

SECTION 001000

NOTICE TO BIDDERS - INVITATION TO BID No. 124.23.B4

**THEATRICAL HOUSE LIGHTING AND CONTROLS FOR
AUDITORIUM AT WILD LAKE HIGH SCHOOL**

THE HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 CLARKSVILLE PIKE
ELLCOTT CITY, MD 21042-6198

The Howard County Public School System (HCPSS) requests your bid for the Theatrical House Lighting and Controls for the Auditorium at Wilde Lake High School as specified in the bid documents.

Bids Due: All bids shall be submitted electronically via email in their entirety (all pages) **PDF format** and received no later than **June 7, 2023 at 10:00 A.M.** to BidsandProposals@hcpss.org. Bids that contain either more than one file, or files larger than 75MB, shall be inserted into an e-folder and compressed in a .zip file. To ensure delivery, if the file size cumulatively exceeds 75MB it is recommended that bidders submit separate emails labeled No.1, No.2, etc.

Email subject lines, folder names and File names shall include: The Bid title “Theatrical House Lighting and Controls for the Auditorium at Wilde Lake High School”, the “Bid Number #124.23.B4”, you’re Company Name” In the body of the email please include Bidders contact persons e-mail and cell phone number for contacting purposes if/when necessary.

Please note that the Bids and Proposal e-mail address should not be used for any other purpose other than to forward your proposals on the day that the bids are due. This is not to be used for questions or other communication purposes. Do not copy the Purchasing Specialist with your proposals. Proposals must only be sent to the Bids and Proposals e-mail address.

Do not send bids via hand delivery, postal service or carrier since they will not be opened or considered for award. All proposal must be submitted electronically through the Bids and Proposal e-mail address above.

All Questions shall be directed, in writing, no later than **10:00 A.M., May 26, 2023** to the Purchasing Specialist, Robert Gill, robert_gill@hcpss.org. The Howard County Public School System is under no obligation to respond to any questions that are received after the cutoff date and time. Only answers provided via an addendum issued by the HCPSS will be binding. Under no circumstances are bidders, including third party vendors or their staff, to contact any other HCPSS Staff, employees or any related constituency for purposes associated with this solicitation, including but not limited to, obtaining or providing information. **Bidders failing to comply with this requirement may be disqualified.**

The Pre-bid Meeting ; None

Site Visit: to visit the site at Wilde Lake High School, 5460 Trumpeter Rd, Columbia MD, 21044, please contact Mr. Tony Bonomo in advance to schedule a time for him to escort you through the building. Do not just show up at the school without contacting Mr. Bonomo, since you will not be allowed on the school property.

Addenda: It is the potential bidder’s sole responsibility to regularly visit the HCPSS Purchasing website www.hcpss.org/about-us/purchasing/current-bids/ to download and acknowledge receipt of all Addenda. It is highly recommended that bidders ascertain if they have received all the addenda issued prior to submitting their proposal. Failure of any bidder to acknowledge any such Addenda or interpretation may not relieve such bidder from obligation under his/her proposal as submitted.

Minority Business Enterprise

Maryland Department of Transportation (MDOT) Certified Minority Business Enterprises are encouraged to respond to this solicitation notice.

The Contractor or supplier who provides materials, supplies, equipment and/or services for this construction project shall attempt to achieve the MBE goal for each contract package as follows:

Contract Package	MBE Goal	MBE Sub Goals	
1A-General	19%	African-American 7%	Woman Owned 10%

All Prime Contractors, including certified MBE firms, when submitting their Bids or Proposals as General or Prime Contractors are required to attempt to achieve this goal from certified MBE firms.

In accordance with the Governor's Office of Minority Affairs, a MBE Prime contractor may self-perform up to 50% of the overall MBE contract goal and up to 100% of any one MBE contract subgoal, provided that the certified MBE prime contractor is properly identified on the MBE participation schedule and the firm is NAICS code-certified to do the work.

The bidder or offeror is required to submit with its bid or proposal a completed Attachment A - Certified MBE Utilization and Fair Solicitation Affidavit and Attachment B - MBE Participation Schedule as described in these solicitation documents. Each bid or offer submitted, including a submittal from a certified MBE in response to this solicitation, shall be accompanied by a completed Attachment A - Certified MBE Utilization and Fair Solicitation Affidavit and a completed Attachment B - MBE Participation Schedule. These two attachments must be accurate and consistent with each other. Attachment A and Attachment B shall be submitted with the sealed bid price at the place, date, and time specified in the solicitation document. The bidder or offeror must check one of the three boxes on Attachment A, which relates to the level of MBE participation achieved for the project.

The contractor or supplier who provides materials, supplies, equipment and/or services for this construction project shall attempt to achieve the specific overall MBE goals listed above that have been established for this project. All prime contractors, including certified MBE firms, when submitting bids or proposals as general or prime contractors are required to attempt to achieve this goal from MDOT certified MBE firms. Bidders are encouraged to review Section 000730 of the bidding documents for the full Minority Business Enterprise Procedures.

