controlling construction activities at project site. Designate one person, the construction superintendent or other, to enforce strict discipline on activities related to generating of wastes, pollution air/water/soil, generation of noise, and similar harmful or deleterious effects which might violate regulations or reasonably irritate persons at or in vicinity of project site.

1.14 FIRE PROTECTION

A. Provide and maintain adequate fire protection in the form of fire extinguisher or other effective means of extinguishing fire, ready for instant use, distributed around the project and in and about temporary inflammable structures during construction of work.

B. Fire Extinguisher: Provide types, sizes, numbers and locations as would be reasonably effective in extinguishing fires during early stages, by personnel at project site. Provide Type A extinguisher at locations of low potential for either electrical or grease-oil flammable liquid fires; provide Type ABC dry chemical extinguisher at other locations; comply with recommendations of NFPA No. 10. Post local fire department call number on each telephone instrument at project site.

C. Gasoline and other flammable liquids shall be stored and dispensed from UL listed safety containers in conformance with National Board of Fire Underwriters' recommendations. Storage shall not be within building.

D. Torch-cutting and welding operations performed by Contractor or Subcontractors shall have approval of Owner before such work is started, and chemical extinguisher shall be available at location where such work is in progress.

E. Open fires will not be permitted in or about the premises.

PART 2 - PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION 001500

SECTION 001600

MATERIALS AND EQUIPMENT

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Products

B. Transportation and handling

C. Product options

D. Products list

E. Substitutions

F. System demonstration

1.2 RELATED REQUIREMENTS

A. Drawings, Project Manual, and other Division 1 specification sections, apply to work of this Section.

1.3 PRODUCTS

A. Products include new materials, machinery, components, equipment, fixtures, and systems forming the Work. Does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work. Products may also include existing materials or components required for reuse or reconnection and materials furnished by Owner and installed by the Contractor.

B. Do not use products removed from existing premises, except as specifically permitted by the Contract Documents.

C. Comply with specifications and referenced standards as minimum requirements.

D. Components required to be supplied in quantity within a specification section shall be the same, and shall be interchangeable.

1.4 TRANSPORTATION AND HANDLING

A. Transport products by methods to avoid product damage; deliver in undamaged condition in manufacturer’s unopened containers to packaging, dry.

B. Provide equipment and personnel to handle products by methods to prevent soiling or damage.

C. Promptly inspect shipments to assure that products comply with requirements, quantities are correct, and products are undamaged.

1.5 STORAGE AND PROTECTION

A. Store and protect products in accordance with manufacturer's instructions, with seals and labels, intact and legible. Store sensitive products in weather-tight enclosures; maintain within temperature and humidity ranges required by manufacturer's instructions.

B. Provide off-site storage and protection when site does not permit on-site such conditions.

1.6 PRODUCT OPTIONS: Products Specified by Reference Standards or by Description Only: Any product meeting those standards.

1.7 PRODUCTS LIST: Within 10 days after date of Owner-Contractor agreement, submit complete list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.

1.8 SUBSTITUTIONS: Throughout this Specification, multiple acceptable manufacturer names are typically provided for the equipment. The names of manufacturers are provided to assist the contractor in determining the basis for the design and to establish the quality of the product.

1.9 SYSTEM DEMONSTRATION

A. Prior to final inspection, demonstrate operation of each system to Engineer and Owner.

B. Instruct Owner's personnel in operation, adjustment, and maintenance of equipment and systems, using the operation and maintenance data as the basis of instruction.

PART 2 – PRODUCTS (Not used)

PART 3 – EXECUTION (Not used)

END OF SECTION 001600

SECTION 001700

PROJECT CLOSE-OUT

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Close-out Procedures.

B. Final Cleaning.

C. Project Record Documents.

D. Operation and Maintenance Data.

1.02 RELATED REQUIREMENTS

A. Drawings, Project Manual, and other Division 1 specification sections, apply to work of this Section.

B. Section 001500 – Construction Facilities and Temporary Controls; 1.15: Cleaning, Removal and Restoration.

1.3 CLOSE-OUT PROCEDURES

A. Punch List Inspection: A punch list inspection will be conducted before acceptance and use of the spaces.

B. Comply with procedures stated in general conditions of the contract for issuance of certificate of *Substantial Completion*.

C. When Contractor considers work has reached final completion, submit written certification that contract documents have been reviewed, work has been inspected, and that work is complete in accordance with contract documents and ready for Engineer's and Owner's inspection.

D. In addition to submittals required by the conditions of the contract, provide submittals required by governing authorities, and submit a final statement of accounting giving total adjusted contract sum, previous payments, and sum remaining due.

E. Owner will occupy all portions of the building as specified in Section 001010 – Summary of Work.

F. Customer Final Acceptance – A *"Final Inspection Report"* (a copy is attached to the end of this section) will be provided to the Project Manager by the contractor once all punch list items are complete. The requester's acceptance signature will be obtained at this time. The Contractor shall provide warranty information, including a point of contact with the *"Final Inspection Report."*

1.4 FINAL CLEANING

A. Execute final cleaning before final inspection.

B. Clean interior and exterior surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces. Replace filters of mechanical equipment.

C. Clean equipment and fixtures to sanitary conditions.

D. Remove waste and surplus materials, rubbish, and construction facilities from the project and from the site.

E. Completely remove temporary materials and equipment when their use is not longer required.

F. Contractor shall restore to original condition any planting, utilities, roads and other facilities damaged as a result of his operations, at no additional cost to the Owner.

1.5 PROJECT RECORD DOCUMENTS

A. Maintain on site, one set of the following record documents; record actual revisions to the work:

1. Contract drawings
2. Specifications
3. Addenda
4. Change orders and other modifications to the contract
5. Reviewed shop drawings, product data and samples

B. Store documents separate from those used for construction.

C. Record information concurrent with construction progress.

D. Keep documents current; do not permanently conceal any work until required information has been recorded.

E. Specifications: Legibly mark and record at each product section a description of actual products installed, including the following:

1. Locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the work.
2. Field changes of dimension and detail.
3. Details not on original contract drawings.

1.6 OPERATION AND MAINTENANCE MANUALS: Submit operation and maintenance manuals as specified in technical specification sections.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 001700

SECTION 116123

THEATRE ORCHESTRA PIT FILLER

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

A. The provisions of the General Conditions, Supplementary Conditions, and the Sections included under Division 1, General Requirements, are included as a part of this Section as though bound herein.

1.02 INTENT

A. The Contractor shall provide all items, articles, materials, and operations listed, mentioned, or scheduled on the drawings and/or herein specified, including tools, scaffolding, labor, supervision, and incidentals necessary and required for their completion. All details of the installation shall be left in a finished condition, complete and ready for satisfactory operation. Any discrepancies and/or omissions in the drawings and/or specifications shall in no way be construed as authority to deviate from the intent of the contract, which is to provide a complete, first quality installation of an orchestra pit filler system.

1.03 WORK INCLUDED – BASE BID

A. None

1.04 WORK INCLUDED – ADD ALTERNATE #1

A. Without restricting volume or generality of above "intent", work to be performed under this section shall include, but not be limited to the following:

1. Furnish, deliver and install twenty portable platforms that comprise the orchestra pit filler system.
2. Furnish, deliver, and install all hard closure panels as specified herein & shown on the drawings.
3. Furnish, deliver, and install rigid casters and handrails for storage carts.
4. The Installation Contractor shall provide for the demonstration of the setup and breakdown of the orchestra pit filler.
5. The Installation Contractor shall provide the systems manuals.
6. The Installation Contractor shall provide the systems warranty.
7. Coordinate with Electrical Contractor for installation of safety edge lighting interface and relays into platform design.

1.05 SUMMARY

A. Delivered shall be one system designed to provide one working levels;
   1. A functioning level at stage height, Orchestra Pit Filler.

1.06 SYSTEM DESCRIPTION

A. Design requirements: portable interlocking platform system with detachable and interchangeable legs to create a single height platform area for each of the functioning levels described above.

B. Performance requirements: install platform system at height as shown on drawings and shall be capable of supporting a uniform vertical load of 125 lbs per square foot. Deck surface shall have a point load of 500 lbs on a 2” caster without leaving a permanent mark.

1.07 WARRANTY

A. Provide written warranty that products found to be not in accordance with the requirements of the contract documents within a period of 3 years after date of delivery shall be corrected promptly after receipt of written notice from owner.

1.08 PRIOR APPROVAL SUBMITTALS

A. The use of "brand names" has been held to a minimum in these specifications and when used are to establish a quality and performance standard. Items by other manufacturers not included in the Approved Manufacturers list may be used after written approval has been obtained from the Owner.

B. Substitutes shall be considered only when they are submitted fourteen days prior to bid date, and are accompanied by sufficient drawings, catalog data, specifications, and technical information for evaluation.

C. The Contractor shall show evidence of having successfully completed at least four similar projects within the last five years.

D. The Contractor shall present evidence upon request that he maintains a fully equipped service organization capable and willing to provide adequate inspection and service to the installed system, including replacement parts.

E. For purposes of this contract, Dealers, Jobbers, and Sales Representatives SHALL NOT be considered eligible participants.

1.09 QUALITY ASSURANCE

A. Due to their interrelated design, all the equipment in this specification shall be supplied and installed by one qualified manufacturer who shall be responsible for coordinating the required design and installation details.

B. Workmanship and finish must be first class in every particular and strictly in accordance with the best practices. Work shall be made in accordance with the reviewed shop

drawings. Work made in sections shall be carefully fitted together. Units shall be properly laid out and spaced between terminals.

C. The Contractor shall be responsible for verifying all existing conditions, measurements and other data as may be required for the proper execution of the work of this contract.

D. The job will be inspected periodically by the owner and/or his representative while work is in progress, and the Contractor shall accord his full cooperation in the examination of work and materials, which may include dismantling of the equipment for examination of component interior parts. Any equipment found not meeting the specification shall be removed immediately from the job.

E. The entire installation shall be made with the assistance of the factory-authorized representative of the equipment manufacturer. The equipment manufacturer's recommendations and instructions are to be fully implemented.

F. Only experienced installers shall be used on the work and a competent, experienced supervisor, having proven ability in handling jobs of this scope, shall be present during the entire installation.

1.10 SHOP DRAWINGS SUBMITTALS

A. After award of the contract, prepare and submit shop drawings to the owner and consultant for approval. These drawings shall be detailed and complete on all phases of the installation. The drawings shall include details of all hardware components. They shall be approved by the owner and consultant prior to fabrication, installation or erection has begun.

B. Approval of shop drawings does not relieve the Contractor of the responsibility of providing equipment in accordance with these specifications. Any deviations from the specifications shall be "starred" and noted in 1/4" high letters. Only deviations, which upgrade the quality of the equipment, shall be considered.

C. Product data: submit applicable documentation showing compliance with references standards, current performance data, application recommendation and product limitations.

D. Submit assembly and installation drawings showing product components in assembly with adjacent materials and products.

E. Shop drawings shall indicate dimensioned layouts, plans, and sections showing assembly and installation of components.

F. Individual components shall be detailed as required to illustrate materials, thickness, sizes, and methods of assembly or attachment to adjoining components.

PART 2 - PRODUCTS

2.01 JOB CONDITIONS

A. Take required measurements at the building. Consult with the various other Contractors whose work adjoins this work. This Contractor shall be responsible for the proper coordination of all details of the installation.

B. Perform drilling, fitting, and work of similar character required in the fitting and setting of the materials in place. Perform cutting and fitting required in connection with the fitting of these materials to the adjoining work of other Contractors.

C. Provide connecting members needed for properly supporting and securing the work to the masonry, joints, walls, structural members, or other parts of the building as may be best suited for each case.

2.02 APPROVED MANUFACTURERS

A. The following are approved manufacturers:

SECOA (TRS, INC.)
2731 Nevada Avenue North
Minneapolis, Minnesota 55427
(800) 546-5519

Wenger Corporation
555 Park Drive
P.O. Box 448
Owatonna, MN 55060
(800) 326-8373

Stage Right
495 Pioneer Parkway
Clare, MI 48617
800-438-4499

Staging Concepts
7008 Northland Dr.
Suite 150
Minneapolis, MN 55482
(866)629-9278

2.03 GENERAL REQUIREMENTS

A. All materials and equipment shall be furnished in the quantities needed to complete the scope of work.

B. All materials and equipment used in this project shall be new, unused and of the latest models and design. Refurbished materials and equipment are not permitted.

C. All electrical devices shall be UL listed and NEC approved.

D. Any item of equipment or hardware that may not be specifically shown on the drawings or specified herein but required for proper system operation or installation shall be furnished and installed and be of the highest quality available.

E. Prior to fabrication of materials, the Contractor shall visit the site and measure for the exact fit of all materials and assure himself of the appropriateness of the materials.

F. Machining and Finishing: Operating parts of all pit filler equipment shall be suitably machine finished. Tolerances fit and finish, where not specified, shall conform to good trade practices.

G. Where dimensions and loading capacities have been omitted from this specification, they are to be determined by the bidder in accordance with accepted industry standards and the guidelines in this section. In no way shall the Contractor be relieved of the primary responsibility to provide a safe, fully functional system.

H. All equipment shall be built and installed to facilitate future maintenance and replacement.

I. The mechanical fabrication and workmanship shall incorporate best practices for good fit and finish. There shall not be any burrs or sharp edges to cause a hazard nor there be any sharp corners accessible to personnel.

J. All finishes which are disturbed during shipping and installation shall be touched up to match the original.

2.04 STANDARD MANUFACTURED COMPONENTS

A. Decks

1. Each deck shall be 3/4 inch Plywood A/C exterior grade.
2. Deck shall attach to frame utilizing zinc-plated machine screws.
3. Deck surface shall be black Polyvinyl.
4. All platform materials, including decking undersides, shall meet or exceed Class “A” fire rating.

B. Frames

1. Frame shall be constructed of extruded structural aluminum with matte black finish. The extrusion shall be U-shaped in design for maximum strength and rigidity. The extrusion shall have edging to protect the perimeter of the deck materials. The extrusion shall have channels that allow for the attachment of accessories. Frame shall include integral aluminum brace located in center of platform mounted along the length of the longest dimension.
2. Frame shall be joined at the corners with a structural extruded aluminum leg pocket.

C. Leg Assemblies

1. Deck units shall be no longer than 4’-0” x 8’-0” and shall be provided with four (4) leg sockets to accept detachable legs.
2. The legs shall be fabricated from 1 ¼” Schedule 40 aluminum pipe, or tubing, with mill finish.
3. Each leg shall be equipped at the bottom with screw type adjustable foot with threaded rod to allow for fine adjustments to compensate for minor floor irregularities, with a minimum of 1 ½” of fine height adjustment. They shall have a PUC pad on bottom of foot.
4. When necessary, lateral bracing shall be fabricated of 1 ¼” Schedule 40 aluminum pipe, or tubing, connected to structural fitting.

D. Unit to Unit Connection

1. Individual platforms at same height elevations shall be connected by use of top locking cam-type mounted internally on the frame extrusion.
2. Steel Leg Clamps shall be used to connect adjacent platforms at unequal levels.

2.05 ACCESSORIES

E. Storage Carts

1. There is no room to store traditional carts. Provide rigid casters that set in leg sockets and secure with T-handle bolt.
2. Furnish the necessary amount of casters to fabricate a minimum of three storage carts to store the entire orchestra pit filler.
3. Provide one handle for each storage cart.

PART 3 - EXECUTION

3.01 GENERAL

A. Fabricate and install items in conformity with applicable trade practices and manufacturer's recommendations, unless specifically excepted by Specifications or Drawings.

B. Comply with local codes. In absence of local codes, comply with AISC, NEC, and ASA standards as applicable.

C. Furnish, turn over to Owner's designated representative and obtain receipt for all spare parts and equipment required as part of this project.

3.02 FABRICATION

A. Machine finish operating parts to standard trade tolerances, fits, and finishes, unless otherwise specified.

3.03 INSTALLATION

A. Position items accurately as indicated on Drawings and true to plumb line and level.

B. Do required cutting, drilling, tapping, and welding necessary to properly install work.

C. Consult and coordinate work with trades doing adjoining work.

D. Provide completed installation, ready for satisfactory operation, prior to tests and inspection. Advise the Architect in writing that the installation is so completed and ready for acceptance tests and inspection.

3.04 INSPECTION

A. Arrange for the Consultants inspection of the system. Upon completion of the Consultants punch list, arrange for demonstration of the system by the manufacturer's designated representative at a time acceptable to the Consultant and the Owner. Demonstrate the full capabilities of the complete system and obtain the signatures of those persons attending the demonstration. Furnish all equipment and personnel required for the demonstration.

3.05 INSTRUCTION

A. Provide at least four (4) hours of instruction of Owner's personnel in the care and operation of the complete system. Obtain the signatures of each person instructed, and their concurrence that they are comfortable with the instruction received.

B. At installation completion, Manufacturer’s installer shall demonstrate to Owner personnel the use of the staging system including set up, take down, and storage procedures.

3.06 OPERATIONS AND MAINTENANCE MANUALS

A. Furnish three sets of Operations and Maintenance manuals at project closeout.

B. Three (3) signed copies of the above shall be included with operations manuals as required condition for final approval of the work.

C. One CD disc, with all project drawing files in AutoDesk AUTOCAD format shall be furnished to the theatre consultant at project closeout.

END OF SECTION 116123

SECTION 116133

STAGE RIGGING

PART 1 GENERAL

1.1 SCOPE

A. Intent: This specification covers the fabrication, furnishing, delivery, provision, and installation of stage rigging, drapery track systems, stage draperies, and related equipment. The form of the contract, general conditions, and the project drawings are considered to be part of these specifications.

B. General: Provide all items and work necessary for complete, safe, fully functional systems as specified, including:

1. Tools, scaffolding, equipment, labor and supervision, even though they may not be specifically enumerated.
2. Verification of dimensions and conditions at the job site.
3. Coordination of the work of this section with structural steel, sprinkler systems, HVAC systems, roof drains, conduit, and other such systems whether under this contract or performed under a separate, prime contract.
4. Notification to the Architect/Engineer of any conditions, measurements, quantities, or other data, as required for proper execution, fit and completion of all work, and for safe and proper operating clearances.
5. Shipment of equipment to job site and the secured storage of all non-fixed equipment.
6. Installation and completion, in accordance with these Specifications, related Drawings, the Equipment Manufacturer's recommendations, established trade criteria, and all applicable code requirements.
7. Inspection, demonstration, and necessary adjustment of the completed installation by the Contractor's installation personnel.
8. Preparation and submission of complete record drawings and operational and maintenance data and certificates.
9. A one year inspection by the Contractor.

C. Definitions: For this project, the following entities are referenced:

1. Owner: Lynchburg City Schools
2. Theatre Consultant: TSG Design Solutions, Inc., West Palm Beach, FL

D. Errors and Omissions: Any errors, omissions, or ambiguities found in these documents do not relieve the Contractor of the responsibility of providing all items necessary for complete, safe, fully functional systems. Any errors, omissions, or ambiguities shall be brought to the attention of the Architect/Engineer of Record, Construction Manager, Owner, and/or Theater Consultant for clarification.

E. Work Included – Base bid: The work of this section shall include, but not necessarily limited to, the following:

1. Remove existing pipe battens and discard.

2. Remove existing wire rope and hardware and discard.
3. Remove existing front of house cove lighting battens and discard.
4. Remove existing main valance winch and rigging and discard.
5. Remove damaged traveler track and hardware and discard.
6. Inspect all components of the manual counterweight system and repair as necessary.
7. Move loft blocks mounted on grid floor and relocate to well beams.
8. Relocate all electric cable drops to stage right and reinstall rigging.
9. Provide new aluminum truss battens to for all line sets.
10. Provide new wire rope and hardware for all line sets.
11. Provide new traveler track and hardware
12. Install eye nuts on all counterweight arbors to allow motorized assist with a capstan winch.
13. Install a fall protection system for the loading bridge
14. Install loading bridge toe kick plates.
15. Provide new front of house cove lighting battens and properly attach to building steel.
16. Provide new main valance manual clew winch with floor pedestal and rigging.
17. Install new emergency fire curtain release system.
18. Install smoke hatch rigging that can be manually operated from the stage floor and the grid and will open automatically. System must be in compliance with all applicable fire safety requirements.
19. Provide new capstan winch for motorized assist with the manual counter weight system.
20. Provide Owner training, manuals, and as-built drawings as described herein.

F. Work Included – Add Alternate #2
   1. Move all necessary rigging components to achieve the alternate rigging plans shown on TR-111.

1.2 GENERAL REQUIREMENTS

A. Field Conditions: This project is the provision and installation of new and refurbished stage rigging systems within an existing venue. All bidders shall fully inform themselves of the conditions under which the work is to be performed. No additional compensation or time extension will be given for conditions of which bidder could have been fully aware prior to bid.

B. Safety: The systems shall conform to all applicable code requirements and shall be provided and installed in conformance to industry standards of operation and practices. All materials, arrangements, and procedures shall comply with applicable code requirements, allowing the end user to arrange and operate a safe assembly and working environment for audience and user's personnel.

C. Insurance: In the absence of more stringent requirements, the Contractor shall maintain sufficient injury and property liability insurance coverage throughout the project's scheduled timetable, including workmen's compensation coverage for the Contractor's employees.

1.3 RELATED WORK NOT INCLUDED

A. The following related items of work, if required, are in other sections and shall not be included under this contract:

   1. All modifications to the building steel required to support or to provide access to hoist components.

1.4 CONTRACTOR QUALIFICATIONS

A. Only qualified contractors shall be used.

B. The work of this section will be contracted to a single firm, referred to as the contractor.

C. This Contractor shall assume complete responsibility for the design, fabrication, transportation, and installation of the work in this Section, and shall hold the Owner, Theater Consultant, and all their Employees and Consultants harmless for any costs for errors or omissions associated with the work of this Section and any action arising there from.

D. The contractor shall be a rigging system contractor who regularly engages in the furnishing, installation and servicing of systems of similar nature, size, scope and complexity to that contemplated by this specification. The contractor shall have done so for a period of not less than five years preceding the bid date.

E. The Theater Equipment Contractor shall be a member in good standing of the Entertainment Services and Technology Association (ESTA) and maintain qualifying membership for the duration of the project

F. The contractor shall have maintained for the five years preceding the bid date, a suitably staffed and equipped service organization which has continuously offered maintenance and repair services for systems of the nature, size, scope and complexity to that contemplated by this specification.

G. The contractor shall maintain for the duration of this contract all required business and professional licenses and insurance.

H. The contractor shall demonstrate to the satisfaction of the owner, through submittals presented in accordance with the project timetable, that the contractor meets all the above qualifications. The minimum contractor qualification submittal shall include the following:

1. Statement of company history. Include a breakdown by percentage of gross sales of all business activities the contractor is involved in for each of the last 5 years (e.g. system installation = 30%, expendable sales = 40%, service = 20%, design and other professional services = 10%, etc.).
2. Previous experience: Provide a list of four installations of the type and size contemplated by these specifications, currently in use as originally installed, in which a theatre / system consultant was involved, completed in the last 5 years and the following information regarding each installation:
   Name and address of each installation.
   a. Facility owner and telephone number.
   b. Name, address, and phone number of a person regularly employed by the owner, who is familiar with the operation of the systems and who has no connection or business connections with the contractor except as the contractor shall fully disclose
   c. Name, address, and phone number of the theatre or system consultant, along with the names of all the consultant’s personnel directly involved.
   d. System shop drawings. These will be returned if the contractor provides a call tag or return postage.

   e. Owner's manual drawings - These will be returned if the contractor provides a call tag or return postage.
   f. System as-built drawings - These will be returned if the contractor provides a call tag or return postage.
   g. List of contractor's personnel involved with each person's responsibility on the project.
   h. Name, address and phone number of the general contractor, along with the names of all key GC personnel directly involved.
   i. Name address and phone number of the electrical contractor, along with the names of all key EC personnel directly involved.
3. Statement of current company capabilities and ownership.
4. Key Personnel. For each of the key personnel listed below; Include individual's name, title, and number of continuous years of service to contractor. Include a resume detailing industry experience, and role within organization (include only full-time/regular staff employees; not independent contractor, freelance, or temporary positions). List all industry certifications held, training courses attended, and continuing education credits, including dates of attendance. List recently completed projects, scope of project, and completion dates.
   a. Project Manager
   b. Senior Technician
   c. Service Manager
5. Other Department Staff. Include size of staff and experience of each staff member.
6. Replacement and Spare Parts Inventory – Provide detailed list of primary replacement parts, components, and spares typically held in inventory.
7. Test Equipment and Physical Plant – Include an inventory of all test facility equipment owned and used regularly by the Service Department. Provide description of physical plant and space utilization.
8. Copies of all business and professional licenses and insurance certificates.
9. For purposes of this contract, Dealers, Jobbers, and Sales Representatives SHALL NOT be considered as eligible participants.
10. Without prejudice to others, the following contractors are considered qualified and do not need to submit contractor's qualifications:

    InterAmerica Stage, Inc.
    4300 St. John's Parkway
    Sanford, FL 32771
    (407) 302-0881
    Contact: Mark Black

    SECOA, Inc.
    8650 109th Avenue North
    Champlain, MN 55316-3789
    (800) 328-5519

    Texas Scenic Co., Inc.
    5423 Jackwood Drive
    San Antonio, TX 78238
    (800) 292-7490

    Beck Studios

1001 Tech Drive
Milford, OH 45150
(513) 831-6650
Contact: Dan Ilhardt

Custom Stage Services, Inc.
3840 Highway 26 West
Post Office Box 1104
Ellaville, GA 31806
(229) 937-5050
Contact William McMorkle

1.5 SUBMISSIONS

A. Drawings:

1. Submit plans, elevations, sections, and equipment schedules to the Architect of all systems, components, installation methods, and schedules showing all information necessary to fully explain the design features, appearance, function, fabrication, load ratings, installation and use of system components in all phases of operation.
2. All shop and submittal drawings shall be prepared under the direct supervision of, and sealed by, a Professional Engineer licensed in the State of Virginia, and familiar with the design and installation of stage equipment.
3. The drawings shall be no less detailed than as provided in the contract documents.
4. System plans, elevations, and sections shall be submitted on minimum D-size (24x36) sheets, and shall be drawn in no less than 1/4”=1’-0” scale.
5. Submit in quantities as required by the Architect.

B. Catalog Cuts: In lieu of detailed equipment drawings, the Contractor may submit catalog cuts for standard, unmodified equipment.

1. All catalog cuts shall contain full information on dimensions, construction, applications, load ratings, etc., to permit proper evaluation.
2. Catalog cuts shall be properly identified as to their intended use. Any options or variations shall be clearly noted.
3. Detailed drawings of any modified standard equipment shall be submitted for approval as described in Section 1.04.A.
4. Catalog cut sheets shall be prepared and bound in a professional manner, with each sheet properly indexed to a “Table of Contents”. Loose or stapled sheet sets are not permitted.
5. All copies of catalog cut sheets must be clear and legible.
6. Submit in quantities as required by the Owner.

C. Samples: Provide samples of all fabrics and color choices for selection and approval. Hardware or component samples shall be provided upon written request. Submit in quantities as required by the Owner

D. Approvals: All submissions must be approved per the requirements of the project’s general conditions prior to the beginning any fabrication, installation, or erection. Such approval does not relieve the Contractor of the responsibility of providing equipment in accordance with the specifications or of providing fully operational and safe systems.

PART 2 PRODUCTS

2.1 MANUFACTURER

A. Due to their interrelated design, all the stage equipment in this specification shall be supplied by one qualified stage rigging manufacturer who shall be responsible for coordinating the required design and installation details

B. In general, the component units have been described in detail in order to obtain the required performance. The specifications are minimum requirements, and in no case will items of lesser design be acceptable. Only components that in the opinion of the Consultant upgrade the unit in all ways will be considered. Manufacturers' standard off-the-shelf components will not be considered unless they meet the minimum specifications.

C. The use of "brand names" has been held to a minimum in these specifications and when used are to establish a quality and performance standard. Items by other manufacturers not included in the Approved Manufacturers list may be used after written approval has been obtained from the Architect.

D. Substitutes shall be considered only when they are submitted fourteen days prior to bid date, and are accompanied by sufficient drawings, catalog data, specifications, and technical information for evaluation.

E. The following are approved automated theatrical rigging manufacturers:

Daktronics, Inc.
7200 Rawson Road
Victor, New York 14564
(585) 924-5000

Electronic Theatre Controls, Inc.
3030 Laura Lane
Middleton, Wisconsin 53562
(800) 688-4116
Tel: 800-221-9995
Fax: 712-200-1936

InterAmerica Stage, Inc.
4300 St. John's Parkway
Sanford, FL 32771
(407) 302-0881
Contact: Mark Black

JR Clancy, Inc.
7041 Interstate Island Road
Syracuse, NY 13209
Tel: 800-836-1885
Fax: 315-451-1766

SECOA, Inc.
8650 109th Avenue North
Champlin, MN 55316-3789
Tel: 800-328-5519
Fax: 763-506-8844

Texas Scenic Co., Inc.
5423 Jackwood Drive
San Antonio, TX 78238
Tel: 800-292-7490
Fax: 301-309-1492

F. The following are approved stage rigging equipment manufacturers:

H & H Specialties, Inc.
PO Box 9327
South El Monte, CA91733
Tel: 800-221-9995
Fax: 712-200-1936

InterAmerica Stage, Inc.
4300 St. John's Parkway
Sanford, FL 32771
(407) 302-0881
Contact: Mark Black

JR Clancy, Inc.
7041 Interstate Island Road
Syracuse, NY 13209
Tel: 800-836-1885
Fax: 315-451-1766

SECOA, Inc.
8650 109th Avenue North
Champlin, MN 55316-3789
Tel: 800-328-5519
Fax: 763-506-8844

Texas Scenic Co., Inc.
5423 Jackwood Drive
San Antonio, TX 78238
Tel: 800-292-7490
Fax: 301-309-1492

1. NO OTHER MANUFACTURERS SHALL BE CONSIDERED OR APPROVED FOR THE STAGE RIGGING EQUIPMENT ON THIS PROJECT.

G. The following are approved stage drapery tracks manufacturers:

Automatic Devices Company
2121 South 12th
Allentown, PA 18103
Tel: 800-360-2321
Fax: 610-797-4088

H & H Specialties, Inc.
PO Box 9327
South El Monte, CA91733
Tel: 800-221-9995
Fax: 712-200-1936

2. NO OTHER MANUFACTURERS SHALL BE CONSIDERED OR APPROVED FOR THE STAGE CURTAIN TRACKS ON THIS PROJECT.

H. Requirements for Approval: Other manufacturers seeking acceptance shall follow the procedures and requirements as outlined in the project's general conditions.

2.2 STANDARDS

A. Materials shall conform to the following ASTM and ANSI standard specifications:
1.
2. A-36 Specification for structural steel
3. A-47 Specification for malleable iron castings
4. A-48 Specification for gray iron castings
5. A-120 Specification for black and hot-dipped zinc-coated galvanized steel pipe for ordinary use
6. B18.2.1&2 Specification for square and hex bolts and nuts

B. In order to establish minimum standards of safety, the following factors shall be used:
1.
2. Cables and Fittings 8:1 Safety factor
3. Steel 1/5 of yield
4. Bolts SAE J429 Grd 5 (ISO R898 Class 8.8) Zinc plated
5. Motors 1.0 Service Factor
6. Gearboxes 1.0 Mechanical Strength Service Factor

C. Materials: All materials used in this project shall be new, unused, and of the latest design. Refurbished and obsolete materials are permitted where noted.

D. Fabrication:

1. The mechanical fabrication and workmanship shall incorporate best practices for good fit and finish. There shall be no burrs or sharp edges to cause either a hazard or present any sharp corners accessible to personnel.
2. All moving parts shall have specified tolerances.
3. All equipment shall be fabricated and installed to facilitate future maintenance and replacement.

E. Finishes:

1. Provide standard manufacturer's finishes except where noted.
2. Turnbuckles, clips, tracks, chains, and incidental hardware shall be plated or painted.

2.3 STAGE RIGGING SYSTEM COMPONENTS

A. General: The following listings are provided as a general guide to the major components required for this project. It is not intended to be a complete listing of all equipment and components required to provide fully functional systems. Materials, fabrication, and installation shall be as shown in the drawings and as specified herein. The Contractor is solely responsible for providing all items necessary for complete, safe, fully functional systems that meet the intent of these specifications.

B. Bills of Materials

1. Inspect all components and repair as necessary 31 each 5 line manual counterweight rigging line sets for use with stage draperies and tracks, and utility/scenery requirements. Each set shall be made up of (but not limited to) the following components:
   a. 1 ea existing 12" dia 7 Line Head block
   b. 1 ea existing 6'-0" long single purchase counterweight arbor 6" c/c
   c. 5 ea existing 8" dia Loft block
   d. 1 ea existing10" dia take-up floor block 6" c/c
   e. 1 ea existing rope lock
   f. 1ea new hand line
   g. 5 ea new 1/4" lift cables
   h. 5 ea new batten trim chain
   i. 1 ea new aluminum truss batten in same length as existing pipe battens.
   j. 1 lot new hardware.
   k. The counter weight rigging is currently 7 line. As part of the renovation the loft blocks that are currently mounted on the grid floor shall be moved and relocated to well beams that are designed to support loft block loads. Inspect and repair spare loft blocks and turn over spare loft blocks to the owner.
2. Inspect all components and repair as necessary 4 each 6 line manual counterweight rigging line sets for use with stage electrics. Each set shall be made up of (but not limited to) the following components:
   a. 1 ea existing 12" dia 7 Line Head block
   b. 1 ea existing 6'-0" long single purchase counterweight arbor 6" c/c
   c. 1 ea new wing nut for bottom of arbor for use with capstan winch
   d. 6 ea existing 8" dia Loft block
   e. 1 ea existing10" dia take-up floor block 6" c/c
   f. 1 ea existing rope lock
   g. 1ea new hand line
   h. As needed existing cable cradles
   i. 1ea new strain reliefs attached to structure for multi-cables
   j. 6 ea new 1/4" lift cables
   k. 5 ea new batten trim chain

l. 1 ea new aluminum truss batten in same length as existing pipe battens.
m. 1 lot new hardware
n. The counter weight rigging is currently 7 line and the cable pics are currently rigged into the lift lines that are adjacent to the grid iron boxes. As part of the renovation the loft blocks that are currently mounted on the grid floor shall be moved and relocated to well beams that are designed to support loft block loads with the exception of the cable pic. The grid iron junction boxes are being relocated to stage right and will require a dedicated lift line and loft block that will be mounted on the grid floor.

3. Replace the existing main valance manual clew winch and rigging with one (1) 2500 lb. total capacity manual clew winch and floor pedestal. The main valance manual winch set shall be made up of (but not limited to) the following components:
   a. 1 2500lb capacity manual clew winch to raise and lower the main valance.
   b. 1 floor pedestal
   c. 1 lot of attachment hardware for floor pedestal
   d. 1 "Clew kit" consisting the clew and all necessary hardware
   e. 1 existing 7 Line Head block
   f. 7 existing 8" dia Loft blocks
   g. 7 new 1/4" lift cables
   h. 7 new batten trim chains
   i. 1 new aluminum truss batten in same length as existing pipe batten.
   j. 1 lot new hanging hardware
   k. Thern Rigging CW25-Mseries winch is the basis of design
4. Provide new pipe battens for all front of house lighting coves.
   Provide one complete fall arrest system for the loading rail capable of supporting a minimum of two persons, meeting all OSHA and local code requirements. The system shall be made up of (but not limited to) the following components:
   a. Support I-beam+/- 38'-9" long (downstage wall to upstage wall).
   b. I-beam trolley
   c. Two (2) Full body harnesses with a center back fall arrest attachment.
   d. Two (2) energy absorbing lanyards to attach body harnesses to I-beam trolley
5. One (1) lot of custom stage rigging system signage.
6. One (1) Mobile Capstan Hoist, 1500 lb. capacity:
7. One (1) New Traveler Track
8. Smoke hatch vents are currently not operational from the stage floor. The floor level rigging has been removed from the back wall of the auditorium at stage level and from the grid. Upon visual inspection the pulleys located in the raised structure above the roof line have been abandoned in place and the smoke hatch doors have been cabled shut with quick links. Restore floor level operation of the smoke hatches. Restoration of the system shall be made up of (but not limited to) the following components:
   a. 1 lot of new wall mounted pulleys
   b. 1 lot of surface mounted mule block to divert cables from back wall to pulleys in raised structure.
   c. Replace pulleys in the raised roof structure with new.
   d. Replace any missing hardware required to make the smoke hatches functional and meet all current fire codes.
   e. Provide new wire rope in the proper size and quantity to complete the installation.
9. The existing Electro-mechanical Fire Line Release system is not operational. Replace the Electro-mechanical Fire Line Release system with new.

2.4 RIGGING EQUIPMENT SPECIFICATIONS

A. Head Block:

1. Inspect all components of existing head blocks and replace any worn or damaged components with new parts.

B. Loft Blocks:

1. Inspect all components of existing loft blocks and replace any worn or damaged components with new parts.

C. Tension Floor Block:

1. Inspect all components of existing tension floor blocks and replace any worn or damaged components with new parts.

D. T-Bar Arbors:

1. Inspect all components of existing tension T bar arbors and replace any worn or damaged components with new parts.

E. Counterweight

1. Re use existing counterweights

F. Rope Lock:

1. Inspect all components of existing tension rope locks and replace any worn or damaged components with new parts.

G. Stage Level Locking Rail:

1. Inspect all components of existing tension locking rail and replace any worn or damaged components with new parts.

H. Arbor Guide System:

1. Inspect all components of existing Arbor guide system and replace any worn or damaged components with new parts.

I. Hand Line (Manual Counterweight Sets)

1. Hand line shall employ 3/4” inch diameter black 3-strand composite construction combining filament and staple/spun polyester wrapped around fibrillated polyolefin.
2. The hand line shall contain an identifying tape showing the manufacture’s name, phone number, website, and year of manufacture.
3. The hand line shall contain a red safety/wear indicator that will become visible as the rope nears the end of its useful life.

4. The rope shall hold knots well, be easily spliced and be dense enough to allow it to be clamped in a rope lock without damage. Rope shall not be subject to rotting, mildew, or moisture damage nor shall its length be affected by changes in humidity.
5. Tape ends before cutting. Attach to arbor with two half hitches or bowline and tape end to standing line with two (2) each black plastic cable tie wraps. The use of tape of any kind is not permitted.

J. Batten Trim Clamp:

1. Batten trim clamps shall consist of two pipe clamps, each made of two strips of 12 Ga. by 2" hot rolled steel formed to encompass and clamp the pipe batten to prevent its rotation. Corners shall be rounded. There shall be a 3/8" x 1" hex bolt with lock nut above and below the batten. A 5/8" hole in the top of one clamp half allows the attachment of cable, chain, or other fittings. The other clamp shall be fitted with a Nylon or aluminum grooved spacer with a minimum 2" diameter.
2. Line adjustment shall be made by loosening the end clamp and sliding it along the batten or by adjusting the turnbuckle if so equipped.
3. Trim clamps shall have a recommended working load of at least 700 lbs.