The bidder must check one of the three boxes on Attachment A, which relates to the level of MBE participation achieved for the project. The bidder's signature indicates that in the event that they did not meet the MBE goal or sub-goals, if applicable, that: 1) They are therefore requesting a waiver, and 2) Documentation of their good faith efforts will be provided to the school system staff within 10 days of being notified that they are the apparent low bidder.

Instructions pertaining to the Bid Bond, Surety Checks, Performance and Materials Payment Bond requirements are contained in the bid documents.

The conditions contained in this Notice to Bidders, Invitation to Bid, are a part of the bid documents.

The Board reserves the right to waive any informality in, or to reject any or all bids.

Contractors are required to register on eMaryland Marketplace Advantage at [eMaryland Marketplace Advantage \(eMMA\)](#) within five days following notice of award. Maryland law requires local and state agencies to post award notices on eMaryland Marketplace Advantage. This cannot be done without the contractor's self-registration in the system. Registration is free. Failure to comply with this requirement may be considered grounds for default. It is recommended that any interested bidder register with eMaryland Marketplace Advantage regardless of the award outcome for this procurement as it is a valuable resource for bid notification for municipalities throughout Maryland.

Please return the attached NO BID REPLY FORM if your firm does not bid this project. This form may be faxed to (410) 313-6789.

Robert B. Gill, CPPO, CPPB
Purchasing Specialist

END OF SECTION



Office of Purchasing
10910 Clarksville Pike
Ellicott City, Maryland 21042-6198
(410) 313-4584, fax (410) 313-6789

THE HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Clarksville Pike
Ellicott City, Maryland 21042

NO BID REPLY FORM

Sealed Bid for: **Theatrical House Lighting and Controls for the Auditorium at Wilde Lake High School**

Bid Number: **Bid #124.23.B4**

Bidder: _____

To assist us in obtaining good competition on our request for bids, we ask that each firm that has received an invitation, but does not wish to bid, state their reason(s) below.

Unfortunately, we must offer a "No Bid" at this time because:

- _____ 1. We do not wish to bid under the terms and conditions of the Bid document. Our objections are:

- _____ 2. We do not feel we can be competitive.
- _____ 3. We cannot submit a bid because of the marketing or franchising policies of the manufacturing company.
- _____ 4. We do not wish to sell to The Howard County Public School System. Our objections are:

- _____ 5. We do not sell the item(s)/service(s) requested in the specific specifications.
- _____ 6. Other: _____

**THEATRICAL HOUSE LIGHTING AND CONTROLS FOR
THE AUDITORIUM AT WILDE LAKE HIGH SCHOOL
BID # 124.23.B4**

**HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Clarksville Pike
Ellicott City, Maryland 21042**

ISSUE DATE:	<u>May 22, 2023</u>
SEALED BID FOR:	<u>Theatrical House Lighting and Controls for the Auditorium at Wilde Lake High School</u>
BID NUMBER:	<u>Bid # 124.23.B4</u>
PRE-BID DATE:	<u>None</u>
PRE-BID TIME:	<u>None</u>
PRE-BID LOCATION:	<u>N/A</u>
SITE VISIT	<u>Please Contact Mr. Tony Bonomo at 410-313-7084 or tony_bonomo@hcpss.org to arrange a time in advance.</u>
QUESTIONS DUE	<u>May 26, 2023 at 10:00 AM,</u> <u>in writing Submit To: Robert Gill at robert_gill@hcpss.org</u> <u>** As necessary an addendum will be issued after the due</u> <u>date above to address any questions.</u>
BID DUE DATE/TIME:	<u>June 7, 2023 at 10:00 AM – See Notice to Bidders for Electronic Submission Instructions</u>
BUYER:	<u>Mr. Robert Gill</u> <u>email: Robert_Gill@hcpss.org</u>

INDEX OF SOLICITATION DOCUMENTS SECTIONS

Theatrical House Lighting and Controls for Auditorium at Wild Lake High School

BID #124.23.B4

DIVISION 00 – INSTRUCTIONS AND CONDITIONS

001000	Notice to Bidders
001001	No Bid Reply Form
001002	Key Bid Process Dates Cover Sheet
002000	AIA Document A701-1997, Instructions to Bidders
003000	Form of Proposal - Including; Experience / Reference Form Profile of Company Form Key Personnel Form – Staffing Plan (Installer) MBE, Attachment A – (Non-Wage Scale) MBE, Attachment B – (Non-Wage Scale)
000310	AIA Document A310 – 2010, Bid Bond
000600	AIA Document A101-2017, Standard Form of Agreement between Owner and Contractor.
000601	Insurance Requirements
000610	AIA Document A312 – 2010, Performance Bond
000620	AIA Document A312 – 2010, Labor and Material Payment Bond
000700	AIA Document A201-2007, General Conditions of the Contract for Construction.
000720	HCPSS Supplemental General Terms and Conditions.
000730	Minority Business Enterprise (MBE) Requirements Attachment A Attachment B Attachment C Attachment D Attachment E Attachment F Attachment G Attachment I
000910	Exhibit C – Contractor Performance/ Evaluation Scorecard

GENERAL REQUIREMENTS, SPECIFICATIONS, AND DRAWINGS (See the Table of Contents under Division 01 - 29)