K. Lift Cables:

1. All lift cables shall be 7 x 19 construction, galvanized aircraft cable, sized as required, and with breaking strengths as follows:
   a. 1/8" diameter 2,000 pounds
   b. 3/16" diameter 4,200 pounds
   c. 1/4" diameter 7,000 pounds
   d. 5/16" diameter 9,800 pounds
   e. 3/8" diameter 14,400 pounds
2. Damaged or deformed cable shall not be used. All wire rope rigging shall be installed so as to prevent abrasion of the wire rope against any part of the building construction or other equipment.

L. Cable Fittings:

1. Swaged sleeve fittings shall be copper Nicopress™. Swaged fittings shall be installed per the fitting manufacturer's instructions, using the appropriate tools, and checked with the appropriate Nicopress™ "Go - No go" gauge. Clamp type "cable clips" shall not be permitted.
2. Eyes shall be formed over galvanized wire rope thimbles of correct size.
3. Exposed cable ends shall be sealed in black self-fusing silicon tape. Tape shall be "Rescue Tape as Manufactured by Harbor Products, Inc.

M. Turnbuckles:

1. Turnbuckles shall be drop forged and galvanized, and conform to ASTM F-1145 Type 1, Grade 1. Turnbuckles shall be moused after adjustment to prevent loosening.

N. Truss Pipe Battens:

1. All battens shall a standard ladder type truss batten and shall be constructed from 2’ X 3/16” wall aluminum tubing spaced 12” apart. Vertical supports shall be 5/16” x 2”W x 10”L spaced on 4’-0” centers. Provide Truss battens in lengths as shown on the drawings.
2. All joints shall be spliced with 18" long sleeves with 9" extending into each pipe and held by two 3/8" dia. x 2 3/8” long hex bolts and low profile jam lock nuts on each side of the joint. Welded connections are not permitted. Any gap between pipe sections shall not exceed ¼”.
3. Each end shall be covered with a bright yellow, closed end, soft vinyl safety cap at least 4 inches in length.
4. Pipe battens shall carry set numbers and centerline indicator marks as specified in Section 2.5.A

O. FOH Cove Stage Lighting Battens

1. All battens be shall constructed of 1-1/2” ID black schedule 40 pipe in the same lengths as the existing stage lighting battens.
2. All battens shall be securely attached to building steel, attachment points shall be a maximum of 10’-0” on center.

P. Capstan Hoist:

1. One (1) Mobile Capstan Hoist, 1500 lb. capacity:
   a. The capstan hoist shall have a capacity of 1500 pounds and an operating speed of approximately 35 feet per minute. It shall consist of a structural steel, castered frame with a 4" tread diameter, cast iron capstan drum, directly coupled to the output of the gearbox.
   b. The motor, primary brake and gearbox shall be an integrated unit, with the first stage pinion gear mounted directly on the motor’s armature shaft. No couplings will be permitted between the motor and gear reducer.
   c. Motors shall be totally enclosed fan cooled (TEFC). The motor shall have a minimum AGMA service factor of 1.0 for constant operation.
   d. The gear reducer shall be a combination Helical/Worm reducer. The gear case shall be cast iron for protection against shock damage. The output shaft(s) shall have double lip oil seals to prevent leaks. The gearing service factor shall be a minimum of 1.0 with a mechanical strength service factor of 1.25.
   e. The primary brake shall be an integral part of the motor, mounted directly on the motor’s armature shaft. Brakes shall be spring applied, direct acting, electrically released, and equipped with a manual release.
   f. The mobile dolly base shall be equipped with stationary casters in front and swivel casters in the rear. A 3"x3"x3/8" angle in front shall engage the reaction bar in the locking rail. A side opening gate block shall protrude into the locking rail.
   g. The unit shall incorporate a full voltage reversing starter with overload, a footswitch to control motion, and an Up / down direction selector. Unit will be equipped with 40 feet of type SO cord with a locking electrical connector and mating receptacle.
   h. The unit shall be equipped with 150 feet of 3/4" SureGrip® rope with a latching hook spliced in one end.

Fire Curtain System:

1. Electro-mechanical Fire Line Release:

a. The fire curtain shall be equipped with an electro-mechanical fire line release mechanism operated by a device which is activated by normally open or normally closed devices including rate of rise heat detectors, smoke detectors, emergency switches, etc. (furnished and installed by others) or by release of tension in the fire line. A switch shall be mounted in the release mechanism enclosure for testing system operation. Activation of release mechanism shall release tension in the fire line, which, in turn, allows the arbor to rise and the fire curtain to close in the normal manner. The release unit shall incorporate three pulleys to permit its attachment to the fire line at any point and to help prevent accidental release.
b. The release shall contain an integral battery and charger to provide emergency power during power interruptions. The release shall operate from a 120 VAC power source.
c. The electrical fire line release shall be UL Listed.

2.5 EQUIPMENT LABELS AND MARKINGS

A. Truss Pipe Battens:

1. Provide minimum 1½” tall field applied white set number labels at the top and underside of each pipe at each end, just onstage of the plastic end caps. Hand numbering is not permitted.
2. Provide a 1” wide yellow enamel paint stripe at the stage centerline.
3. Provide a 1” wide white enamel paint stripe on either side of plumb lift line attachments to the battens.

B. Counterweight Arbors

1. The front of the arbor TOP AND BOTTOM shall carry 1- ½” field applied white set number labels. Hand numbering is not permitted.
2. Provide labels on the steel back plates showing the proper locations for the spreader plates (max 2’-0” spacing).

2.6 STAGE DRAPERY TRACKS

A. Heavy Duty Box Tracks (Auditorium Stage)

1. All track and components shall be provided with black finish.
2. Drapery tracks shall be of 14 gauge black painted galvanized steel, entirely enclosed except for slot in bottom, each half to be in one continuous piece except where splicing clamps are required. Aluminum track is not acceptable for this project.
3. Each drapery carrier shall be spaced on 12" centers and shall be of steel construction with two nylon-tired ball-bearing wheels held to steel body by rustproof nickel plated rivet, such wheels rolling on two separate parallel treads. Each drapery carrier shall consist of a free-moving plated swivel and sufficient trim chain to accommodate drapery snap hook.
4. Live-end pulley and Dead-end pulley blocks shall be adjustable and shall be equipped with minimum 5" diameter sleeve-bearing wheels adequately guarded.
5. A rubber bumper shall be attached to each drapery carrier to function as noise reducer.
6. The manufacturer shall furnish two end stops for placement at each track end and a minimum 5” diameter tension floor pulley for increasing cord tension.

7. Provide the floor pulley with a demountable floor plate. Install floor plate flush into the stage floor as required.
8. Stretch-resistant operating cord shall be black and have a synthetic or wire center and shall be minimum 1/2" diameter.
9. Provide “Back-pack” devices for all cord operated track assemblies.
10. Track shall be rigidly supported from pipe hanging clamps on five-foot maximum centers.

B. Pipe Batten Clamps

1. All drapery tracks shall be suspended below their respective pipe batten by rigid pipe clamps. Under no circumstances shall hanging chains or other methods be used.
2. Pipe clamp supports shall be installed at a maximum spacing of 4’-0” on center.
3. Pipe clamps shall be made of two strips of 12 Ga. by 2" hot rolled steel formed to encompass and clamp the pipe batten to prevent its rotation. Corners shall be rounded.
4. There shall be a 3/8" x 1" hex bolt with lock nut above and below the batten. A 5/8" hole in the bottom of each clamp half shall allow for the attachment of the track hangers.

2.7 SYSTEM SIGNAGE

A. System Sign: Provide and install two (2) system informational signs. The signs shall be installed at the downstage end of the locking rail, and at the downstage wall of the loading gallery. The signs shall describe the following:

1. Maximum capstan winch assist and manual counterweight line set capacities
2. Individual weight of each size of counterweight supplied
3. Maximum load at single lines (i.e. loft block locations)
4. Name, address, and phone number of installation contractor
5. Name, address, and phone number of equipment manufacturer
6. Date of installation (month and year)
7. Statement - “Stage rigging system must be inspected yearly by qualified personnel”

B. Operational Warning Sign: Provide and install two (2) signs at the stage right areas in sight of the locking rail stating “Stage Rigging Operation by Authorized and Trained Personnel Only” in minimum 1-1/2” high lettering.

C. Sign Materials and Lettering size:

1. Signs shall be of minimum 3/16” thick red non-glare plastic.
2. Lettering shall be white in color in a non-serif font, such as Helvetica or Arial, in ALL CAPS, and in font sizes as specified herein.
3. Signs shall be mechanically affixed to the walls. Glued applications are not permitted.
4. Signs shall be professionally produced. No hand or “stick on” lettering is permitted.

PART 3 EXECUTIONS

3.1 GENERAL

A. Fabricate and install items in conformity with applicable trade practices and manufacturer's recommendations, unless specifically excepted by Specifications or Drawings

B. Carry out shop and field welding in full conformity with applicable AISC, ASME, AWS and ASA standards.

C. Comply with local codes. In absence of local codes, comply with AISC, NEC, and ASA standards as applicable.

D. Furnish, turn over to Owner's designated representative and obtain receipt for all spare parts and equipment required as part of this project.

E. Workmanship and finish must be first class in every particular and strictly in accordance with the best practices. Work shall be made in accordance with the reviewed shop drawings. Work made in sections shall be carefully fitted together. Units shall be properly laid out and spaced between terminals.

F. Only experienced riggers shall be used on the work and a supervisor carrying an ETCP Certification in Theatrical Rigging shall be present during the entire installation.

G. An experienced, qualified representative of the rigging hardware and drapery manufacturer shall be present at all times during the installation

H. The entire installation shall be made with the assistance of the factory-authorized representative of the equipment manufacturer. The equipment manufacturer's recommendations and instructions are to be fully implemented.

I. Storage: The Contractor shall be responsible for storage of stage equipment, tools, and its equipment during the period of the installation.

J. Damage Protection: The Stage Rigging Contactor shall take all precautions necessary to prevent damage to the stage floor, walls, and all other existing finishes during installation.

3.2 SHOP DRAWINGS and Submittal

A. Within thirty (30) days of bid award and prior to beginning work, prepare and submit shop drawings to the Architect for approval. These drawings shall be detailed and complete on all phases of the installation. The drawings shall include details of all rigging hardware components. Shop drawings shall be approved by the Architect prior to fabrication, installation or erection has begun. Minimum plates required shall be:

1. Title sheet
2. Scale plan and section drawings
3. Scale elevation drawings of each line set type included (fire curtain, gp sets, electric sets, etc.)
4. Assembly drawings of all major components including dimensions, weights and bill of materials
5. Electrical riser, interconnect and block diagrams
6. Scale drawings of all electrical and control system components, complete assemblies and control stations
7. Scale location drawings of all electrical components required (both those provided by the rigging contractor and those provide by the electrical contractor). This drawing shall be

used by the electrical contractor to coordinate the electrical “rough in” and correct placement is the responsibility of the rigging contractor

B. Approval of shop drawings does not relieve the Contractor of the responsibility of providing equipment in accordance with these specifications. Any deviations from the specifications shall be "starred" and noted in 1/4" high letters. Only deviations, which upgrade the quality of the equipment, shall be considered.

C. Individual components shall be detailed as required to illustrate materials, thicknesses, sizes, capacities and methods of assembly or attachment to adjoining components.

D. Shop drawings shall show all system loads, safety factors, system capacities and imposed building loads.

E. Specific notes shall be included pertaining to the adequacy of the related structural steel, miscellaneous metals and electrical accommodations as they appear on the contract drawings

F. Shop drawing shall be fully coordinated with all other disciplines and site data and dimensions

G. Included with the show drawings shall be a submittal package including:

1. Complete color selection samples of curtain materials for Architect's selection.
2. Catalog information and cut sheet of all standard equipment
3. Catalog information and cut sheets of all electrical components
4. Owner’s manuals for everything electrical in nature and any complex mechanical machinery (e.g. winches)
5. Complete drapery and curtain track information and cut sheets
6. The required flame retardant certifications from the Drapery section of this specification.

H. Shop drawing and submittals shall be revised and resubmitted as required.

3.3 FABRICATION

A. Machine finish operating parts to standard trade tolerances, fits, and finishes, unless otherwise specified.

B. Paint all fabricated work flat black unless specified on the drawings or herein.

3.4 JOB CONDITIONS

A. Take required measurements at the building. Consult with the various other Contractors whose work adjoins this work. This Contractor shall be responsible for the proper coordination of all details of the installation.

B. Do drilling and fitting and work of similar character required in the fitting and setting of the materials in place and do cutting and fitting required in connection with the fitting of these materials to the adjoining work of other Contractors.

C. Provide connecting members needed for properly supporting and securing the work to the masonry, joints, walls, structural members, or other parts of the building as may be best suited for each case.

3.5 INSTALLATION

A. Position items accurately as indicated on Drawings and true to plumb line and level.

B. Use fittings and clips conforming to cable manufacturer's recommendations as to size, number, and method of installation.

C. Form rope and cable eyes over properly sized thimbles at requisite connection points.

D. Do required cutting, drilling, tapping, and welding necessary to properly install work.

E. Consult and coordinate work with trades doing adjoining work.

F. Install all rigging components to maximize batten travel.

G. Provide completed installation, ready for satisfactory operation, prior to tests and inspection. Advise the Architect in writing that the installation is so completed and ready for acceptance tests and inspection.

H. Adjust hand line lengths for proper tension block take up after initial stretch of line.

I. Curtains are to be installed on their proper tracks and battens and trimmed to the floor in the best manner known to the profession.

J. Installation practices:

1. Installation practices shall be in accordance with Federal OSHA Safety and Health Standards and all local codes. Certified welders shall perform all field welding in full compliance with the latest edition of the Structural Welding Code (ANSI/AWS D1.1) and any other applicable local and state codes and regulations.
2. Equipment shall be installed in a workmanlike manner, per plans and specifications. Equipment shall be aligned, adjusted, and trimmed for the most efficient operation, the greatest safety and for the best visual appearance.

K. Field Welding: All proposed field welding shall be described and submitted in detail in the form of sketches and/or drawings for review by the Architect/Engineer of Record/Engineer of Record.

L. Touch-Ups: Any welds or cuts shall be touched up to match disturbed finishes. All finishes which are disturbed during shipping and installation shall be touched up to match the original.

3.6 INSPECTION

A. The job will be inspected periodically by the Architect and/or his representative while work is in progress, and the Contractor shall accord his full cooperation in the examination of work and materials, which may include dismantling of the equipment for examination of component

interior parts. Any equipment found not meeting the specification shall be removed immediately from the job.

B. Arrange for the Consultants inspection of the system. Upon completion of the Consultants punch list, arrange for demonstration of the system by the manufacturer's designated representative at a time acceptable to the Consultant and the Owner. Demonstrate the full capabilities of the complete system and obtain the signatures of those persons attending the demonstration. Furnish all equipment and personnel required for the demonstration.

3.7 CLEANUP AND PROTECTION

A. Site Clean Up and Other Protection: The Contractor shall be responsible for all clean up related to its work, including the removal of packing materials etc. and the protection of existing surfaces or equipment. Repairs to damage caused by the Contractor to any item or surface are the sole responsibility of the Contractor.

B. Protection of Installed Equipment: The equipment described in this section is considered to be finished equipment and is to be protected during and after installation from excessive dirt and damage caused by other work.

C. Equipment Cleaning: All equipment and the areas around the equipment shall be cleaned prior to final inspection and acceptance.

3.8 TESTING

A. Operate all equipment for approval of the Architect and/or his representative. Demonstrate proper trim of "sets”, leveling of "sets", and balance of "sets" and freedom of movement without fouling. Make all adjustments and modifications necessary and required for approval.

3.9 INSTRUCTION

A. Provide at least four (4) hours of instruction of Owner's personnel in the care and operation of the complete system. Obtain the signatures of each person instructed, and their concurrence that they are comfortable with the instruction received.

3.10 WARRANTY & INSPECTIONS

A. The Contractor shall provide a three (3) year written guarantee following the date of substantial completion against defects in materials and workmanship of all electrical and mechanical systems. Within this period, the Contractor shall provide any required maintenance or replacement within 30 days of written notification by the Owner, except for safety related items that shall be corrected within 48 hours of notification. Subsequent to the expiration of the guarantee period, the Contractor agrees to furnish repair and maintenance service, at the Owner’s expense, within 30 days of request for such service. Exceptions shall be ordinary wear and defects due to improper usage.

B. One Year Inspection: At one year after the date of final acceptance, and as part of this contract, the Contractor shall provide a comprehensive inspection of all installed systems and components. Make all adjustments as may be required by normal wear and tear. This inspection shall be scheduled directly with the Owner and shall be done at the Owner’s convenience.

C. Continuing Inspections: The Contractor shall offer the Owner estimated costs of a safety inspection and training program to be performed yearly. This program may include systems other than the stage rigging, such as production lighting and audio systems, as well as general backstage safety, at the discretion of the Owner and Contractor.

3.11 OPERATIONS AND MAINTENANCE MANUALS

A. Furnish four sets of Operations and Maintenance manuals at project closeout. Two sets shall be for the Owner, one set for the Consultant and the contractor shall retain one set for their records

B. Manual shall, at the minimum, include the follow:

1. Contractor's service contact information
2. Set of reduced sized "as-build" drawings based on the approved shop drawings
3. Copy of the submittal package minus the color samples
4. System warranty
5. Copy of each drapery label
6. Complete operating instructions
7. Safety guide
8. Maintenance procedures, including schedules
9. Inspection criteria in sufficient detail so that users can realistically carry out system inspections
10. Sample inspection report form specific for each set type installed
11. Rail Log template.
12. CD ROM of all data with files in PDF format.
13. Each manuals presented to the owner shall each include one set of future test swatches listed in the Drapery section

END OF SECTION 116133

SECTION 116153

STAGE LIGHTING SYSTEM

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions, Special Conditions and Division-1 Specification sections, apply to work specified in this section.

1.2 RELATED WORK AND REQUIREMENTS

A. Section 26 00 00

1.3 SCOPE

A. This section requires the fabrication, furnishing, delivery, installation and testing of the lighting system as indicated on the drawings and specified herein.

B. The contractor shall provide all materials, equipment, labor, tools, scaffolds, and incidentals necessary to perform the scope of work.

C. It is the intention of these specifications that the contractor provides a professional quality, complete and properly operating system in every respect and detail.

D. The installation contractor shall examine the plans in detail to familiarize him with the scope of the work. Special attention shall be paid to reviewing all project electrical drawings, floor plans, conduit risers, and the like for locations and quantities of boxes and enclosures.

E. The contractor shall assume full responsibility for a complete operating installation, in the required location, in accordance with the contract documents.

F. Coordinate fully with the Division 26 Contractor.

1.4 WORK INCLUDED – BASE BID

A. Without restricting volume or generality of above “Scope,” work to be performed under this section shall include, but not be limited to, the furnishing and installation of the following:

1. Inspect all stage lighting circuits and assist electrical contractor in performing all necessary repairs
2. Remove old stage lighting dimmer rack control electronics and discard.
3. Retrofit stage lighting dimmer rack control electronics with two new control systems.
4. Clean and inspect all dimmer modules, preform all necessary repairs and replace any missing or unrepairable dimmer modules with new dimmer modules.
5. Provide new dimmer bars at all front of house ceiling cove positions.
6. Furnish new enclosure and lighting remotes for the distribution of DMX to stage lighting dimmer bars.