AIA® Document A701™ – 2018

Instructions to Bidders

for the following Project:
(Name, location, and detailed description)

THE OWNER:
(Name, legal status, address, and other information)

THE ARCHITECT:
(Name, legal status, address, and other information)

TABLE OF ARTICLES

1	DEFINITIONS
2	BIDDER'S REPRESENTATIONS
3	BIDDING DOCUMENTS
4	BIDDING PROCEDURES
5	CONSIDERATION OF BIDS
6	POST-BID INFORMATION
7	PERFORMANCE BOND AND PAYMENT BOND
8	ENUMERATION OF THE PROPOSED CONTRACT DOCUMENTS

ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

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

FEDERAL, STATE, AND LOCAL LAWS MAY IMPOSE REQUIREMENTS ON PUBLIC PROCUREMENT CONTRACTS. CONSULT LOCAL AUTHORITIES OR AN ATTORNEY TO VERIFY REQUIREMENTS APPLICABLE TO THIS PROCUREMENT BEFORE COMPLETING THIS FORM.

It is intended that AIA Document G612™–2017, Owner's Instructions to the Architect, Parts A and B will be completed prior to using this document.

ARTICLE 1 DEFINITIONS

§ 1.1 Bidding Documents include the Bidding Requirements and the proposed Contract Documents. The Bidding Requirements consist of the Advertisement or Invitation to Bid, Instructions to Bidders, Supplementary Instructions to Bidders, the bid form, and other sample bidding and contract forms. The proposed Contract Documents consist of the form of Agreement between the Owner and Contractor, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications and all Addenda issued prior to execution of the Contract.

§ 1.2 Definitions set forth in the General Conditions of the Contract for Construction, AIA Document A201-2007 Edition and as modified by Howard county Public School System or other Contract Documents as applicable to the Bidding Documents.

§ 1.3 Addenda are written or graphic instruments issued by the Architect prior to the execution of the Contract which modify or interpret the Bidding Documents by additions, deletions, clarifications or corrections.

§ 1.4 A Bid is a complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.

§ 1.5 The Base Bid is the sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents as the base, to which Work may be added or from which Work may be deleted for sums stated in Alternate Bids.

§ 1.6 An Alternate Bid (or Alternate) is an amount stated in the Bid to be added to or deducted from the amount of the Base Bid if the corresponding change in the Work, as described in the Bidding Documents, is accepted.

§ 1.7 A Unit Price is an amount stated in the Bid as a price per unit of measurement for materials, equipment or services or a portion of the Work as described in the Bidding Documents.

§ 1.8 A Bidder is a person or entity who submits a Bid and who meets the requirements set forth in the Bidding Documents.

§ 1.9 A Sub-bidder is a person or entity who submits a bid to a Bidder for materials, equipment or labor for a portion of the Work.

ARTICLE 2 BIDDER'S REPRESENTATIONS

§ 2.1 The Bidder by making a Bid represents that:

§ 2.1.1 The Bidder has read and understands the Bidding Documents or Contract Documents, to the extent that such documentation relates to the Work for which the Bid is submitted, and for other portions of the Project, if any, being bid concurrently or presently under construction.

§ 2.1.2 The Bid is made in compliance with the Bidding Documents.

§ 2.1.3 The Bidder has visited the site, become familiar with local conditions under which the Work is to be performed and has correlated the Bidder's personal observations with the requirements of the proposed Contract Documents.

§ 2.1.4 The Bid is based upon the materials, equipment and systems required by the Bidding Documents without exception.

ARTICLE 3 BIDDING DOCUMENTS

§ 3.1 COPIES

§ 3.1.1 Bidders may obtain complete sets of the Bidding Documents from the issuing office designated in the Advertisement or Invitation to Bid in the number and for the deposit sum, if any, stated therein.

(Paragraphs deleted)

The deposit will be refunded to Bidders who submit a bona fide Bid and return the Bidding Documents in good condition within ten days after receipt of Bids. The cost of replacement of missing or damaged documents will be deducted from the deposit. A Bidder receiving a Contract award may retain the Bidding Documents and the Bidder's deposit will be refunded.

§ 3.1.2 Bidding Documents will not be issued directly to Sub-bidders unless specifically offered in the Advertisement or Invitation to Bid, or in supplementary instructions to bidders.

§ 3.1.3 Bidders shall use complete sets of Bidding Documents in preparing Bids; neither the Owner nor Architect assumes responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

§ 3.1.4 The Owner and Architect may make copies of the Bidding Documents available on the above terms for the purpose of obtaining Bids on the Work. No license or grant of use is conferred by issuance of copies of the Bidding Documents.

(Paragraph deleted)

§ 3.2 INTERPRETATION OR CORRECTION OF BIDDING DOCUMENTS

§ 3.2.1 The Bidder shall carefully study and compare the Bidding Documents with each other, and with other work being bid concurrently or presently under construction to the extent that it relates to the Work for which the Bid is submitted, shall examine the site and local conditions, and shall at once report to the Architect errors, inconsistencies or ambiguities discovered.

§ 3.2.2 Bidders and Sub-bidders requiring clarification or interpretation of the Bidding Documents shall make a written request which shall reach the Construction Manager and Architect at least seven business days prior to the date for receipt of Bids.

(Paragraphs deleted)

§ 3.2.3 Interpretations, corrections and changes of the Bidding Documents will be made by Addendum. Interpretations, corrections and changes of the Bidding Documents made in any other manner will not be binding, and Bidders shall not rely upon them.

§ 3.3 SUBSTITUTIONS

(Paragraph deleted)

§ 3.3.1 Bids shall be based upon the materials, systems and equipment required by the bidding documents without exception. Proposed substitute products or manufacturers shall be submitted in accordance with the following provisions:

- a. No substitutions will be considered prior to receipt of bids. The Contract award will be made solely on the basis of Base bid, Alternate Bids with regard to proposed substitutions and deducts when requested.
- b. Bidders may propose substitutions for the materials, systems and equipment specified or whom by listing them in the space provided on the Form of Proposal, along with any stipulated cost adjustment (add. deduct or no change) in the Base Bid or Alternate bids. Proposed substitutions may be accepted with the award of the contract or later by the Owner.
- c. Provide all necessary backup data for proposed substitutions at time of bid for review by Owner.
- d. The Architect will evaluate all substitutions based on compliance with the environmental goals stated in the specifications. All proposed substitutions shall document and demonstrate meeting or exceeding LEED certification requirements through product data, MSDS sheets and other supporting literature that highlight conformance. Any substitution that does not have this information highlighted will be rejected.

§ 3.3.2 It is the responsibility of the bidder to provide documentation with the bid at the date and time set forth for submission. The burden of proof that proposed substitutes are in fact equal or better falls on the bidder and proof must be to the satisfaction of HCPSS. The HCPSS shall be the sole authority as to whether proposed substitute items meet specifications or are an approved equal. The HCPSS decision of approving or disapproving of a proposed equal shall be final.

(Paragraphs deleted)

§ 3.3.3 No substitutions will be considered after the Contract award unless specifically provided for in the Contract Documents.

(Paragraphs deleted)

§ 3.4 ADDENDA

§ 3.4.1 Addenda will be

(Paragraphs deleted)

posted on the school system website.

§ 3.4.2 Copies of Addenda will be made available for inspection wherever Bidding Documents are on file for that purpose.

§ 3.4.3 Addenda will be issued no later than two days prior to the date for receipt of Bids except an Addendum withdrawing the request for Bids or one which includes postponement of the date for receipt of Bids.

§ 3.4.4 Each Bidder shall ascertain prior to submitting a Bid that the Bidder has received all Addenda issued, and the Bidder shall acknowledge their receipt in the Bid.

ARTICLE 4 BIDDING PROCEDURES

§ 4.1 PREPARATION OF BIDS

§ 4.1.1 Bids shall be submitted on the forms included with the Bidding Documents. Submit Form of Proposal (Bids) in triplicate.

§ 4.1.2 All blanks on the bid form shall be legibly executed in a non-erasable medium. If blanks do not apply insert " O " in spaces.

§ 4.1.3 Sums shall be expressed in both words and figures. In case of discrepancy, the amount written in words shall govern.

§ 4.1.4 All requested Alternates shall be bid. If no change in the Base Bid is required, enter "No Change."

§ 4.1.5 Each copy of the Bid shall state the legal name of the Bidder and the nature of legal form of the Bidder. The Bidder shall provide evidence of legal authority to perform within the jurisdiction of the Work. Each copy shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further give the state of incorporation and have the corporate seal affixed. A Bid submitted by an agent shall have a current power of attorney attached certifying the agent's authority to bind the Bidder.

(Paragraphs deleted)

§4.1.6 All addenda shall be acknowledged on the Form of Proposal

§ 4.2 BID SECURITY

§ 4.2.1 Each Bid shall be accompanied by a bid security in the form and amount required if so stipulated in the Instructions to Bidders. The Bidder pledges to enter into a Contract with the Owner on the terms stated in the Bid and will, if required, furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds if required, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as a penalty.

4.2.2 Bonds shall be written by a bonding company that must be licensed with Maryland Insurance Administration to do business in the state of Maryland and otherwise acceptable to the Howard County Public School System. The Contractor shall use Bond Form provided by the Owner AIA 310 Bid Bond, in order to satisfy the Bond requirements referenced in this Article and the attorney-in-fact who executes the bond on behalf of the surety shall affix to the bond a certified and current copy of the power of attorney in an amount not less than required.

4.2.3 The bonding company furnishing the Bid Bond shall provide upon request to the Purchasing Department, the following statement, signed by an authorized representative for the bonding company: **As surety for (Name of**

Contractor), (Name of Bonding Company), hereby agrees to furnish the 100% Performance, Labor and Materials Bonds, as required by the specifications for the (Name of Project), on behalf of the Contractor, in the event that such firm be the successful bidder for this project. Failure to provide this statement may be cause to reject submitted bid.

§ 4.2.4 Bid Bond shall be in the amount of 5% of the Base Bid.