7. Furnish new house lighting dimmer racks.
8. Provide new house light control wiring.

B. The Contractor shall examine the plans in detail to familiarize himself with the scope of work.

C. The Contractor shall provide the required manufacturers' shop drawings.

D. The Contractor shall provide all the necessary specialty equipment for the complete lighting and dimming system installation as specified herein, and shown on the drawings.

E. The Contractor shall coordinate the system control wire conduit and device locations with the Division 26 Contractor.

F. The Contractor shall deliver to the job site, and coordinate the installation of, the specialty equipment with the Division 26 Contractor.

G. The Contractor shall provide, install and terminate all system control wires.

H. The Contractor shall provide and install all system control devices.

I. The Contractor shall provide for the system activation.

J. The Contractor shall provide the system manuals.

K. The Contractor shall provide the system warranty.

L. It is the Contractor's responsibility to ensure that the system and all of the system components, fixtures, equipment, devices, wire, terminations, field assemblies (including custom assemblies), etc pass all required inspections by the local authority having jurisdiction.

M. Procurement of all required permits.

1.5 WORK NOT INCLUDED

A. The following work, although in another section, has a significant impact on the scope of this work. The Contractor is responsible for the successful coordination of the following:

1. System conduit.
2. Installation and termination of Line supply.
3. Installation and termination of Load wire.
4. Dimmer rack installation.
5. Distribution installation.

1.6 CONTRACTOR'S QUALIFICATIONS:

A. Only qualified contractors shall be used.

B. The work of this section will be contracted to a single firm, referred to as the contractor.

C. The contractor shall be a lighting system contractor who regularly engages in the furnishing, installation and servicing of systems of similar nature, size, scope and complexity to that contemplated by this specification. The contractor shall have done so for a period of not less than five years preceding the bid date.

D. The contractor shall have maintained for the five years preceding the bid date, a suitably staffed and equipped service organization which has continuously offered maintenance and repair services for systems of the nature, size, scope and complexity to that contemplated by this specification.

E. The contractor shall have on staff a factory trained field service agent, capable of system testing, commissioning and troubleshooting systems of the nature, size, scope and complexity to that contemplated by this specification.

F. The contractor shall have on staff a qualified and competent lighting designer / engineer capable of designing systems of the nature, size, scope and complexity to that contemplated by this specification.

G. The contractor shall maintain for the duration of this contract all required business and professional licenses and insurance.

H. The contractor shall demonstrate to the satisfaction of the owner, through submittals presented in accordance with the project timetable, that the contractor meets all the above qualifications. The minimum contractor qualification submittal shall include the following:

1. Statement of company history. Include a breakdown by percentage of gross sales of all business activities the contractor is involved in for each of the last 5 years (e.g. system installation = 30%, expendable sales = 40%, equipment rentals = 20%, design and other professional services = 10%, etc).
2. Previous experience: Furnish a list of four installations of the type and size contemplated by these specifications, currently in use as originally installed, in which a theatre / system consultant was involved, completed in the last 5 years and the following information regarding each installations:
   a. Name and address of each installation facility.
   b. Facility owner and telephone number.
   c. Name, address, and phone number of a person regularly employed by the owner, who is familiar with the operation of the systems and who has no connection or business connections with the contractor except as the contractor shall fully disclose
   d. Name, address, and phone number of the theatre / system consultant, along with the names of all the consultant’s personal directly involved.
   e. System shop drawing – These will be returned if the contractor provides a call tag or return postage.
   f. Owner’s manual drawing – These will be returned if the contractor provides a call tag or return postage.
   g. System as-built drawings drawing – These will be returned if the contractor provides a call tag or return postage.
   h. List of contractors personal involved with each person’s responsibility on the project.
   i. Name, address and phone number of the general contractor, along with the names of all key GC personal directly involved.

j. Name address and phone number of the electrical contractor, along with the names of all key EC personal directly involved

3. Statement of current company capabilities and ownership.
4. Key Personal: For each of the key personnel listed in the below; Include individual's name, title, and number of continuous years of service to contractor. Include a resume detailing industry experience, and role within organization (include only full-time/regular staff employees; not independent contractor, freelance, or temporary positions). List all industry certifications held, training courses attended, and continuing education credits, including dates of attendance.
   a.
   b. Project Manager
   c. Senior Technician
   d. Service Manage
5. Factory Trained Field Service Agent. Include individual's name and title. List all factory held certifications, training courses attended, and continuing education credits, including dates of attendance. Provide a list of recently commissioned systems, scope of project, and commissioning dates.
6. Lighting Designer / Engineer. Include individual's name and title. List current design credits with scope of project, and design completion dates.
7. Other Department Staff. Include size of staff and experience of each staff member.
8. Replacement and Spare Parts Inventory – Provide detailed list of primary replacement parts, components, and spares typically held in inventory.
9. Test Equipment and Physical Plant – Include an inventory of all test facility equipment owned and used regularly by the Service Department. Provide description of physical plant and space utilization.
10. Without prejudice to other contractors desiring to be qualified, the following are considered qualified and do not need to submit contractors qualifications:

Parlights, Inc.
One Wormans Mill Court
Suite # 7
Frederick, MD 21701
(410) 346-6829
Contact: Walt Dowling

Barbizon Capitol
6437 G General Green Way
Alexandria, VA 22312
(703) 750-3900

SECOA, Inc.
8650 109th Avenue North
Champlain, MN 55316-3789
(800) 328-5519

Texas Scenic Co, Inc.
5423 Jackwood Drive
San Antonio, TX 78238
(800) 292-7490

1.7 WARRANTY & INSPECTIONS

A. Warranty: The Contractor shall provide a three (3) year written guarantee against defects in materials and workmanship. Within this period, the Contractor shall provide any required maintenance or replacement within 30 days of written notification by the Owner, except for safety related items that shall be corrected within 48 hours of notification. Subsequent to the expiration of the guarantee period, the Contractor agrees to furnish repair and maintenance service, at the Owner's expense, within 30 days of request for such service.

B. One Year Inspection: At one year after the date of final acceptance, and as part of this contract, the Contractor shall provide a comprehensive inspection of all installed systems and components. Make all adjustments as may be required by normal wear and tear. This inspection shall be scheduled directly with the Owner and shall be done at the Owner's convenience.

C. Continuing Inspections: The Contractor shall offer the Owner estimated costs of a safety inspection and training program to be performed yearly. This program may include systems other than the stage rigging, such as production lighting and audio systems, as well as general backstage safety, at the discretion of the Owner and Contractor.

PART 2 PRODUCTS

2.1 GENERAL

A. When this document lists several alternative manufacturers for a particular item of equipment, more than one of which is to be provided, the Contractor shall furnish all of those similar items of equipment from one manufacturer.

B. Any item of equipment or hardware that may not be specifically shown on the drawings or specified herein, but required for proper system operation or installation, shall be furnished and installed and be of the highest quality available.

C. All materials and equipment used in this project shall be new, unused and of the latest models and design. Refurbished materials and equipment are not permitted except where noted.

D. The performance of all equipment must meet the most recently published manufacture's data sheets.

E. UL Labels: All equipment, where applicable standards have been established, shall be listed by Underwriters' Laboratories, Inc., and shall bear UL label when delivered to the job.

F. If so required by the local authority having jurisdiction, anything not arriving at the job bearing a UL label shall be field inspected and label by a nationally recognized testing laboratory recognized and approved by the local authority having jurisdiction.

2.2 MANUFACTURERS

A. The stage lighting and control manufacturer shall be one who has been continuously engaged in the manufacture of stage lighting control equipment, wiring devices, and electronic dimmers for ten years or more.

B. Except where otherwise noted in this specification, the following are the approved manufacturers for the listed respective products:

Strand Lighting, Inc.
6603 Darian Way
Cypress, CA 90630
(714) 230-8200

Johnson Systems Inc.
1923 Highfield Cres.SE
Calgary, Alberta T2G 5M1 Canada

Pathway Connectivity
Acuity Brands Lighting Canada
#103- 1439 17TH Ave SE
Calgary ABT2G1J9 Canada
(403)243-8110

2.3 ALTERNATIVE MANUFACTURERS

A. Alternatives: In no case will equipment or materials of lesser design or workmanship be acceptable. Only those materials and equipment listed in this specification will be considered unless prior approval is sought and received.

1. Substitutions: When a specific piece of equipment specified has been discontinued and/or replaced by a new model, substitution will be acceptable when:
   a. Submission of complete data on the new model or substitute has been approved by the owner prior to equipment acquisition.
   b. Substitute equipment or the replacement of rejected equipment shall be at the sole expense of the contractor.
2. Substitutes shall be considered only when they are submitted fourteen days prior to bid date, and are accompanied by sufficient catalog data, specifications, and technical information for evaluation.
   a. Summarize proposal with a list of equipment catalog or series numbers. Substitute bids shall include a system riser diagram detailing components and any deviation of functionality from the drawings and specifications herein.
   b. The bidder shall include the name, address, and phone number of at least two- (2) factory authorized Field Warranty centers within a 250-mile radius of the job site as a part of the submittal documents.
   c. On the lighting fixtures, the bidder submitting other equipment shall include performance data taken and reported in compliance with the “Recommended Practice for Reporting Photometric Performance of Incandescent Filament Lighting Units used in Theatre and Television Production,” approved as the official standard by the U.S. Institute for Theatre Technology, the Illuminating Engineering Society, the Society of Motion Picture and Television Engineers, and the American Theatre Association. For purposes of establishing the validity of such submissions, the manufacturer shall furnish this data from an independent testing laboratory. Proposals that fail to meet this requirement shall not be considered.

d. On the dimming system, the bidder submitting other equipment shall include pertinent performance data, charts and drawings showing in what respect the system will function in accordance with specification, and in what way it will deviate from the specification. This submittal shall include, but not be limited to the following:

3. Rated ampacity, peak single cycle surge current rating, I^2t rating, and transient voltage rating of the output devices employed in the dimmers.
4. Laboratory verification of minimum current rise time at a 90-degree conductive angle, with the dimmer operating at the maximum load.
5. Description of the air-cooling and air filtration systems.
6. Description of the packaging and ease of replacement for all spare parts required in this specification.
7. Original Manufacturer's catalog data sheets for all major components of the dimmer system.
   a. On the control system, the bidder shall submit the name of the manufacturer, and list of ten (10) or more operating systems in the State of Virginia of the type specified which meet the performance control functions designed, with contact names and telephone numbers for references. This information shall be mandatory as a basis for determining the bidder's intent in meeting the full requirements of this specification, and shall be submitted at least fourteen days in advance of bidding.
   b. It is understood that any additions or revisions of wiring required by the use of substitute equipment, whether such wiring is part of this contract or of the prime electrical contract, shall be the responsibility of the bidder making the substitution.
   c. If required by the Owner or the Consultant the bidder shall provide working samples of substitute equipment including lamps for any lighting fixtures, to be delivered to the premises designated, for examination by Owner, Consultants, and such representatives as the Owner may direct. Handling, shipping and delivery to, or removal from site, of any sample required shall be at the cost of the Contractor. The Contractor shall be responsible for the arrangement of the cost of the electrical supply required to properly test any lighting instruments or item of equipment. Proposals which fail to address specification requirements or review comments will be rejected.
   d. Prior approval submittal review and approval shall not be considered to be shop drawing review. Prior approval in no way relieves the Contractor of responsibility to fully meet the requirements and intent of this specification.
   e. Should the contractor proposed and receive approval for the use of alternative or substitute equipment which requires additional or modified conduit, the contractor will be solely responsible for the installation of such conduit.

2.4 DIMMER RACKS

A. Inspect, clean, repair and reuse the existing stage lighting production dimmer racks. Inspection and cleaning shall include but not be limited to;

1. Thorough cleaning of the racks and dimmer modules with compressed air.
2. Inspection of all rack/dimmer power connectors. Replace as necessary with new parts only.
3. Tightening of all high voltage and neutral connections. Repair as necessary.

B. Abandon the existing house light dimmer rack and furnish two new house lighting dimmer racks.

C. The new house light dimmer racks shall be of modular design.

D. Furnish the house light dimmer racks and related equipment from one of the following approved manufacturers or approved equal; see system one line drawing for quantities and device location drawing for placement

1. "DCE" = Strand Lighting Inc.

CAT. #	DESCRIPTION
74123	Six module A21 house lighting dimmer rack
74160	Emergency Power Sense

2. "DCN" = Strand Lighting Inc.

CAT. #	DESCRIPTION
74130	Nine module A21 house lighting dimmer rack
	Nine module A21 house light "slave" rack

2.5 DIMMER MODULES

A. Inspect, clean, repair and reuse the existing stage lighting dimmer modules. . Inspection and cleaning shall include but not be limited to;

1. Thorough cleaning of the dimmer modules with compressed air.
2. Inspection of all rack dimmer power connectors. Replace as necessary with new parts only.
3. Test all dimmers for proper operation, repair as necessary.
4. Replace all unrepairable dimmers with new.

B. Abandon the existing house light dimmer modules and furnish new house lighting dimmer modules.

C. The new dimmer modules shall be of modular design for easy installation and removal. Each module to come equipped with magnetic circuit breakers and a sealed power device assembly. The sealed power device assembly must be field replaceable without soldering.

D. Furnish the dimmer modules from one of the following approved manufacturers or an approved equal; see system one line for quantities.

1. "DCE" = Strand Lighting Inc.

CAT. #	DESCRIPTION
74173	House lighting dimmer module. Dual 2.4kW.
74173	One spare

2. "DNE" = Strand Lighting Inc.

CAT. #	DESCRIPTION
74173	House lighting dimmer module. Dual 2.4kW.
74195	House Light relay module. Quad 2.4kW.
74195	One Spare
74181	Blank module

2.6 PRODUCTION DIMMER RACK CONTROL MODULE

A. General:

1. The control electronics shall be of modular design.
2. The control electronics shall be a direct retrofit kit specifically designed for use with existing Strand CD80 dimmer racks designed to upgrade existing dimmer installations to current dimming technology and shall be equipped with pin to pin compatibility with OEM wiring.
3. The control electronics shall be ETL Listed and comply fully with UL 508 and CSA 22.2 safety approvals.
4. The control module shall come equipped with an LCD user interface for ease of set up and monitoring, no PC or special software will be required.
5. Dimmer control outputs shall be designed for precise and reliable control of the existing CD80 dimmer modules without the need to adjust ramp circuits for proper dimmer output.
6. The unit shall accept dual independent DMX 512-A inputs and both inputs shall be independently opto-isolated from all other control circuitry and an internal protocol manager shall allow priority management or merging of both DMX inputs.
7. An infrared LED link shall be provided on the control module face to permit hard copy printouts of all programmed data via a hand held printer.
8. A separate air filter and grill assembly shall provide a means for easy routine maintenance.
9. Rack thermal protection shall be employed via a mechanical relay interface to the existing two CD80 rack OEM thermal sensors.
10. The entire installation of the control module and all of its related parts shall be made with the assistance of the factory-authorized representative of the equipment manufacturer. The equipment manufacturer's recommendations and instructions are to be fully implemented.

B. Control electronics:

1. The control electronics shall be contained in one plug in tray.
2. The control electronics shall be capable of controlling up to 96 dimmers each in the CD80 cabinets and will operate with a voltage range of 85-264VACat 50 or 60Hz. Two are required.

3. The control module shall be capable of storing up to 20 presets in the form of a DMX snapshot or individually programmed via the keypad and each scene shall have a selectable fade time of 0-99 seconds.
4. The DMX input ports shall accept two independent sources of DMX512 data simultaneously and shall comply with USITT DMX512-A standard protocol for digital data control.
5. It shall be possible to backup and protect all system configuration data from power failure by EEPROM.
6. The control electronics shall contain a removable memory dongle to facilitate remote or offsite backup of all system configuration and ease of future firmware upgrades.
7. Dedicated dry contacts shall be provided for BMS, HVAC, security and fire alarm.
8. The control module shall include a green LED indicator for power supply and microprocessor status.
9. The control module shall include three green LEDs for phase detect and two yellow LEDs for data receive indication.
10. The control module shall include two red LEDs for alarm status or dimmer rack over temperature.
11. A reset button shall be included on the face of the module. Resetting by button or power up shall not affect any stored parameters or presets.
12. It shall be possible to lock and unlock the programming keypad.

C. Furnish the control modules from the following approved manufacturer or an approved equal; see system one line for quantities.

1. Johnson Systems, Inc.

CAT. #	DESCRIPTION
CD-3000 AE 96RR	2 each Stage lighting dimmer rack control module for dimmers 1-96 and for dimmers 97-192

2.7 HOUSE LIGHTING CONTROL MODULES

A. The control electronics shall be of modular design. The control electronics module must be field replaceable without disconnecting any control wiring.

B. Furnish the control modules from one of the following approved manufacturers or an approved equal; see system one line for quantities.

1. Strand Lighting Inc.

CAT. #	DESCRIPTION
	Control modules for each A21 cabinet
	One spare

2.8 DISTRIBUTED DIMMING RACEWAYS – “DIMMER BARS”

A. General:

1. The dimmer strips shall be fully digital and designed specifically for entertainment lighting applications.

2. The strip shall have a modular construction so that users can install a range of modules to suit the specific needs of a project.
3. There shall be an alternate construction format for a wall mount module designed to attached to a wall, pipe rail or be freestanding on a floor.
4. System setup and preset data shall, as standard, be fully user programmable.

B. Mechanical.

1. Each dimmer strip shall be formed of cold-rolled steel sections. Exterior surfaces shall be finished in fine-textured, scratch-resistant powder coat paint. Interior surfaces shall have a corrosion-resistant finish.
2. Dimmer strips shall be 6 inches (152.4 mm) high X 4 inches (101.6 mm) deep by 72 inches (1,828.8 mm) long and weigh 38.5 lbs (17.5kg)
3. The dimming system shall meet or exceed FCC 'Class A' standards for RFI/EMI emissions.
4. The system shall be ETL and cETL marked.

C. Installation.

1. The dimmer strip shall be factory pre-wired and dressed. The contractor shall provide and terminate feed wiring on screw terminals fitted within the raceway.
2. All terminations and internal wiring shall be accessible via a removable front cover panel. The Processor Module shall be accessible for programming at all time.
3. The dimmer strips shall be over hung on the front of house cove lighting battens.

D. Electrical.

1. The strip shall support 3 phase 4 wire, or single phase 3 wire power inputs. A set of standard power input cables shall be available.
2. The system shall accept any input voltage from 90-264 volts.
3. The system ground shall be made at a grounding lug in the raceway termination area.
4. All equipment shall be ETL listed.

E. Processor Control and Communications

1. General: Each self-contained dimming system shall include a processor with six push buttons and an LCD display, used to set the DMX512 device address, execute self-test diagnostics and to select special operating modes.
2. The processor shall be designed to simply configure and address any combination of available power modules. The processor shall have DMX512 In/Out.
3. The processor shall be simple to set up with a menu system that allows the operator to easily configure each of the three module types in any configuration. Dimmer modules shall support two channels each of which can be configured for Forward phase, reverse phase, LED and auto load select operation. Relay modules shall be single channel devices and LED power supply modules shall provide up to 12 channels of control for each connected luminaire up. Dimmer and relay modules shall have local controls with indicators to facility set up and testing.
4. The processor shall report test and diagnostic data appropriate for each module type.
5. There shall be password protection for the processor to lock the processor against accidental changes to configuration.

F. Power modules: There shall be three standard power modules available for the system:

1. Dimmer module: The system shall support the standard S21 dual IGBT dimmer module for dimming conventional or line voltage LED loads. The module shall have two dimmers supporting a total load of 2.4kW at any input voltage.
2. LED module:
   This module shall have electronics to manage and power up to 4 Led luminaires. The unit shall have a 360 watt 24V (to be confirmed) power supply. Luminaire addressing electronics and 4 – 4 pin XLR connectors for luminaire connectivity. Luminaires shall operate up to 60 feet from the Power distribution strip. The LED module when connected to the processor shall be configurable to support two color, three color and 5 color LED luminaires with individual addressing and set up for each output connector.
   The central processor shall permit users to set up 8 or 16 bit operating modes and add an optional intensity channel to simplify system operation.

3. Relay module with data distribution:
   This module shall supply a total of 2400 watts of switched power to two GTL output connectors. Each module shall also have two DMX out connectors with termination switches. These modules will support mains power LED luminaires or other switched loads. The module shall be configured by the processor to provide remote control from any processor input.

G. Provide the dimming raceways. Strand S21 LED Raceway is basis of design or an approved equal; see system one line for quantities.

CAT. #	DESCRIPTION
Model # 71800-DT-DT-DT	Pipe mount S21 LED Raceways Dimming modules with L5-20 receptacles.
Model #71438	and 12ft power input cable with L21-20p GTL plug
Model #71727	Pipe mount brackets; Dimmer bar is to be rigged to over hang on lighting batten
Model #71752	Cheeseboro Clamp
Model # 71346	DMX Terminator as needed

2.9 STAGE CONTROL PLUGGING STATION

A. Inspect, clean, repair and reuse the existing stage lighting control plugging stations backbox. Inspection and cleaning shall include but not be limited to;

1. Thorough cleaning of the control stations with compressed air.
2. Inspection of all control station control connectors. Replace as necessary with new parts only.

B. Provide new cover plates and connectors.

2.10 DMX DISTRIBUTION

A. Furnish equipment as shown on system drawing.

B. Install the following hardware (when quantities above those shown on the system drawing are called for, those extras shall be furnished as loose equipment);

1. Pathway wall mount eDin enclosure with power supply and opto- splitter for front of house DMX distribution.
   a. Large enclosure
   b. Power supply
   c. eDIN DMX merger
   d. eDin DMX repeater
2. Five (5) 10’ 0”Female DMX 5 pin to Male DMX 5 pin jumper cables.
   a. Lex Products 5pin XLR shielded data cable DMX-5P-10. Alternative manufacturers are Belden or Belkin or an approved equal.

2.11 STAGE LIGHTING CIRCUIT STRIPS

A. General: The over stage lighting circuit strips are to be inspected, cleaned, repaired as needed by the electrical contractor. Assist in this as needed. The lighting circuit strips are to be taken down and reinstall by the rigging contractor180 degrees from their current orientation so that the terminal box is the on stage right end of the lighting circuit strip. The circuiting shall be reworked by the electrical contractor so that circuit numbering remains in its current orientation with the lowest circuit number stage right and the highest number stage left after the lighting circuit strips are reinstalled. Assist in this as needed.

B. See construction drawings for additional information.

PART 3 EXECUTION

3.1 STANDARDS COMPLIANCE

A. Comply with all local building codes.

B. In the absence of specific local codes, comply with the National Electrical Code (NFPA-70) as applicable to installation and construction of stage lighting and control equipment.

C. Where not in conflict with local building codes or the National Electrical Code comply with industry standard professional practices.

D. Installation practices shall be in accordance with OSHA Safety and Health Standards.

3.2 SHOP DRAWINGS

A. Submit within thirty (30) days of the bid acceptance, for review and approval by the Owner and Consultant:

1. Complete shop drawings and data sheets for all items specified.

2. Complete shop drawings for all components, assemblies, sub-assemblies, cabinets, wiring devices and hardware required to implement the work.
3. Riser diagrams showing all quantities, types and sizes of inter-connection wires to be installed by others.
4. Schematics of all block assemblies and sub-assemblies, including pin out identification of all low voltage cable connectors.
5. Approval of shop drawings does not relieve the Contractor of the responsibility of providing equipment in accordance with these specifications. Any deviations from the specifications shall be "starred" and noted in 1/4" high letters. Only deviations, which upgrade the quality of the equipment, shall be considered.
6. In addition to drawings, the Contractor may elect to submit catalog cuts for certain standard equipment items. These shall contain full information on dimensions, construction, applications, etc. to permit proper evaluation. In addition, they shall be properly identified as to their intended use and any options or variations shall be clearly noted.
7. Samples may be requested by the Owner or Consultant and shall be furnished for inspection at the Owner’s office, at the Contractor's sole expense.
8. Prior to the commencement of fabrication and delivery, the Contractor shall submit for approval, to the Owner an outline of a proposed commencement and completion schedule of project requirements.

3.3 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver stage lighting equipment and controls to job site securely wrapped in containers.

B. Coordinate delivery dates with the Division 26 contractor

C. All equipment shall be stored in a clean, dry space.

D. Discrepancies in quantities or missing equipment shall be noted, in writing, and brought to the attention of the manufacturer within five days of receipt.

E. Replacement of missing or damaged equipment shall be the responsibility of the Contractor.

F. Handle equipment and controls carefully to prevent breakage, denting and scoring finish.

G. Replace and return damaged units to equipment manufacturer immediately.

H. Store in original cartons and protect from dirt, physical damage, weather, and construction traffic.

3.4 INSTALLATION

A. The Contractor shall furnish, deliver, install and terminate all system control wires.

1. All cables shall be permanently labeled at every termination. The label shall not be hand written. Clear heat shrink shall cover the label.
2. Service loops of not less than 6" will be present at all terminations to equipment.
3. All pulls to be made by hand, care will be taken not to nick cable jackets, and any nicked or damaged cable will be replaced.

4. A pull string will be left in all conduits after wire is installed.
5. NO SPLICES WHATSOEVER IN CONDUIT!
6. Include spare cables with all field runs. Quantity to be 10% or 1 whichever is greater unless otherwise specified.
7. Where shielded cable is in use leave shield drain wire the same length as the circuit conductor(s), sleeve shield drain wire in green pvc tubing. Cap where the cable jacket was removed with heat shrink. Where the shield drain wire is to be lifted follow the above and fold back over cable jacket. Then cap end with heat shrink. Do not use a single piece of heat shrink for this use two smaller ones.
8. All soldering will be clean and neat and not exhibit evidence of a " cold" joint, were necessary heat sinks will be used. Use only rosin core "electronic type" solder.
9. Wire nuts will be not allowed.

B. The Contractor shall furnish and install all system control devices.

C. The installation of all work shall be neat.

D. All boxes, equipment, etc shall be plumb and square.

E. The installation shall conform to the plans and spec.

F. The contractor shall not commence the installation of equipment and devices, other than the pulling of cable, until all areas are clean, painted and finished to a point that they are completely dust, dirt, lint, fiber and airborne particle free. The air conditioning system must be operating to its design level and be able to keep all areas with control equipment stable.

3.5 INSTALLATION COORDINATION

A. The Contractor shall specifically coordinate the placement and sizes of conduit relating to this work and shall specifically review and approve the conduit rough-in in time to advise all parties of needed changes, omissions, etc.

B. The Contractor shall report this successful coordination in writing to the Owner and Consultant.

C. If any conflicts or omissions occur as a result of the Contractor's unsuccessful coordination of the above mentioned work, it shall be the Contractor's responsibility to correct, furnish and install any additional material that may be required.

D. The contractor shall at all times coordinate his work with the other trades to ensure smooth progress of work and satisfactory final results.

E. The Contractor shall examine areas and conditions under which stage lighting and controls are to be installed and notify the Owner in writing of conditions detrimental to proper installation and operation.

3.6 INSPECTION AND TESTING:

A. During the installation of the equipment the contractor shall arrange for access as necessary for inspection of equipment by the owner's and/or consultant's representatives.

B. Provide a safe means of accessing all system components for all visits.

C. Equipment Pretesting: All racks are to be built and wired in contractors shop and tested prior to delivery to site. All other equipment is to be tested prior to delivery and installation. A written test report will be submitted to the owner.

D. Final Inspection:

1. The final inspection will confirm that the systems, as installed, meet the requirements of this spec, the contract documents, and the approved contractor's shop drawing and submittals.
2. The contractor will inform the owner in writing of the system's completion. The contractor will then request final inspection by the consultant, and carry out the necessary coordination. This coordination includes:
   a. Giving at least fourteen days notice to the consultant prior to the final inspection.
   b. Arranging for the contractor's and consultants exclusive use of the space.
   c. Arranging for a sound technician to be available to control the sound system as required.
   d. The contractor's job foreman and one additional worker familiar with the job will be present during all check out, testing and inspection.

E. Contractor will complete the following tasks prior to consultant's arrival:

1. Unpack and assemble all portable equipment.
2. Place all portable equipment in one location.
3. If anything has been turned over to the owner have the signed Letters of Transmittal on site.
4. Complete all required paperwork (pre-testing reports, letters indicating successful coordination of the installation, etc.).
5. Remove all security covers.
6. Contractor will provide all necessary software, cables, and interfaces to facilitate the setting of computer controlled, remote controlled or digitally controlled equipment.

F. Contractor will provide the following test equipment for use during inspection and acceptance testing:

1. Some type of light meter
2. Some type of DMX checking device
3. Some type of Multi-meter.
4. Contractor will provide safe means to access all system components during the entire commissioning process.
5. Contractor shall provide personal and equipment to make any adjustments to the theatrical lighting system(s), as well as to correct problems, for the entire inspection and testing period.

G. The Theatre Consultant or his representative will conduct all final system tests in order to determine final acceptance.

H. In no event shall the theatrical lighting systems installation be submitted for final approval or acceptance until any and all elements of the facility that may have a bearing on the system

performance, including but not limited to doors, windows, HVAC, carpeting, furniture, wall coverings, stage flooring, rigging systems, interior design elements, architectural lighting and lighting control systems have been completed and are operable. All elements that may affect stage lighting systems operation or performance shall be "on" and operating during adjustments.

I. The stage lighting contractor will be responsible for coordinating the requirements of this paragraph with other work on the project.

J. Equipment Backorders. Should any component or equipment be on backorder at time of system inspection and testing, the contractor shall provide comparable loaner equipment, with loaner equipment provided at contractor's expense. Said equipment shall remain on-site until backordered equipment is delivered and installed.

3.7 MANUFACTURER'S SERVICES

A. The Contractor shall provide for:

1. A manufacturer's field service engineer to perform initial system activation. Under no circumstances shall power be applied to any equipment prior to initial system activation.
2. The manufacturer's field service engineer shall inspect and confirm that all low voltage terminations are correct.
3. Such engineering services shall be furnished within twenty-one (21) days of a written request by The Contractor.

3.8 TRAINING AND INSTRUCTION

A. The Contractor shall furnish sixteen (16) hours of onsite instruction to Owner designated persons. This instruction shall happen on four occasions. The general conditions require all training sessions to be videotaped. This contractor is to coordinate with this requirement and if required perform the taping.
1.
2. The first occasion shall take place at the time of initial system activation and be performed by the manufacturer's field service engineer. The duration of this occasion shall be not less than three (3) hours. This instruction shall cover all aspects of operation and maintenance required by this system.
3. All other occasions shall be coordinated with the owner representative and Contractor with (21) days written notice. This instruction shall be an overall review of the system operation and detailed console operations. The finial occasion shall take place within the first six months following system activation.

B. Provide operational assistance for the first usage of the system. This is to be on the owner's time schedule but, not to exceed 8 hours.

3.9 MANUALS

A. Prepare four identical copies of owner's manuals. The owner is to receive two, the consultant receives one and the contractor retains one. Additionally, inside the primary dimmer or auxiliary control rack, provide a document pouch and one set of final as-built drawings. Before distribution of manuals submit one copy to consultant for approval. Each manual is to contain the following:

1. System one line drawing including all labeling and changes (“ as builts “).
2. Owner’s manual for each piece of equipment.
3. Schematic diagram for each piece of equipment.
4. Contractors service phone number in a conspicuous place.
5. All test reports.

3.10 WARRANTIES

A. Contractor will warrant the system to be free from defects in materials and workmanship for a period of one year from the date of acceptance, or first beneficial use, whichever comes first. Acts of god and owner abuse or neglect are not covered.

B. During the warranty period the contractor will respond to and correct any call for service within one day of the call.

C. Loaner equipment will be provided if necessary.

D. The manufacturer of the stage lighting and control equipment shall warranty the electrical distribution, dimming and control equipment to be free from defects of material or workmanship for a period of two years from the date of acceptance.

E. The manufacturer shall warranty all fixtures and accessories (except lamps) to be free from defects of material or workmanship for a period of one year from the date of acceptance. During the period of this warranty, equipment that proves to be defective shall be repaired or replaced at no charge (excluding freight). Unauthorized local repairs of equipment during the warranty period shall relieve the manufacturer of his responsibilities under this warranty.

F. Include the name, address, and phone number of at least two- (2) factory authorized Field Warranty centers within a 250-mile radius of the job site in the operation and maintenance manual.

3.11 FINAL ACCEPTANCE

A. The following conditions must be met before final acceptance will be granted:

B. Inventory of all equipment by the project Owner or his representative.

C. All inventoried portable equipment is in secure storage, accessible only by the Owner.

D. Approval of final tests and inspections by the project, Theatre Consultant, and Owner.

E. Submittal to the Owner of three (3) signed copies of the warranty(ies).

F. Satisfactory completion of all punch list items.

G. At the date of system activation, the Contractor shall furnish and replace all lamps in stage lighting fixtures, which are observed to be noticeably dimmed, as judged by the Owner or his representative.

END OF SECTION 116153

SECTION 260100

ELECTRICAL GENERAL PROVISIONS

PART 1 - GENERAL

1.1 GENERAL CONDITIONS

A. Each Section within Division 26 - Electrical, shall conform to the requirements of the General Conditions of the Contract, including Supplementary General Conditions, Special Conditions, and all requirements of Division 1.

B. Each Section within Division 26 - Electrical, shall conform to the additional requirements of this Section, Electrical General Provisions.

1.2 DEFINITIONS

A. The term "As indicated" means as shown on drawings by notes, graphics or schedules, or written into other portions of contract documents. Terms such as "shown", "noted", "scheduled" and "specified" have same meaning as "indicated", and are used to assist the reader in locating particular information.

B. The term "Provide" means furnish and install.

C. The term "Furnish" means furnish only, for installation by others.

D. The term "Install" means install whether equipment has been furnished under this Contract, by the Owner, or by others.

1.3 REFERENCE STANDARDS

A. Material, equipment and installation shall meet requirements of applicable codes and standards listed below. Electrical material and equipment shall bear the UL label except where UL does not label such types of material and equipment.

B. Reference standards are referred to by abbreviation as follows:

1. National Electrical Code (NEC) ..... NFPA 70
2. National Electrical Manufacturers Association ..... NEMA
3. Uniform Federal Accessibility Standards ..... UFAS
4. Virginia Uniform State Building Code ..... USBC

1.4 APPLICABLE PUBLICATIONS

A. The publications listed in each Section form a part of that Section to the extent referenced. The publications are referenced to in the text by the basic designation only.

B. When a standard is specified by reference, comply with requirements and recommendations stated in that standard, except when requirements are modified by the Contract Documents, or applicable codes establish stricter standards.

C. When a standard is not specified by reference in a Section, the work of that Section shall comply with applicable codes listed in the General Conditions, and Supplementary General Conditions.

D. The publication date is the publication in effect as of the bid date, except when a specific publication date is specified.

E. Obtain copies of referenced standards direct from publication source, when needed for proper performance of work, or when required for submittal by Contract Documents.

1.5 RECORD DRAWINGS: Maintain a dedicated set of drawings on the jobsite and mark all variations taken to the Contract Drawings.

1.6 INTENT OF DRAWINGS AND SPECIFICATIONS

A. The implied and stated intent of the drawings and specifications is to establish minimum acceptable quality standards for materials, equipment and workmanship, and to provide an operable electrical system complete in every respect.

B. The drawings are diagrammatic, intending to show general arrangement and location of system components, and are not intended to be rigid in detail.

C. Due to the small scale of the drawings, and to unforeseen job conditions, all required offsets and fittings may not be shown but shall be provided at no change in Contract price.

1.7 SHOP DRAWINGS

A. Submit Shop Drawings in accordance with Section 001300 - Submitals.

B. Designate in the construction schedule, or in a separate coordinated schedule, the dates for submission and the dates that reviewed Shop Drawings will be needed.

C. Shop Drawings shall be presented in a clear and thorough manner.

D. Identify details by reference to sheet and detail, schedule or room numbers shown on Contract Drawings.

E. Submit for approval all drawings prepared by the Contractor, for the Contractor's use.

F. Prepare product data as follows:

1. Clearly mark each copy to identify pertinent products or models.
2. Show performance characteristics and capacities.
3. Show dimensions and clearances required.
4. Show wiring diagrams and controls.

G. Manufacturer's standard schematic drawings and diagrams:

1. Modify drawings and diagrams to delete information which is not applicable to the work.
2. Supplement standard information to provide information specifically applicable to the work.

H. The Contractor shall:

1. Review Shop Drawings prior to submission.
2. Determine and verify:
   a. Field measurements.
   b. Field construction criteria.
   c. Catalog numbers and similar data.
   d. Conformance with specifications.
3. Coordinate each submittal with requirements of the work and of the Contract Documents.
4. Notify the Engineer in writing, at time of submission, of any deviations in the submittals from requirements of the Contract Documents.
5. Begin no fabrication or work which requires submittals until return of submittals with Engineer approval.
6. Make submittals promptly in accordance with approved schedule, and in such sequence as to cause no delay in the work or in the work of any other trade.

I. Submittals shall contain:

1. The date of submission and the dates of any previous submissions.
2. The Project title and number.
3. Contract identification.
4. The names of:
   a. Contractor.
   b. Supplier.
   c. Manufacturer.
5. Identification of the product, with the specification section number.
6. Field dimensions, clearly identified as such.
7. Relation to adjacent or critical features of the work or materials.
8. Applicable standards.
9. Identification of deviations from Contract Documents.
10. Identification of revisions on resubmittals.
11. Each submittal shall be limited to a single specification section. Submittals shall not be grouped with other sections in common binders or under common control sheets. Each submittal shall have a cover/control sheet containing the information listed above (1 thru 10).
12. Submittals which do not comply with these requirements may be returned with no action taken at the reviewer’s discretion.

J. For resubmission requirements the Contractor shall:

1. Make required corrections and changes in the submittals and resubmit until approved.
2. Revise initial drawings or data, and resubmit as specified for the initial submittal.

3. Indicate any changes which have been made other than those requested in the previous submittal.

K. Submit shop drawings for the following identified by section number and product name:

260200	Fire Stopping Systems
260300	Metallic Raceway
260519	Wire, Cable, and Wiring (Single-Conductor)
260533	Pull and Junction Boxes
260534	Wiring Device Boxes
262416	Panelboards
262726	Wiring Devices
262816	Molded Case Circuit Breakers (MCCB)
265100	Lighting, Interior
265201	Emergency Lighting Uninterruptible Power Supply

1.8 OPERATING AND MAINTENANCE DATA

A. Compile product data and related information appropriate for Owner's maintenance and operation of products furnished under Contract.