(Paragraph deleted)

§ 4.2.5 The apparent low bidder, upon notification, shall provide to the Owner/ Purchasing Office within 24 hours three (3) references of successfully completed projects from General Contractors and/or Construction Managers and/or Owners. Failure to provide these references will be cause to reject the submitted bid.

(Paragraphs deleted)

§ 4.2.6 The Owner will have the right to retain the bid security of Bidders to whom an award is being considered until either

- (a) the Contract has been executed and bonds, if required, have been furnished, or
- (b) the specified time has elapsed so that Bids may be withdrawn or
- (c) all Bids have been rejected.

§ 4.2.7 To protect the public interest the Owner may request a D & B (Dun & Bradstreet ®) report on the apparent low bidder. D & B rating less than A shall be cause for rejection of bid by Owner.

§ 4.2.8 Owner reserves the right to request from apparent low bidder financial statements for the firm for up to 3 fiscal years..

§ 4.3 SUBMISSION OF BIDS

§ 4.3.1

(Paragraphs deleted)

All copies of the Bid, the bid security, if any, and any other documents required to be submitted with the Bid shall be enclosed in a sealed opaque envelope. The envelope shall be addressed to the party receiving the Bids and shall be identified with the Project name, the Bidder's name and address and, if applicable, the designated portion of the Work for which the Bid is submitted. If the Bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "SEALED BID ENCLOSED" on the face thereof.

§ 4.3.2 Bids shall be deposited at the designated location prior to the time and date for receipt of Bids. Bids received after the time and date for receipt of Bids will be returned unopened.

§ 4.3.3 The Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids.

§ 4.3.4 Oral, telephonic, telegraphic, facsimile or other electronically transmitted bids will not be considered.

(Paragraph deleted)

§ 4.4 MODIFICATION OR WITHDRAWAL OF BID

§ 4.4.1 A Bid may not be modified, withdrawn or canceled by the Bidder during the stipulated time period following the time and date designated for the receipt of Bids, and each Bidder so agrees in submitting a Bid.

§ 4.4.2 Prior to the time and date designated for receipt of Bids, a Bid submitted may be modified or withdrawn by notice to the party receiving Bids at the place designated for receipt of Bids. Such notice shall be in writing over the signature of the Bidder. Written confirmation over the signature of the Bidder shall be received, and date and time stamped by the receiving party on or before the date and time set for receipt of Bids. A change shall be so worded as not to reveal the amount of the original Bid.

§ 4.4.3 Withdrawn Bids may be resubmitted up to the date and time designated for

(Paragraphs deleted)

the receipt of Bids provided that they are then fully in conformance with these Instructions to Bidders.

§ 4.4.4 Bid security, if required, shall be in an amount sufficient for the Bid as resubmitted.

ARTICLE 5 CONSIDERATION OF BIDS

§ 5.1 OPENING OF BIDS

At the discretion of the Owner, if stipulated in the Advertisement or Invitation to Bid, the properly identified Bids received on time will be publicly opened and will be read aloud. An abstract of the Bids may be made available to Bidders.

§ 5.2 REJECTION OF BIDS

The Owner shall have the right to reject any or all Bids. A Bid not accompanied by a required bid security or by other data required by the Bidding Documents, or a Bid which is in any way incomplete or irregular is subject to rejection.

§ 5.3 ACCEPTANCE OF BID (AWARD)

§ 5.3.1 It is the intent of the Owner to award a Contract to the lowest qualified Bidder provided the Bid has been submitted in accordance with the requirements of the Bidding Documents and does not exceed the funds available. The Owner shall have the right to waive informalities and irregularities in a Bid received and to accept the Bid, Alternate Bids, and proposed Substitutions which, in the Owner's judgment, is in the Owner's own best interests.

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

ARTICLE 6 POST-BID INFORMATION

(Paragraphs deleted)

§ 6.3 SUBMITTALS

§ 6.3.1 The Bidder shall, as soon as practicable or as stipulated in the Bidding Documents, after notification of selection for the award of a Contract, furnish to the Owner through the Architect in writing:

.1

(Paragraphs deleted)

names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for the principal portions of the Work.

§ 6.3.2 Prior to the execution of the Contract, the Architect will notify the Bidder in writing if either the Owner or Architect, after due investigation, has reasonable objection to a person or entity proposed by the Bidder. If the Owner or Architect has reasonable objection to a proposed person or entity, the Bidder may, at the Bidder's option, (1) withdraw the Bid or (2) submit an acceptable substitute person or entity with an adjustment in the Base Bid or Alternate Bid to cover the difference in cost occasioned by such substitution. The Owner may accept the adjusted bid price or disqualify the Bidder. In the event of either withdrawal or disqualification, bid security will not be forfeited.

(Paragraphs deleted)

§ 6.3.3 Persons and entities proposed by the Bidder and to whom the Owner and Architect have made no reasonable objection must be used on the Work for which they were proposed and shall not be changed except with the written consent of the Owner and Architect.