B. Preparation of data shall be done by personnel:

1. Trained and experienced in maintenance and operation of described products.
2. Familiar with requirements of this Section.
3. Skilled as technical writer to the extent required to communicate essential data.
4. Skilled as draftsman competent to prepare required drawings.

C. Prepare data in form of an instructional manual for use by Owner's personnel.

D. Format:

1. Size: 8 1/2 in. x 11 in.
2. Paper: 20 pound minimum, white, for typed pages.
3. Text: Manufacturer's printed data, or neatly typewritten.
4. Drawings:
   a. Provide reinforced punched binder tab, bind in with text.
   b. Fold larger drawings to size of text pages.
5. Provide fly-leaf for each separate product, or each piece of operating equipment.
   a. Provide typed description of product, and major component parts of equipment.
   b. Provide indexed tabs.
6. Cover: Identify each volume with typed or printed title "OPERATING AND MAINTENANCE INSTRUCTIONS". List:
   a. Title of Project.
   b. Identity of separate structure as applicable.
   c. Identity of general subject matter covered in the manual.

E. Binders:

1. Commercial quality three-ring binders with durable and cleanable plastic covers.

2. Minimum ring size: 1 inch.
3. When multiple binders are used, correlate the data into related consistent groupings.

F. Manual shall contain a neatly typewritten table of contents for each volume, arranged in systematic order.

1. Contractor, name of responsible principal, address and telephone number.
2. A list of each product required to be included, indexed to content of the volume.
3. List, with each product, name, address and telephone number of:
   a. Subcontractor or installer.
   b. Maintenance contractor, as appropriate.
   c. Identify area of responsibility of each.
   d. Local source of supply for parts and replacement.
4. Identify each product by product name and other identifying symbols as set forth in Contract Documents.

G. Product Data:

1. Include only those sheets which are pertinent to the specific product.
2. Annotate each sheet to:
   a. Clearly identify specific product or part installed.
   b. Clearly identify data applicable to installation.
   c. Delete references to inapplicable information.

H. Drawings:

1. Supplement product data with drawings as necessary to clearly illustrate:
   a. Relations of component parts of equipment and systems.
   b. Wiring diagrams.
2. Coordinate drawings with information in Project Record Documents to assure correct illustration of completed installation.
3. Do not use Project Record Documents as maintenance drawings.

I. Written text, as required to supplement product data for the particular installation:

1. Organize in consistent format under separate headings for different procedures.
2. Provide logical sequence of instructions for each procedure.

J. Copy of each warranty, bond and service contract issued. Provide information sheet for Owner's personnel, stating:

1. Proper procedures in event of failure.
2. Instances which might affect validity of warranties or bonds.

K. Submittals:

1. For review: Submit two hard copies of complete manual.
2. For archives: After the review manual has been approved, submit four hard copies of the complete manual in final form.

L. Submit operating and maintenance data on the following:

265210 Emergency Lighting Uninterruptible Power Supply

1.9 **DEMOLITION** shall be performed as specified in Section 001070 - Selective Demolition.

1.10 **CUTTING AND PATCHING** shall be performed as specified in Section 001045 - Cutting and Patching.

PART 2- PRODUCTS

2.1 NAMEPLATES

A. Material:

1. Equipment nameplates shall be constructed of laminated phenolic with a black center core sandwiched between white layers.
2. Warning nameplates shall be constructed of laminated phenolic with a white center core sandwiched between red layers.

B. Inscription: Letters shall be engraved in the phenolic to form letters 3/8 inches high, unless indicated otherwise on drawings.

C. Fasteners shall be screws or a nonadhesive type fastener.

PART 3 - EXECUTION

3.1 All electrical work shall be performed by or under the direct supervision of a master electrician licensed to work in the project location.

3.2 Mount on each panelboard, dimmer cabinet and emergency lighting uninterruptible power supply, a nameplate descriptive of the equipment or equipment controlled.

END OF SECTION 260100

SECTION 260130

REWORKING EXISTING SYSTEM

PART 1- GENERAL

1.1 ELECTRICAL GENERAL PROVISIONS

A. Provisions of Section 260100 - Electrical General Provisions shall be made an integral part of this section.

1.2 DESCRIPTION: Make indicated changes to existing facilities and equipment. Where indicated changes to nonelectrical facilities require minor associated electrical changes, these changes shall be accomplished even if not specifically indicated.

1.3 Provide material and labor necessary for temporary electrical facilities required to maintain facility in full operation for the duration of the project.

PART 2 - PRODUCTS

2.1 Products shall be new and as specified in this Division unless reuse of existing facilities is specifically indicated on the drawings.

PART 3 - EXECUTION

3.1 PROTECTION OF EXISTING PREMISES

A. Protect the existing premises, including the buildings, grounds and appurtenances, from damage which might be done or caused by work performed under this DIVISION. Repair damage so as to restore the damaged areas to their original condition.

B. Provide protective materials and coverings where necessary, to guard building surfaces and building contents from damages due to the operations of this work.

3.2 MAINTENANCE OF EXISTING PREMISES

A. During the execution of the work of this DIVISION the Owner will continue to occupy the existing building and will therefore require continuous operation of all existing facilities. Schedule outages required for construction purposes for the shortest practical periods of time, and then only by pre-arrangement with the Owner for specific, mutually agreeable periods, after each of which the interruption shall cease and service shall be restored.

B. Perform work under this DIVISION in such a manner as to cause the least amount of interruption of existing services to the occupied spaces.

C. Outages required to be performed outside of normal working hours in order to meet the project schedule shall be performed without additional cost to the Owner.

3.3 ELECTRICAL DEMOLITION

A. Disconnect and remove all electrical materials and equipment indicated to be removed. This includes, but is not limited to, conduit, conductors, panelboards, lighting fixtures, wiring devices, outlet and junction boxes, and supporting devices.

B. Coordinate all phasing of demolition work with the Owner's representative to minimize interruption of power and the functioning of surrounding spaces.

C. Cut back exposed portions of abandoned, concealed conduit to facilitate patching.

D. Dispose of removed equipment and material.

E. Update directories of panelboards from which circuits have been modified or disconnected.

END OF SECTION 260130

SECTION 260200

FIRE STOPPING

PART 1 - GENERAL

1.1 ELECTRICAL GENERAL PROVISIONS

A. Provisions of Section 260100 - Electrical General Provisions shall be made an integral part of this section.

1.2 INSTALLER QUALIFICATIONS: The installer shall be an Underwriters Laboratories Qualified Firestop Contractor.

PART 2 - PRODUCTS

2.1 FIRE STOP MATERIALS shall be one of the following:

A. 3M Electrical Products Division, CP25 Series.

B. CSD Sealing Systems

C. International Protective Coatings Corporation, FS and FST Series.

D. Nelson Firestop Products

E. Specified Technologies, Inc.

PART 3 - EXECUTION

3.1 APPLICATION: Install fire stop materials where conduits penetrate floors or walls.

3.2 PENETRATIONS: Where conduits penetrate walls or floors, make penetrations in a workmanlike manner using drills, core drills or other appropriate tools.

END OF SECTION 260200

SECTION 260300

METALLIC RACEWAYS

PART 1 - GENERAL

1.1 ELECTRICAL GENERAL PROVISIONS

A. Provisions of Section 260100 - Electrical General Provisions shall be made an integral part of this section.

1.2 REFERENCES: ANSI PUBLICATIONS

A. C80.3 Electrical Metallic Tubing, Zinc Coated

PART 2 - PRODUCTS

2.1 ELECTRICAL METALLIC TUBING (EMT)

A. High strength galvanized, 3/4 inch minimum size, 4 inch maximum size.

B. Fittings of same finish and material as tubing. Use compression type fittings only.

2.2 FLEXIBLE METAL CONDUIT: Galvanized, single strip.

2.3 CONDUIT BUSHINGS

A. Insulated

1. Type SBT by O-Z / Gedney
2. Series 2800 by Raco
3. Series TC700 by Steel City.

B. Grounding:

1. O-Z / Gedney Type BLG
2. Raco series 1222 thru 1236
3. Steel City Type BG.

C. Sealing for conduits entering enclosure: O-Z / Gedney Type GRK or Type CSB.

2.4 PULL ROPE: 5/32 inch polyethylene rope.

2.5 THREAD LUBRICANT / SEALANT shall be Crouse-Hinds Type STL or equal by Ideal or O-Z / Gedney.

PART 3 - EXECUTION

3.1 APPLICATION

A. Install electrical metallic tubing for all conduit runs.

B. Install flexible metal conduit for connections to all light fixtures.

3.2 CONDUIT INSTALLATION:

A. Cut all conduit with hacksaw or approved cutting machine and ream after threading to remove all burrs.

B. Arrangement

1. Space groups of conduits uniformly. For bends and offsets, use an approved hickey or bending machine.
2. Install runs of conduit parallel or perpendicular to walls, structural members, or intersections of vertical planes and ceilings. Above the auditorium ceiling, install in arcs paralleling the light fixtures.
3. Provide right angle turns consisting of fittings or symmetrical bends.

C. Join conduit with approved couplings.

D. Keep conduit, fittings, and boxes free from foreign matter, before, during, and after installation.

3.3 CONNECTION OF CONDUIT TO SHEET METAL BOXES AND ENCLOSURES:

A. Fasten conduit securely to outlets, junctions, and pull boxes to ensure electrical continuity of the raceway system.

B. Connection to boxes and enclosures:

1. Install compression type box connectors with insulated throats.
2. Flexible conduit: Insulating bushings and double locknuts.

3.4 INSTALL PULL ROPE in each conduit indicated to be empty.

3.5 CONDUIT IDENTIFICATION

A. Identify each exposed conduit as it leaves the enclosure from which it derives its source.

B. Identify using paint pen markers.

C. Place markings within 6” of enclosure.

D. Identify feeders contained within each conduit by number.

E. Identify branch circuits contained within each conduit by number and insulation color.

END OF SECTION 260300

SECTION 260519

WIRE, CABLE, AND WIRING (SINGLE-CONDUCTOR)

PART 1 - GENERAL

1.1 ELECTRICAL GENERAL PROVISIONS

A. Provisions of Section 260100 - Electrical General Provisions shall be made an integral part of this section.

1.2 REFERENCES: NEMA PUBLICATIONS

A. WC 5 Thermoplastic-insulated Wire and Cable for the Transmission and Distribution of Electrical Energy.

B. WC 7 Cross-linked-thermosetting-polyethylene-insulated Wire and Cable for the Transmission and Distribution of Electrical Energy.

PART 2 - PRODUCTS

2.1 CONDUCTOR CODING

A. Color code insulated grounding conductors in accordance with NEC 210-5(B).

B. Color code current carrying conductors using the coding system presently used in the theater.

C. No. 12 thru No. 6 conductors shall have continuous insulation color.

D. Color code conductors larger than No. 6 which do not have continuous insulation color by application of at least two laps of colored tape on each conductor at all points of access including junction boxes.

E. Each coil of wire shall be delivered to the job in its original package bearing the UL label. Wire shall be marked with size and type every two feet. The neutral and each phase wire shall be furnished with different color insulation in sizes up to and including No. 6 AWG. Sizes No. 4 and larger may be provided in black, if identified by a series of two or more colored bands completely encircling the conductor, located at or near each terminal point, in all junction boxes and at all other points so designated by the inspecting authority. Colored bands shall not be less than 3 inch nor less than two conductor diameters in width, whichever is greater. The same color shall be used for each phase wire throughout the system.

2.2 CONDUCTOR REQUIREMENTS

A. Conductors shall be soft annealed copper.

B. Provide No. 12 conductors, unless otherwise indicated.

C. Conductors No. 8 AWG and larger shall be stranded.

D. Conductors No. 10 AWG and smaller may be solid.

E. Insulation

1. Shall be type THW, THWN, XHHW.
2. Shall be rated for 600 volts, 75 deg C unless otherwise indicated..

2.3 SPLICES

A. Splices for conductors No. 10 and 12 AWG shall have the following features:

1. Pre-insulated spring connector encased in a steel shell and rated at not less than 105 degrees C.
2. Insulated vinyl cap with a minimum 3/8 inch skirt to cover the bare wires.
3. UL approved for use in enclosures, junction boxes and fixtures.
4. Manufacturer and type:
   a. 3M Company, "Scotch Lok" Type Y, R and B
   b. Ideal Industries, Wire Nut
   c. Approved equal.

B. Splices for No. 8 and larger conductors shall be:

1. ClearTap Insulated Multi-Tap Connectors by Ilsco.
2. Insulated Connector Blocks: Series IT, ISR, IPL, IPLD, IPLDH or IPLM by NSI Industries, Inc.
3. AMT Series by Thomas & Betts, Blackburn

2.4 PULLING COMPOUND: Pulling compound shall be Ideal Industries Yellow 77, Polywater Lubricant J or WJ, or approved equal.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Furnish and install all wire and cable of AWG sizes indicated on the drawings and as specified hereinafter or required for the complete installation.

B. Install all wiring in conduit.

1. Complete and clean out conduit system before pulling wire.
2. Use pulling compound as required to facilitate pulling.
3. Pull conductors using recognized methods and equipment leaving ample lengths of wire at junctions for connections.

C. Form and tie all wiring in panelboards, switchboards, switchgear, motor control centers, control panels and the like.

1. Bundle wiring and tie at 6 inch intervals.

2. Train bundles parallel to adjacent enclosure surfaces and in such a manner as to prevent abrasion due to rubbing or contact with bus work or other non-associated wiring.

D. Identify all wiring at all points of access including junction and pull boxes. Identify branch circuits by name of panelboard or dimmer cabinet from which they originate and circuit number.

3.2 SPLICING: Install conductors continuous from outlet to outlet with splices made only in junction and outlet boxes, and in pull boxes only as required to meet certain conditions.

END OF SECTION 260519

SECTION 260526

GROUNDING

PART 1 - GENERAL

1.1 ELECTRICAL GENERAL PROVISIONS

A. Provisions of Section 260100 - Electrical General Provisions shall be made an integral part of this section.

1.2 SCOPE

A. Grounding shall be in accordance with NEC as a minimum. Additional grounding requirements shall be as specified or indicated on drawings.

PART 2 - PRODUCTS

2.1 CONDUCTORS: Equipment grounding conductors in raceways shall be insulated copper.

PART 3 - EXECUTION

3.1 EQUIPMENT GROUNDING

A. Install equipment grounding conductors in all raceways containing conductors having 100 volts or more to ground.

B. Ground all enclosures.

C. Make certain that the metallic raceway system is electrically continuous.

END OF SECTION 260526

SECTION 260529

SUPPORTING DEVICES

PART 1 - GENERAL

1.1 ELECTRICAL GENERAL PROVISIONS

A. Provisions of Section 260100 - Electrical General Provisions shall be made an integral part of this section.

B. Supporting material shall be complete with hangers, connectors, bolts, clamps, and necessary accessories to make a complete installation.

1.2 LOADING

A. Spans up to 5 Feet: Deflection shall not exceed 1 / 240 of span.

B. Spans 5 Feet and Greater: Deflection shall not exceed 1 / 360 of span.

C. Compressive loading shall not exceed 33 percent of manufacturer's published ratings.

PART 2 - PRODUCTS

2.1 GENERAL

A. Supporting material shall be complete with hangers, connectors, bolts, clamps, and necessary accessories to make a complete installation.

B. Materials shall be galvanized or cadmium plated steel.

C. Support systems shall be composed of standard structural shapes or factory fabricated. Acceptable manufacturers of factory fabricated support systems are:

1. B-Line Systems, Inc.
2. Midland-Ross Corporation, Electrical Products Division (Kindorf)
3. T.J. Cope, Inc. (Aickinstrut)
4. Unistrut

PART 3 - EXECUTION

3.1 LAYOUT

A. Install supports suspended from above to maintain minimum 7'-6" clear headroom.

B. Install supports from walls to meet ADA requirements.

3.2 SUPPORT

A. General: Support all equipment which is not inherently self-supporting in such a manner as to effect a rigid and permanent installation.

1. Use factory-fabricated channel, support systems, and as appropriate, other structural shapes such as angles, "C" channels, pipe, and the like.
2. Do not support equipment from roof deck.

B. Conduit support

1. Runs along walls:
   a. Single runs: Galvanized conduit straps or ring bolt type hangers with specialty spring clips.
   b. Single runs: Use clamp and nest back spacers.
   c. Multiple runs: Channel support with conduit fittings, 25 percent spare capacity.
2. Suspended runs: Trapeze rack with 25 percent spare capacity.
3. Vertical runs: Channel support with conduit fittings, 25 percent spare capacity.

3.3 ANCHOR METHODS

A. Hollow masonry: Toggle bolts or spider type expansion anchors.

B. Solid masonry: Lead expansion anchors or preset inserts.

C. Metal surfaces: Machine screws, bolts, or welded studs.

D. Wood surfaces: Wood screws or sheet metal screws

E. Concrete surfaces: Self-drilling anchors or powder-driven studs.

END OF SECTION 260529

SECTION 260533

PULL AND JUNCTION BOXES

PART 1 - GENERAL

1.1 ELECTRICAL GENERAL PROVISIONS

A. Provisions of Section 260100 - Electrical General Provisions shall be made an integral part of this section.

1.2 DESCRIPTION

A. This section specifies boxes installed within buildings and outside above grade.

PART 2 - PRODUCTS

2.1 **BOXES** shall have the following features:

A. Constructed of code gage, hot-rolled sheet steel.

B. Removable covers suitable for surface or flush mounting as applicable.

C. Finish: Hot-dipped galvanized

D. Cadmium plated hardware.

2.2 CONDUIT BODIES

A. Where of sufficient size, conduit bodies may be used in lieu of pull and junction boxes provided they meet the requirements of the NEMA standards referenced above.

B. Material: Cast copper-free aluminum.

C. Finish: Natural.

D. Hardware: Stainless steel.

E. Manufacturer: Appleton, Crouse-Hinds, or Killark.

PART 3 - EXECUTION

3.1 Provide pull and junction boxes where shown on the drawings, and where required for changes in direction, at junction points, and to facilitate wire pulling. Provide additional boxes as required so that wire and cable manufacturer's maximum recommended pulling tensions are not exceeded.

3.2 Size boxes in accordance with NEC unless larger boxes are indicated.

3.3 Identify each pull and junction box.

A. Identify each pull and junction box.

B. Identify using paint pen markers.

C. Markings shall be placed on the box cover and shall identify source and circuit number[s].

D. Where more than one conduit enters and / or leaves a box, markings shall be placed directly on the conduit within six inches of the box.

END OF SECTION 260533

SECTION 260534

WIRING DEVICE BOXES

PART 1 - GENERAL

1.1 ELECTRICAL GENERAL PROVISIONS

A. Provisions of Section 260100 - Electrical General Provisions shall be made an integral part of this section.

PART 2 - PRODUCTS

2.1 **BOXES** shall have the following features:

A. Steel, zinc coated, or cadmium plated inside and out.

B. Box depth shall be a minimum of 2-1/8 inches deep except where otherwise specified.

2.2 PLATES

A. Provide cover or device plates for outlet boxes as follows unless otherwise noted.

B. Plates shall be zinc coated sheet metal sized as appropriate for type of device installed.

PART 3 - EXECUTION

3.1 Support all boxes to maintain alignment and rigidity.

3.2 Clean boxes of all foreign matter prior to installation of wiring or devices.

3.3 **PLATES:** Provide boxes complete with cover or device plate for switches receptacles, or other similar devices.