ARTICLE 7 PERFORMANCE BOND AND PAYMENT BOND

(Paragraph deleted)

§7.1 PERFORMANCE BOND AND PAYMENT BOND

§ 7.1.1 The Contractor shall furnish a Performance Bond and Labor and Materials Payment Bond covering the faithful performance of the Contract and the payment of all obligations arising thereunder and complying with the requirements of

Maryland Law. Both bonds shall be in the amount of one hundred percent (100%) of the Contract amount and shall name the Howard County Board of Education as Oblige.

§ 7.1.2 Bonds shall be written by a bonding company that must be licensed with MD Insurance Administration to do business in the State of Maryland and otherwise acceptable to the Howard County Public School System. The Contractor shall use Bond Forms provided by the Owner AIA Document A312 - 2010 Performance Bond and AIA Document A312 - 2010 Labor and Material Payment Bond, in order to satisfy the Bond requirements referenced in this Article.

§ 7.1.3 Owner reserves the right to request from Contractor financial statements for the firm for up to prior 3 fiscal years.

§ 7.1.4 To protect the public interest the Owner may request a D & B report on the Contractor. Should the D & B rating fall below the awarded rating, Contractor shall advise Owner of his corrective measures.

§ 7.1.5 Firms issuing said bonds must be licensed to write bonds in the State of Maryland. The Contractor shall pay the premiums for required bonds. Obtainage of the required bonds by Contractor shall be a condition precedent to effectuation of the Contract between Owner and Contractor. If additional work is authorized, the amounts of the bonds shall be increased to cover the value of the increased Contract sum. All bonds shall conform to the requirements of the Maryland Little Miller Act. All bonds shall be subject to Owner's approval.

(Paragraphs deleted)

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

§ 7.1.7 If the furnishing of such bonds is stipulated in the Bidding Documents, the cost shall be included in the Bid. If the furnishing of such bonds is required after receipt of bids and before execution of the Contract, the cost of such bonds shall be added to the Bid in determining the Contract Sum.

§ 7.2 TIME OF DELIVERY AND FORM OF BONDS

§ 7.2.1 The Bidder shall deliver the required bonds to the Owner with the executed contract and dated with the date of contract. If the Work is to be commenced prior thereto in response to a letter of intent, the Bidder shall, prior to commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished and delivered in accordance with this Section 7.2.1.

§ 7.2.2 Unless otherwise provided, the bonds shall be written on AIA Document A312-2010, Performance Bond and Labor and Material Payment Bond. Both bonds shall be written in the amount of the Contract Sum.

(Paragraph deleted)

§ 7.2.4 The Bidder shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of the power of attorney effective as of the date of execution of the contract..

ARTICLE 8 FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

Unless otherwise required in the Bidding Documents, the Agreement for the Work will be written on AIA Document A101-2007 edition as modified by Howard County Public School System, Standard Form of Agreement Between Owner and Contractor Where the Basis of Payment Is a Stipulated Sum.

(Table deleted)(Paragraphs deleted)(Paragraphs deleted)

SECTION 003000
FORM OF PROPOSAL

THEATRICAL HOUSE LIGHTING AND CONTROLS FOR
AUDITORIUM AT WILD LAKE HIGH SCHOOL
BID #124.23.B4

Date: _____

Owner: Board of Education
of Howard County Maryland
10910 Clarksville Pike
Ellicott City, MD 21042
Tel (410) 313-4584
Fax (410) 313-6789

Contract Package/Division: 1A-General

Contractor: _____

The undersigned, having carefully examined the Bid Documents for the above reference project, including, but not limited to the "Bid Announcement," "Instructions to Bidders," "General Conditions," "Technical Specifications," "Addenda," and any other related Bid Documents, "do hereby propose to furnish all the necessary labor, materials, equipment and services to perform all of the work required at Wilde Lake High School in strict accordance with the aforesaid documents using only specified manufacturer's materials for the Lump Sum as follows:

TOTAL BASE BID FOR THE ENTIRE CONTRACT PACKAGE/DIVISION LISTED ABOVE – EXPRESSED IN WORDS AND FIGURES:

_____ \$ _____	(IN FIGURES)
IN WORDS (Printed Neatly in Ink or Typewritten)	
** In the case of a discrepancy between the total base bid written words and figures, the amount written in words shall govern.	

PROPOSED SUBSTITUTE EQUIPMENT

Proposed substitutions shall be submitted in accordance with Instructions to Bidders, see Section 00100 Instructions to Bidders, Article 3, Bidding Documents, 3.3 Substitutions. Bids will be considered on systems, processes, or products of manufacturers other than those cited if accompanied by detailed technical specifications for each item, catalogs, test reports, brochures, and other descriptive literature and supporting data, sufficient in detail to permit evaluation of the proposed substitution without further reference. The Contractor should list below any proposed substitutions for a piece of equipment. If the piece of equipment is approved by the Engineer, the Contract price will be adjusted by the amount shown. The acceptance or rejection of "Substitute Equipment" **will not** be considered when determining the successful bidder.

<u>SPEC.</u> <u>SECTION</u>	<u>ITEM</u>	<u>SUBSTITUTE MANUFACTURER</u>	<u>ADD OR</u> <u>DEDUCT</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

FORM CONTINUES ON NEXT PAGE

SUBCONTRACTORS

Bidders are hereby requested to name the subcontractors as part of their bid package.