END OF SECTION 260534

SECTION 242416

PANELBOARDS

PART 1 - GENERAL

1.1 ELECTRICAL GENERAL PROVISIONS

A. Provisions of Section 260100 - Electrical General Provisions shall be made an integral part of this section.

PART 2 - PRODUCTS

2.1 GENERAL

A. Panelboards shall be of dead front construction utilizing thermal magnetic circuit breakers and shall conform to the requirements established by UL, NEMA and the NEC, except where modified herein. Each shall be suitable for its intended application as scheduled, considering voltage, phase, frequency and intended service. All panelboards shall be UL listed and shall be so labeled.

B. Panels known as “loadcenters” will not be accepted.

C. Panelboards shall consist of cabinet or back box, bus assembly, circuit breakers, trim, and all accessories as indicated and required. All characteristics shall be as shown or scheduled on the drawings.

2.2 CABINETS

A. Cabinets or back boxes shall be fabricated from galvanized or equivalent rust resistant sheet steel of thickness to meet code requirements.

B. Cabinet depths shall be the manufacturer's standard except where specific requirements indicate otherwise.

C. Gutter space shall meet UL and NEC requirements.

2.3 BUS

A. The bus assembly shall consist of copper or aluminum bus structure, secured and arranged to receive breakers as indicated.

B. All bussing shall be designed in accordance with UL standards to suit the loading requirements as scheduled and shall be braced to withstand mechanical stresses created by faults of magnitude equivalent to the rating of breakers to be installed.

C. Bus assembly shall include main lugs and main breakers where indicated. Arrangement shall also include double row construction of breakers and allowance for breaker replacement from the front without disturbing adjacent units or main bus connections. Bus and mounting pan shall be designed so that circuit breakers may be changed or added without additional machining, drilling or tapping.

D. Connections to aluminum bus bars shall have special coating, such as plating or inhibiting compound, to prevent electrolysis. Belleville washers shall be used to prevent cold flow.

E. Phase and neutral bus supports shall be insulated.

F. Construction shall be such that the bus will not be exposed upon removal of trim.

G. Provisions shall be included for adjustment of bus assembly and breakers for some vertical alignment and front-to-back position without removal of the assembly.

H. Neutral bus: All panelboards shall be provided with solid neutrals.

I. Ground bus

1. Grounding bars with lugs shall be provided on all panelboards.
2. Ground busses shall be bonded to panel enclosure.

J. Space where shown in panel schedules designates space for future protective devices and shall include bus and support components.

2.4 CIRCUIT BREAKERS: Circuit breakers shall as specified in Section 262816 - Molded Case Circuit Breakers.

2.5 PANELBOARD FRONTS

A. Panelboard fronts shall be of cold rolled steel in accordance with gauges required by code.

B. Trim shall be fastened to box by means of clamps which indicate their position from the front. Trim clamps shall be concealed to present a flat smooth appearance. The use of screws engaging holes in the box flange for fastening trim will not be acceptable.

C. Doors

1. Doors shall be fastened to trim by flush concealed hinges.
2. Doors shall be equipped with a flush type combination catch and keyed lock. Two milled type keys shall be provided with each panel, and all locks shall be keyed alike.
3. Doors shall be equipped with a neat directory frame secured to the inside of the door.

E. Trim and doors shall be properly cleaned and finished with one rust-inhibiting priming coat and a finish coat of light gray enamel, ANSI Z55.1-1967 No. 61. All circuits shall be identified as specified hereinafter.

2.6 MINIMUM SHORT CIRCUIT RATING

A. The minimum short circuit rating for the panelboard shall be the rating of the device within the assembly having the lowest short circuit rating.

B. Maximization of selective tripping coordination is the intent of this design. Use of series rated equipment will not be approved.

2.7 ACCEPTABLE MANUFACTURERS

A. Cutler-Hammer / Westinghouse

B. General Electric

C. Siemens

D. Square D

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install such that top of enclosure is 72 inches above finished floor.

B. Arrange and number circuits exactly as indicated in drawing schedules. If circuit arrangement does no match schedules, Contractor will be back-charged for the cost incurred by the Engineer in editing schedules for As-Built Drawings.

C. Identify each conduit leaving surface mounted panelboards.

1. Identify using paint pen markers.
2. Markings shall identify load name and circuit number[s].
3. Place markings within six inches of the enclosure.

D. Type entries on directory cards completely and accurately. Equip each circuit breaker with an identification label (as recommended by manufacturer) showing circuit number served. Numbers on identification labels shall match respective circuit numbers on directory cards.

3.2 WARNING SIGNAGE conforming to NFPA 70E shall be installed on the equipment.

END OF SECTION 262416

SECTION 262726

WIRING DEVICES

PART 1 - GENERAL

1.1 ELECTRICAL GENERAL PROVISIONS

A. Provisions of Section 260100, Electrical General Provisions, shall be made an integral part of this section.

1.2 REFERENCES

A. National Electrical Manufacturers Association (NEMA) Publications.

1. WD 1 General Purpose Wiring Devices.
2. WD 3 Alternating-current General Use Snap Switches.
3. WD 5 Specific-purpose Wiring Devices.

B. Underwriters Laboratories (UL) Publications

1. UL 20 General-use Snap Switches.

PART 2 - PRODUCTS

2.1 GENERAL: Furnish and install wiring devices at all locations shown on the drawings, complete with all mounting devices and other appurtenances where required. All wiring devices shall be the product of a single manufacturer except as specifically stated otherwise. The catalog numbers of the devices herein specified are based on those of Bryant Electric Co. However, equal devices as manufactured by General Electric, Leviton, or Hubbell will be acceptable. If other than Bryant devices are to be used, a list of comparative catalog numbers shall be furnished to the Architect.

2.2 AC GENERAL USE SNAP SWITCHES for control of lighting circuits shall be specification grade, full size, heavy duty, composition enclosed, AC type, rated for 20 amperes at 120-277 volts, Nos. 4901-G, 4902-G, 4903-G and 4904-G. Standard, competitive, residential grade and interchangeable line switches will not be acceptable.

2.3 RECEPTACLES

A. Duplex convenience receptacles

1. Shall be heavy duty grade, back and side wired, U slotted ground, and be rated at 20 amperes, 125 volts.
2. Manufacturer and type: Byrant Cat. No. 5362.

B. Other receptacles

1. Receptacles requiring current, voltage, or configuration different from duplex convenience receptacles shall be as indicated on the drawings.
2. Provide other receptacles with quality, material, and workmanship at least equal to that specified for duplex convenience receptacles.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install A.C. general-use snap switches for switching lighting or other branch circuit loads as indicated on the drawings. Where adjacent to doors, coordinate with architectural drawings to ensure switches are installed on strike side of door.

1. Locate centerline at the height of 48” above finished floor.
2. Long dimension of switches shall be vertical unless otherwise indicated or required.

B. Install receptacles as indicated on the drawings with grounding pole up.

1. Locate centerline at the height of 18” above finished floor.
2. Long dimension of receptacles shall be vertical unless otherwise indicated or required.

END OF SECTION 262726

SECTION 262816

MOLDED CASE CIRCUIT BREAKERS (MCCB)

PART 1 - GENERAL

1.1 ELECTRICAL GENERAL PROVISIONS

A. Provisions of Section 260100 - Electrical General Provisions shall be made an integral part of this section.

1.2 REFERENCES

A. NEMA AB 1 1993 - (National Electrical Manufacturers Association) Molded Case Circuit Breakers and Molded Case Switches

B. UL 489 - (Underwriters Laboratories Inc.) Molded Case Circuit Breakers and Circuit Breaker Enclosures

1.3 QUALIFICATIONS

A. To be considered for approval, the manufacturer shall furnish products listed by Underwriters Laboratories Incorporated (UL), or testing firm acceptable to the authority having jurisdiction as suitable for application specified.

B. The overcurrent protection device manufacturing facility shall be Registered by Underwriters Laboratories Inc. to the International Organization for Standardization ISO 9000 Series Standards for quality.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Cutler-Hammer / Westinghouse

B. General Electric

C. Siemens

D. Square D

2.2 GENERAL

A. Circuit breakers shall be constructed using glass reinforced insulating material. Current carrying components shall be completely isolated from the handle and the accessory mounting area.

B. Circuit breakers shall have an over center, trip free, toggle operating mechanism which will provide quick-make, quick-break contact action. The circuit breaker shall have common tripping of all poles.

C. The circuit breaker handle shall reside in a tripped position between ON and OFF to provide local trip indication. Circuit breaker escutcheon shall be clearly marked ON and OFF in addition to providing International I/O markings.

D. The maximum ampere rating and UL or other certification standards with applicable voltage systems and corresponding interrupting ratings shall be clearly marked on face of circuit breaker.

E. All circuit breakers shall be UL Listed for reverse connection without restrictive line and load markings and be suitable for mounting in any position

F. Circuit breakers shall be fixed construction with factory installed mechanical lugs. All circuit breakers shall be UL Listed to accept field installable/removable lugs (except Quick Lag type). Lug body shall be bolted in place; snap in design is not acceptable. All lugs shall be UL Listed to accept solid (not larger than #8 AWG) and/or stranded copper and aluminum conductors. Quick Lag breakers shall be the bolt-on type.

G. All circuit breakers shall be capable of accepting bus connections.

H. Minimum short circuit rating

1. The minimum short circuit rating for a breaker shall be its stand alone rating.
2. Maximization of selective tripping is the intent of this design. Use of series rated equipment will not be approved.

2.3 THERMAL-MAGNETIC CIRCUIT BREAKERS

A. Circuit breakers shall have a permanent trip unit containing individual thermal and magnetic trip elements in each pole.

B. Thermal trip elements shall be factory preset and sealed. Circuit breakers shall be true rms sensing and thermally responsive to protect circuit conductor(s) in a 40° C ambient temperature.

C. Circuit breaker frame sizes above 100 amperes shall have a single magnetic trip adjustment located on the front of the circuit breaker (except type Q2, Q2H and Q2-H).

PART 3 - EXECUTION

3.1 INSTALLATION: Install MCCB's in panelboards as scheduled on the drawings.

END OF SECTION 262816

SECTION 265100

LIGHTING, INTERIOR

PART 1 - GENERAL

1.1 ELECTRICAL GENERAL PROVISIONS

A. Provisions of Section 260100 - Electrical General Provisions shall be made an integral part of this section.

1.2 LIGHTING FIXTURES SCHEDULE: The lighting fixture schedule lists an acceptable manufacturer and catalog numbers for each type of fixture. At Contractor's option, he may also offer an alternate based upon another manufacturer provided that the quality of the alternate is equal to or exceeds that specified.

1.3 SUBMITTALS: **S**ubmit photometrics, coefficient of utilization tables, efficiency, gage of fixture metal, lens material, thickness and style, and a copy of a test report by an independent testing laboratory.

PART 2 - PRODUCTS

2.1 GENERAL: Catalog numbers given in the fixture schedules are series numbers only and may not necessarily cover all necessary appurtenances. Lighting fixtures shall be as indicated on drawings with applicable design features specified in this section.

PART 3 - EXECUTION

3.1 GENERAL: Provide lamps, plates, rings, hangers, trim, and all accessories necessary for a complete and secure installation.

3.2 SUPPORT fixtures to maintain alignment and rigidity.

END OF SECTION 265100

SECTION 265201

EMERGENCY LIGHTING UNINTERRUPTIBLE POWER SUPPLY (ELUPS)

PART 1 - GENERAL

1.1 ELECTRICAL GENERAL PROVISIONS

A. Provisions of Section 260100 - Electrical General Provisions shall be made an integral part of this section.

1.2 DESCRIPTION

A. The ELUPS shall be provided in compliance with the drawings and other applicable sections of electrical specifications. The central console, batteries, and accessories shall be provided as specified in this section. All necessary accessories shall be included to provide a complete working system which automatically and instantaneously supplies AC sine-wave power to lighting circuits on loss of normal AC power.

PART 2 - PRODUCTS

2.1 Central console and batteries shall be in one to three code gage lockable steel cabinets with baked enamel finish. Batteries shall be suitably arranged and barriered to prevent possible leakage or fumes from damaging other system components.

2.2 Provide a central console with capacity indicated on the drawings. The console shall include but not be limited to:

A. Solid state fully automatic constant voltage, rectifier/charger to properly and completely recharge batteries within 12 hours following any 1-1/2 hour rated discharge. The rectifier/charger shall be completely self-protected and short-circuit proof. It shall have AC voltage compensation to maintain plus or minus 1 percent or less DC output for up to a plus or minus 10 percent AC input. The charger shall have surge protection.

B. Battery voltmeter and zero-center ammeter, each 3 percent minimum accuracy.

C. AC on light.

D. AC input overload protection and disconnect means.

E. Electrolyte level and charger supervisory and warning system.

F. Ground detection lights.

G. Low battery voltage disconnect, set at 80 percent.

H. Dc to AC sine-wave inverter.

I. Output short circuit and overload protection.

J. Throughput efficiency shall be 90 percent minimum.

K. Inverter efficiency shall be 80 percent minimum.

2.3 Batteries shall be sealed, lead calcium VLRA type with capacity to provide specified output for 1.5 Hours while maintaining at least 87.5 Percent or normal voltage. Batteries shall have a full replacement warranty for 5 years and a prorated warranty for the next 15 years for a total warranty and expected battery life of 20 years.

2.1 **MANUFACTURER** shall be Myers Power Products, Inc. or equal.

PART 3 - EXECUTION

3.1 Floor mount emergency lighting central console and batteries as shown on the drawings.

END OF SECTION 265201

SECTION 274116

THEATRE AV SYSTEM

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions, Special Conditions and Division-1 Specification sections, apply to work specified in this section.

1.2 RELATED WORK AND REQUIREMENTS

A. Basic Electrical Requirements

B. Raceways and Conduits

C. Wires and Cables

D. Outlet Boxes

E. Grounding

1.3 SCOPE OF WORK

A. This section requires the fabrication, furnishing, delivery, installation, testing of the sound and video systems and equalization of the sound system as indicated on the drawings and specified herein.

B. The sound contractor shall provide all materials, equipment, procedures, labor, tools, scaffolds, and incidentals necessary to the scope of work.

C. It is the intention of these specifications that the sound contractor provides a professional quality, complete and properly operating system in every respect and detail.

D. The installation contractor shall examine the plans in detail to familiarize him with the scope of the work.

E. The installation contractor shall assume full responsibility for a complete operating installation, in the required location, in accordance with the contract documents.

F. The contractor shall provide all necessary specialty equipment for the complete sound and video system installation as specified herein.

G. The contractor shall provide all necessary specialty equipment for the complete sound and video system as shown on the drawings.

H. Any errors, omissions, or ambiguities found in these documents do not relieve the Contractor of the responsibility of providing all items necessary for complete, safe, fully functional systems. Any errors, omissions, or ambiguities shall be brought to the attention of the Architect/Engineer of Record, Owner, and/or Theater Consultant for clarification.

I. The drawings and specification when taken together communicate the design intent of the system. The contractor is responsible for all engineering, procedures, drawings, equipment, material, means and methods, and contract administration necessary to fully and completely provide and install the system contemplated by these documents.

J. No changes will be allowed for any issue that could have or should have been known at the time of bid. This includes but is not limited to discontinued products.

K. The contractor is solely responsible for meeting all codes and regulations and for the complete code compliance of the finished system.

L. The contractor shall employ the most current best standard practices for all aspects of work.

M. The contractor acknowledges that the consultants' opinion is final.

N. It is this Contractor's responsibility to ensure that the system and all of the system components, fixtures, equipment, devices, wire, terminations, field assemblies (including custom assemblies), etc pass all required inspections by the local authority having jurisdiction.

O. DSP programming, system tuning and complete configuration of all components.

P. Crestron programming.

Q. Register all wireless mic frequencies in the "White Space" data base.

R. Coordinate fully with the electrical contractor.

1.4 WORK INCLUDED – BASE BID

A. Sound System

1. New main speakers / amps / amp rack
2. New assisted listening system.
3. All speaker rigging.
4. Rework the wiring in the existing sound rack
   a. This includes the addition of a new rack connection panel
   b. This includes the addition of two new mic input plates
   c. This includes the addition of two new monitor speaker plates
5. Other requirements.
   a. All RJ45 jacks and portable cables shall be color coded according to function.
   b. All RJ45 portable cable shall be heavy duty service type – TMB ProPlex or equal.
   c. All RJ45 jacks shall be Nuetrik EtherCON.
6. Power: Power sequencing equipment shall be based on Lowell Manufacturing – this work is included and required but not shown in the drawing package
   a. A power sequencer in the new amp rack – SCS8R-ASM
   b. Sequenced power outlets for all equipment in new amp rack
      1) Eight 20A single duplex boxes – RPC-1-20-MC
      2) One power strip – ACS-2010-RPC-HW
   c. Sequenced power outlets for all equipment in existing sound rack
      1) Two 20A single duplex boxes – RPC-1-20-MC
      2) Two power strip – ACS-2010-RPC-HW
   d. Remote power switch in rack mount panel in existing sound rack – RPSB-R

e. All internal rack power wiring terminating at an AV Contractor supplied junction box located in the top of each rack for the electrical contractor to “make up to”.

1.5 WORK INCLUDED – ADD ALTERNATE #3

A. Video System

1. New video system as shown on TS-104

1.6 WORK NOT INCLUDED

A. The following items of work, if required, are included in other sections and must be reviewed by the sound contractor for impact on this work:

1. Necessary conduit and raceway runs.
2. Front of house catwalks.

1.7 CONTRACTOR'S QUALIFICATIONS

A. Only qualified contractors shall be used.

B. The work of this section will be contracted to a single firm, referred to as the contractor.

C. The contractor shall be a systems contractor who regularly engages in the furnishing, installation and servicing of professional systems of similar nature, size, scope and complexity to that contemplated by this specification. The contractor shall have done so for a period of not less than five years preceding the bid date.

D. The contractor shall have maintained for the five years preceding the bid date, a suitably staffed and equipped service organization which has continuously offered maintenance and repair services for systems of the nature, size, scope and complexity to that contemplated by this specification.

E. All liens must be satisfied for at least five years.

F. The contractor shall be licensed and insured.

G. The contractor shall be a factory authorized dealer for all major system components:

1. Mixing console
2. Speakers
3. Digital signal processors
4. Amps
5. Control system

H. The contractor shall demonstrate to the satisfaction of the owner, through exhibits presented with his bid, that the sound contractor has a history to indicate the following:

1. Statement of current company capabilities and ownership.
2. Statement of company history. Include a breakdown by percentage of gross sales of all business activities the contractor is involved in for each of the last 5 years (e.g. system installation = 30%, box sales = 40%, equipment rentals = 20%, design and other professional services = 10%, etc).
3. Previous experience: Provide a list of four installations of the type and size contemplated by these specifications, currently in use as originally installed, in which a theatre / system consultant was involved, completed in the last 5 years and the following information regarding each installations:

a. Name and address of each installation facility.
b. Facility owner and telephone number.
c. Name, address, and phone number of a person regularly employed by the owner, who is familiar with the operation of the systems and who has no connection or business connections with the contractor except as the contractor shall fully disclose
d. Name, address, and phone number of the theatre / system consultant, along with the names of all the consultant's personal directly involved.
e. System shop drawing - These will be returned if the contractor provides a call tag or return postage.
f. Owner's manual drawing - These will be returned if the contractor provides a call tag or return postage.
g. System as-built drawings drawing - These will be returned if the contractor provides a call tag or return postage.
h. List of contractors personal involved with each persons responsibility on the project.
i. Name, address and phone number of the general contractor, along with the names of all key GC personal directly involved.
j. Name address and phone number of the electrical contractor, along with the names of all key EC personal directly involved.