Name of Company

Type of Work

ADDENDA

Receipt of the following addenda is acknowledged:

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

SURVEY

For information purposes, please advise by what methods you were informed of this solicitation. Your response would be very much appreciated.

E- Maryland Marketplace (Y/N) _____

Contractor: _____

Ad House: Name of Ad House _____

Other: _____

COMPANY INFORMATION

Name of company _____

_____ years in business

Street Address _____

City _____

State _____

Zip _____

Telephone # _____

Fax # _____

Federal ID or Social Security # _____

MD Dept. of Assess. Taxation Number _____

eMaryland Marketplace (emma #) _____

MDOT MBE Certification # _____

**** Please Include a copy of your W-9**

CONTRACT ADMINISTRATOR

Print Name _____

Title _____

Address _____

Phone _____

Fax _____

Cell phone _____

e-mail _____

Theatrical House Lighting and Controls for Auditorium at Wilde Lake High School
Bid #124.23.B4

LIQUIDATED DAMAGES – MINORITY BUSINESS ENTERPRISE PROGRAM

This contract requires the contractor to make good faith efforts to comply with the Minority Business Enterprise (“MBE”) Program and contract provisions. The Board and the Contractor acknowledge and agree that the Board of Education of Howard County will incur damages, including but not limited to loss of goodwill, detrimental impact on economic development, and diversion of internal staff resources, if the Contractor does not make good faith efforts to comply with the requirements of the MBE Program and MBE contract provisions. The parties further acknowledge and agree that the damages the Board of Education of Howard County might reasonably be anticipated to accrue as a result of such lack of compliance are difficult to ascertain with precision.

Therefore, upon a determination by the Board of Education of Howard County that the Contractor failed to make good faith efforts to comply with one or more of the specified MBE Program requirements or contract provisions, the Contractor agrees to pay liquidated damages to the Board of Education of Howard County at the rates set forth below. The Contractor expressly agrees that the Board of Education of Howard County may withhold payment on any invoices as a set-off against liquidated damages owed. The Contractor further agrees that for each specified violation, the agreed upon liquidated damages are reasonably proximate to the loss the Board of Education of Howard County is anticipated to incur as a result of such violation.

- a. Failure to submit each monthly payment report in full compliance with COMAR 21.11.03.13B (3): \$100.00 per day until the monthly report is submitted as required.
- b. Failure to include in its agreements with MBE subcontractors a provision requiring submission of payment reports in full compliance with COMAR 21.11.03.13B (4): \$100.00 per MBE subcontractor.
- c. Failure to comply with COMAR 21.11.03.12 in terminating, canceling, or changing the scope of work/value of a contract with an MBE subcontractor and/or amendment of the MBE participation schedule: the difference between the dollar value of the MBE participation commitment on the MBE participation schedule for that specific MBE firm and the dollar value of the work performed by that MBE firm for the contract.
- d. Failure to meet the Contractor’s total MBE participation goal and subgoal commitments: the difference between the dollar value of the total MBE participation commitment on the MBE participation schedule and the MBE participation actually achieved.
- e. Failure to promptly pay all undisputed amounts to an MBE subcontractor in full compliance with the prompt payment provisions of this contract: \$100.00 per day until the undisputed amount due to the MBE subcontractor is paid.

Notwithstanding the use of liquidated damages, the Board of Education of Howard County reserves the right to terminate the contract and exercise all other rights and remedies provided in the contract or by law.

WARRANTY TO THE LUMP SUM

The undersigned affirms that the above Base Bid represents the entire cost of the Project in accordance with the Bid Documents and that no claim will be made on account of any increase in wage, scales, material prices, taxes, insurance, cost indexes or any other rate affecting the construction industry and/or this project.

If the undersigned received written notice of the acceptance, at his designated address, within sixty (60) days after the bid opening (or later if the bid has not been withdrawn), the undersigned agrees to execute and deliver a contract and bonds in accordance with the bid as accepted, within seven (7) days after receiving notice, or forfeit the amount of the bid bond.

FORM CONTINUES ON NEXT PAGE

AFFIDAVIT

Special Instructions: An authorized representative of the bidder needs to complete the following affidavit and insert an answer to paragraphs 1 and 3.

Statutory Affidavit and Non-Collusion Certification:

I, _____, being duly sworn, depose and state:

1. I am the (officer) and duly authorized representative of the firm of the building construction organization named _____ whose address is

_____ and that possess the authority to make this affidavit and certification on behalf of myself and the firm for which I am acting.