4. Key Personnel: For each of the key personnel listed below; Include individual's name, title, and number of continuous years of service to contractor. Include a biography detailing industry experience, and role within organization (include only full-time/regular staff employees; not independent contractor, freelance, or temporary positions). List all industry certifications held, training courses attended, and continuing education credits, including dates of attendance. List recently completed projects, scope of project, and completion dates.
   a. Project Manager
   b. Senior Technician
   c. Service Manager
   d. Other Department Staff – Include size of staff, and experience of each staff member.
5. Replacement and Spare Parts Inventory – Provide detailed list of primary replacement parts, components, and spares typically held in inventory.
6. Test Equipment and Physical Plant – Include an inventory of all test facility equipment owned and used regularly by the Service Department. Provide description of physical plant and space utilization.
7. Statement of adequate plant, equipment, test facilities and inventory to pursue the work properly and perform in a timely fashion.
8. Copies of all business and professional licenses and insurance certificates
9. Without prejudice to other contractors desiring to be qualified, the following are considered qualified:

   Communications Specialists, Inc.
   7272 Jackson Avenue
   Mechanicsville., Virginia 23111
   (804) 559-4272

Contact: Ron Pusey

Stage Sound Inc
2240 Shenandoah Ave.
N.W. Roanoke, VA 24017
(540) 342-2040
Contact: Reid Henion

IES Commercial, Inc.
2708 Shenandoah Ave
Roanoke, VA 24017
(540) 342-5498
Contact: Bradley Harper

Draughon Brothers, Inc.
127 Maxwell Street
Fayetteville, NC 28301
(901) 484 7131
Contact: Kelvin Draughon

Brandywine Electronics Ltd
1010 Contractors Way
Bear, DE 19701
(302) 324-9992
Contact: Ron Casalvera

Philadelphia Sound Productions, Inc.
4525-27 Springfield Ave.
Philadelphia, PA 19143
(215) 382-2616

PART 2 – PRODUCTS

2.1 ALTERNATES

A. In no case will equipment or materials of lesser design or workmanship be acceptable. Only those materials and equipment listed in this specification will be considered unless prior approval is sought and received.

B. Substitutions: When a specific piece of equipment specified has been discontinued and/or replaced by a new model, substitution will be acceptable when:

1. Submission of complete data on the new model or substitute has been approved by the owner prior to equipment acquisition. Data shall include list pricing for specified and replacement equipment.
2. Substitute equipment or the replacement of rejected equipment shall be at the sole expense of the sound contractor.
3. After submittals have been approved there will be no cost to the owner for any required replacement equipment under any circumstances.

C. Should the contractor proposed and receive approval for the use of alternative wire and cable which requires additional conduit, the contractor will be solely responsible for the installation of such conduit.

2.2 GENERAL REQUIREMENTS

A. The major items of equipment shall be furnished in the quantity as on the drawings and the quantity as specified herein.

B. When documents list several acceptable manufacturers for a particular item of equipment, more than one of which is to be provided, the sound contractor shall supply all of those similar items of equipment from one manufacturer.

C. The sound contractor will provide necessary millwork, enclosures, baffles, grille cloth, wall plates, and any other item furnished under this contract not specifically noted otherwise herein or on the drawings in a manner and color as approved by the owner.

1. Any item of equipment or hardware that may not be specifically shown on the drawings or specified herein but required for proper sound system operation or installation shall be furnished and installed and be of the highest quality available.

D. UL Labels: All equipment, where applicable standards have been established, shall be listed by Underwriters' Laboratories, Inc., and shall bear UL label when delivered to the job.

E. If so required by the local authority having jurisdiction, anything not arriving at the job bearing a UL label shall be field inspected and label by a nationally recognized testing laboratory recognized and approved by the local authority having jurisdiction. This extends to field assemblies.

F. The performance of all equipment must meet the most recently published manufacture's data sheet

G. Provide all power supplies / portable power cables required.

H. Provide all software.

1. SymNet
2. All others as required

I. Provide all equipment in the quantities shown on the contract drawings:

1. All specialty back boxes listed on the electrical drawings.
   SCLGS & SCRGS = Hoffman / Pentair ASE8x8x4
   SCLF & SCRF = Hoffman / Pentair ASE6x6x4
   SCC= FSR SMWB-2G

J. Panels: All panels are made of 1/8" thick Aluminum plate, brushed anodized black and sealed. All controls and connectors will have engraved labels. The minimum allowable label size is 1/8"s. All labels will be back filled with white paint. All connectors are mounted with machine hardware. All panel layouts and labels must be submitted and approved prior to construction, the panels shown in the drawings are typical only.

K. Microphone Receptacles: The above general requirements for panels apply to the construction of Microphone Receptacles as well. See the contract drawings for quantity and type required.

L. Monitor Speaker Receptacles: The above general requirements for panels apply to the construction of Monitor Speaker Receptacles as well. See the contract drawings for quantity and type required.

M. Intercom Connection Receptacles: The above general requirements for panels apply to the construction of Intercom Connection Receptacles as well. See contract drawings for quantities and types required.

N. Custom panels: See drawings for required components.

O. System Wire: All wiring installed in a conduit which is located in the slab must be rated for wet locations.

1. 10 A.W.G. for speaker lines enclosed in conduit, racks, or speaker enclosures. Use for all speaker runs except 70 volt systems. 10 A.W.G. THWN.
2. 16 A.W.G. twisted pair for RMS control system and for 70 volt audio wire for use in conduit, racks, or speaker enclosures. West Penn Wire AQC 225
3. 22 A.W.G. shield twisted pair for all mic, line or D.C. control lines enclosed in conduit or racks. Belden 5500F1 or West Penn Wire AQC 291
4. 18 A.W.G. Shielded twisted pair with 18 A.W.G. drain wire for all intercom lines enclosed in conduit or racks. Belden 5300F1 or West Penn Wire AQC 293. An additional 12 A.W.G. THWN will be required if speaker stations are used. This additional wire shall be used in parallel with the drain wire of the shielded twisted pair cable.
5. 24 A.W.G. shield twisted pair for all AES/EBU digital audio lines enclosed in conduit or racks. West Penn DA2401.
6. Coax Antenna Lines. As called for by equipment manufacture.
7. UTP Category 5 network cable. Four twisted pair of 24 A.W.G. wire with an outer diameter suitable for termination by standard type RJ-45 connectors. Use for all Category 5 cable run within a conduit or raceway. Belden 7934A.
8. Category 5 service cable. Use for all Category 5 cable NOT run within a conduit or raceway. TMB Associates ProPlex Ethernet cable.
9. RG6 coax for all video cable (including HD-SDI) West Penn Wire AQC806
10. RG 11 coax for wireless receiver antennas Liberty RG11-DB-CCTV
11. RG59 coax as required West Penn Wire AQC 815
12. Crestron cable as called for by manufacture. Wet location rated as necessary by installation location.

P. PORTABLE AND OTHER EQUIPMENT: Provide the following equipment that is not shown on the contract drawings:

1. Assisted Listening System

PART 3 – EXECUTION

3.1 SUBMITTALS:

A. Submittals: The sound contractor, within thirty days of the bid award and prior to beginning work, shall submit all of the following at the same time to the owner for approval:

B. Drawings: Complete shop drawings details and complete on all phases of installation including a minimum of:

1. Device location plan drawing(s)
2. System wiring diagram
   a. Show Dante ID and other setup info
   b. Show wireless frequency coordination
   c. Show IP address management
3. Make and model of all equipment
4. All connection points on each piece of equipment
5. All wire types
6. All connector types
7. All cable labels
8. Rack elevations
9. Details of all connection plates and custom panels
10. Rack and equipment labels
11. Mounting and rigging details for all equipment
12. Drawing showing the projector, the screen, the throw distance and all lens calculations in plan, elevation and section.

C. Mountings and Attachments: Prior to equipment installation, the sound contractor will submit to the owner detailed scale drawings of all proposed enclosures and speaker mounting or rigging weighing more than ten pounds. All mountings and attachments must be approved and stamped by an engineer licensed in Florida prior to submittal and the beginning of the installation.

D. Materials and Equipment: The sound contractor will submit to the owner a complete list of all materials and equipment to be furnished including catalog cuts for all equipment items. These must contain full information on dimensions, construction, applications, etc. to permit proper evaluation. In addition, they must be properly identified as to their intended use and any options or variations must be clearly marked. The contractor is to confirm equipment availability at time of submittal. It is assumed that all equipment submitted on is and will be available.

E. Test Equipment: The sound contractor will submit to the owner a list of test equipment to be used to test, equalize and demonstrate the final installation.

F. Schedule: Prior to the commencement of the installation work, the sound contractor shall submit for approval, to the owner, an outline of a proposed commencement and completion schedule and project requirements.

G. Variations: Any deviation from what is specified here and or shown on the system drawings must be “starred” and noted in ¼” high letters on the shop drawings and highlighted in the submittal data.

H. Approval of shop drawings and materials does not relieve the Contractor of any responsibilities.

3.2 COORDINATION WITH OTHER WORK:

A. The sound contractor shall specifically coordinate the placement and sizes of conduit relating to this work and shall specifically review and approve the conduit rough-in in time to advise all parties of needed changes, omissions, etc. The sound contractor shall report this successful coordination in writing to the owner's representative. Failing this, the following will be enforced:

1. The sound contractor shall provide and install any additional conduits required for the hookup, proper location and proper isolation of the various cable / signal types and equipment in the systems. The sound contractor must coordinate his conduit installation with those installed by the electrical contractor. All conduits shall be sized to their intended fill plus fifty percent.
2. The contractor shall at all times coordinate his work with the other trades to ensure smooth progress of work and satisfactory final results.

3.3 INSTALLATION:

A. Comply will all recognized industry standards, professional practices and references.

B. Personnel: A single, competent, technically qualified foreman will oversee the entire job from start to finish. This foreman must:

1. Be present on the job site during all phases of installation and testing.
2. Be authorized to receive instructions from the Architects or their representatives.

C. Only experienced sound installers shall be employed on this job.

D. The contractor shall keep the job adequately staffed at all times.

E. All job documents pertaining to the installation of this system will be accessible to all workers throughout the installation process.

F. Installation practices shall be in accordance with OSHA Safety and Health Standards and all local codes.

G. The sound contractor shall not commence the installation of equipment and devices, other than the pulling of cable, until all areas are clean, painted and finished to a point that they are completely dust, dirt, lint, fiber and airborne particle free. The air conditioning system must be operating to its design level and be able to keep all areas with sound equipment stable.

H. General Workmanship:

1. The installation of all work shall be neat.
2. All boxes, equipment, etc shall be plumb and square.
3. The installation shall conform to the plans and spec.
4. Equipment racks shall be assembled, wired and tested in the contractors shop prior to delivery to the job site.

I. Wiring:

1. If enclosed in conduit run only similar signal levels in a single conduit.
2. All pulls to be made be hand, care will be taken not to nick cable jackets, and any nicked or damaged cable will be replaced.
3. A pull string will be left in all conduits after wire is installed.
4. NO SPLICES WHATSOEVER IN CONDUIT!
5. If not enclosed in conduit neatly group cables into bundles and secure out of harms way.
6. Separate cable grouping by signal level. Mic and A.C. power shall be not less that 18" all other levels by not less than 6".
7. Include spare cables with all field runs. Quantity to be 10% or 1 which ever is greater unless otherwise specified.

J. Terminations:

1. All cables shall be permanently labeled at every termination.
2. Service loops of not less than 6" will be present at all terminations to equipment.
3. Where terminal blocks or barrier strips are used only uninsulated fork terminals with a brazed seam, sized according to wire and stud sizes, crimped with notch across from the seam will be approved.
4. Use barrier strips on equipment where provided.
5. Where shielded cable is in use leave shield drain wire the same length as the circuit conductor(s), sleeve shield drain wire in green pvc tubing. Cap where the cable jacket was removed with heat shrink. Where the shield drain wire is to be lifted follow the above and fold back over cable jacket. Then cap end with heatshrink. Do not use a single piece of heatshrink for this use two smaller ones.
6. All soldering will be clean and neat and not exhibit evidence of a " cold" joint, were necessary heat sinks will be used. Use only rosin core "electronic type " solder.
7. Wire nuts will be allowed only for field connections of 70 volt speaker lines and priority attenuation control lines, and then only when the proper size is used.

K. Polarity:

1. The " high " side will be connected to pin 2 on XLR connectors, to tip on 1/4" connectors and to the pin on phono connectors.
2. The " low " side will be connected to pin 3 on XLR connectors, to ring on 1/4" balanced connectors and to case on phono connectors.
3. Microphones will be wired so that an acoustic compression at the diaphragm produces a positive going signal on pin 2 with respect to pin 3.
4. Speakers will be wired so that when a positive going signal is applied to the + or red terminal an acoustic compression is produced.
5. The system will be wired to maintain absolute polarity though all system components to insure that a positive signal on pin 2 or tip produces a positive signal at the + or red speaker terminal.

L. Shield Grounding:

1. Do not tie pin 1 to case of XLR connectors anywhere.
2. Microphone shield drain wires will be grounded only at mixer inputs. Where microphone lines and mixer inputs run though a patchbay, connect shield drain wire to sleeve of patchbay connector and only to this point.
3. Line level lines will have shield drain wire lifted from ground at outputs and connected to ground at inputs.
4. The intent here is to not make ground loops, should any situation arise which would form a ground loop, please inform the owner for direction.

M. Mountings and Attachments:

1. Any and all structural, mounting, or rigging details are shown on the drawings for concept only.
2. The detail drawings and calculations of all proposed mounting or rigging of any equipment weighing more than ten pounds will be approved and stamped by a P.E. who is licensed in Florida.
3. Each cluster element is to be individually adjustable.

4. Provide for an adjustment range of +/- 10 degrees from the information shown in the contract documents.
5. In the absence of specific direction otherwise, standard rigging practices shall be followed.

N. Labels:

1. Cable Labels: All cables shall be labeled at all termination points. The label shall not be hand written. Clear heat shrink shall cover the label.
2. Equipment Labels. All equipment shall be labeled front and rear. Labels shall functionally describe the use of each piece of equipment. On equipment having multiple channels, each channel shall be labeled. Additionally the equipment label will call out equipment designation which will correspond with the designations shown on the approved contractor's one-line diagram. Labels shall be engraved lanacoid, white letters on black background, with a minimum letter size of 3/16". Approved patchbay labeling may vary from this.

O. Power Sequencing. The system shall turn on and off, in proper order, on circuit at a time, when the power switch is pressed. The power light shall be solid on when all circuits are on, and shall flash during sequencing.

P. The system may not be used prior to checkout.

3.4 INSPECTION AND TESTING:

A. During the installation of the equipment the sound contractor shall arrange for access as necessary for inspection of equipment by the owner's and/or architect's representatives.

B. Provide a safe means of accessing all system components for all visits.

C. Equipment Pretesting: All racks are to be built and wired in contractors shop and tested prior to delivery to site. All other equipment is to be tested prior to delivery and installation. A written test report will be submitted to the owner.

D. Test and certify all CATx cable runs and present testing report.

E. Final Inspection:

1. The final inspection will confirm that the systems, as installed, meets the requirements of this spec, the contract documents, and the approved contractor's shop drawing and submittals.
2. The contractor will inform the owner in writing of the system's completion. The contractor will then request final inspection by the consultant, and carry out the necessary coordination. This coordination includes:
   a. Giving at least fourteen days notice to the consultant prior to the final inspection.
   b. Arranging for the contractor's and consultant's exclusive use of the space.
   c. Arranging for a HVAC technician to be available to turn the AC system on and off as required.
   d. Arranging for a lighting technician to be available to control the stage lighting as required.
   e. The contractor's job foreman and one additional worker familiar with the job will be present during all check out, testing and tuning.

3. Contractor will complete the following tasks prior to consultant's arrival:
   a. Unpack and assemble all portable equipment.
   b. Place all portable equipment in one location.
   c. If anything has been turned over to the owner have the signed Letters of Transmittal on site.
   d. Complete all required paperwork (pre-testing reports, letters indicating successful coordination of the installation, etc.).
   e. Remove all security covers.
4. Contractor will provide all necessary software, cables, and interfaces to facilitate the setting of computer, remote controlled, or DSP based equipment.
5. Contractor will either: 1) relocate all system equalizers to a tech area in the house for the duration of system tuning or 2) for remotely controllable devices, locate the control position in a tech area in the house for the duration of system testing. In ether case a tech area in the house will be required with a minimum of a 4' x 6' folding table, intercom communications to the rack and console locations, and AC power.
6. Contractor will provide the following test equipment for use during tuning and acceptance testing:
   a. Sennheiser ZP-3 impedance bridge.
   b. Low distortion sine wave oscillator with variable sweep (start frequency, stop frequency, and sweep rate).
   c. Distortion meter.
   d. Oscilloscope dual channel, 100Mhz, .001v/div vertical amp.
   e. Noise generator that will provide pink, white, or bandwidth limited pink noise.
   f. Portable 1/3 octave real time audio spectrum analyzer.
   g. Precision sound level meter with filter set.
   h. Polarity checker.
   i. Precision true R.M.S. reading A.C. millivolt meter with dB scale.
   j. Meyer Sound SIM 3 complete with all necessary accessories and at least 3 matching measurement microphones.
   k. Playback and recording media for testing all supplied source equipment.
7. Contractor will provide safe means to access all system components during the entire commissioning process.
8. Contractor shall provide personal and equipment to make adjustments to the speaker cluster(s), as well as to correct problems, for the entire inspection and testing period.

F. The Theatre Consultant or his representative will conduct all final system tests and equalization adjustments in order to determine final acceptance.

G. In no event shall the theatrical sound systems installation be submitted for final approval or acceptance until any and all elements of the facility that may have a bearing on the system performance, including but not limited to doors, windows, HVAC, carpeting, furniture, wall coverings, interior design elements, lighting and lighting control systems have been completed and are operable. All elements that may effect sound systems operation or performance shall be "on" and operating during adjustments. The sound contractor will be responsible for coordinating the requirements of this paragraph with other work on the project.

H. Should more than two trips be required to complete the systems testing, systems tuning, and clearing punch list items, the contractor will be charged for any additional visits. These charges will include:

a. A minimum of two people at a rate of $1250 per day per person.
b. Travel expense to and from the job site.
c. These charges will be paid to the consultant, in advance of the consultant's arrival on the job site.

3.5 MANUALS:

A. Prepare four identical copies of owner's manuals. The owner is to receive two, the consultant receives one and the contractor retains one. Before distribution of manuals submit one copy to consultant for approval. Each manual is to contain the following:

1. System one line drawing including all labeling and changes (" as builts ").
2. Owners manual for each piece of equipment.
3. Contractors service phone number in a conspicuous place.
4. All test reports.

B. Provide all information as PDF files on CDs to be included with each manual.

C. Load all manual data as PDF files onto the iPad and system laptop.

D. Load all available help files on the laptop.

3.6 INSTRUCTION: THE FOLLOWING IS TO BE CARRIED OUT WITHIN TWO MONTHS OF SYSTEM ACCEPTANCE:

A. Provide a total of 12 hours of instruction, on a maximum of two occasions. This is to be time on site, travel time is not to be included within the allotted time.

B. Provide operational assistance for the first usage of the system. This is to be on the owners time schedule but, not to exceed 8 hours.

3.7 WARRANTY

A. Contractor will warrant the system to be free from defects in materials and workmanship for a period of one year from the date of acceptance, or first beneficial use, which ever comes first.

B. Acts of god and owner abuse, or neglect are not covered.

C. During the warranty period the contractor will respond to and correct any call for service within one day of the call. Loaner equipment will be provided if necessary

END OF SECTION 274116