2. Except as described in Paragraph 3 below, neither I, nor to the best of my knowledge, the above firm, nor any of its officers, directors, or partners, or any of its employees who are directly involved in obtaining or performing contracts with any public bodies has:

(a) Been convicted of bribery, attempted bribery, or conspiracy to bribe, under the laws of any state or of the federal government;

(b) Been convicted under the laws of the state, another state, or the United States of: a criminal offense incident to obtaining, attempting to obtain, or performing a public or private contract; or fraud, embezzlement, theft, forgery, falsification or destruction of records, or receiving stolen property;

(c) Been convicted of a criminal violation of an antitrust statute of the State of Maryland, another state, or the United States;

(d) Been convicted of a violation of the Racketeer Influenced and Corrupt Organization Act, or the Mail Fraud Act, for acts in connection with the submission of bids or proposals for a public or private contract;

(e) Been convicted of any felony offenses connected with obtaining, holding, or maintaining a minority business enterprise certification, as prohibited by Section 14-308 of the State Finance & Procurement Article;

(f) Been convicted of conspiracy to commit any act or omission that would constitute grounds for conviction under any of the laws or statutes described in Paragraph (a) through (e) above; or

(g) Been found civilly liable under an antitrust statute of this State, another state, or the United States for acts or omissions in connection with the submission of bids or proposals for a public or private contract.

3. The only conviction, plea, or admission by any officer, director, partner, or employee of this firm to involvement in any of the conduct described in Paragraph 2 above is as follows:

(If none, write "None" below. If involvement, list the date, count, or charge, official or administrative body, the individuals involved, their position with the firm, and the sentence or disposition of the charge.)

(you may attach an explanation necessary)

4. I affirm that this firm will not knowingly enter into a contract with a public body under which a person or business debarred or suspended under Maryland State Finance and Procurement Title 16, subtitle 3, Annotated Code of Maryland, as amended, will provide, directly or indirectly, supplies, services, architectural services, construction-related services, leases of real property, or construction.

FORM CONTINUES ON NEXT PAGE

5. I affirm that this proposal or bid to the Board of Education of Howard County is genuine and not collusive or a sham; that said bidder has not colluded, conspired, connived and agreed, directly or indirectly, with any bidder or person to put in a sham bid or to refrain from bidding and is not in any manner, directly or indirectly, sought by agreement of collusion or communication or conference, with any person to fix the bid prices of the affidavit or any other bidder, or to fix any overhead, profit or cost element of said bid price, or that if any bidder, or to secure an advantage against the Board of Education of Howard County or any other person interested in the proposed contract; and that all statements in the proposal or bid are true. I acknowledge that, if the representations set forth in this affidavit are not true and correct, the Board of Education of Howard County may terminate any contract awarded and take any other appropriate action.

6. **SEX OFFENDER NOTIFICATION** - Maryland law requires certain sex offenders to register with the local law enforcement agency; See Maryland Annotated Code, Criminal Procurement Article, §11-704. One of the purposes of this law, found in Article 27§ 792, is to inform school systems when a Registered Sex Offender is residing or working in the area. When the sex offender registers, the local police are required to notify the Superintendent of Schools, and the Superintendent, in turn, is required to send a notice to school principals. As a contractor working for Howard County Public School System (HCPSS), we require that you do not employ Registered Sex Offenders to work on projects for our school system if they, as a result, are required to perform delivery, installation, repair, construction or any other kind of services **on HCPSS property**. Further, Maryland Law that became effective June 22, 2006,

requires that any person who enters a contract with a county board of education or a non-public school "may not knowingly employ an individual to work at a school" if the individual is a registered sex offender; See §11-722 Criminal Procurement Article. An employer who violates this requirement is guilty of a misdemeanor and if convicted may be subject to up to five years imprisonment and/or a \$5,000 fine.

Each contractor shall screen their work-forces to ensure that a Registered Sex Offender does not perform work at a county public school and also ensure that a subcontractor and independent contractor conducts screening of its personnel who may work at a school. The term "work force" is intended to refer to all of the contractor's direct employees and subcontractors and/or independent contractors it uses to perform the work. Violations of this provision may cause HCPSS to take action against the contractor up to and including termination of the contract.

Effective July 1, 2015, amendments to § 6-113 of the Education Article of the Maryland Code further require that a contractor or subcontractor for a local school system may not knowingly assign an employee to work on school property with direct, unsupervised, and uncontrolled access to children, if the employee has been convicted of, or pled guilty or nolo contendere to, a crime involving a sexual offense, child sexual abuse and crimes of violence.

The Contractor shall submit to HCPSS a listing of any employees assigned to perform under this agreement and certify that the necessary criminal history records checks have been conducted and that employee complies with the requirements. See section 000740 for Criminal Background Information and forms.

I/we understand that the project I/we am seeking access to perform requires that I/we am in a school building with access to children. I/we therefore agree to undergo a criminal background check and send that information to a school system designee before receiving full approval. The criminal background check is to determine whether I/we have a record of any violation of laws prohibiting child sexual abuse or crimes of violence. I/we waive any rights such as to allow HCPSS access to that information as a condition to that approval of my request. I/we also understand that the criminal background check will be at my own expense.

FORM CONTINUES ON NEXT PAGE

The statements contained in this affidavit shall be incorporated into the awarded contract as material provisions and shall be effective throughout the life of the contract. The firm has continuing obligation through the life of the contract to submit a revised affidavit should the firm discover information, or events occur, which render the contents of this affidavit erroneous or incomplete or which would result in the firm providing a different response. The firm's failure to submit a revised affidavit within three (3) working days of either its awareness of any error, change of circumstances, incompleteness, etc., or request by the Owner shall constitute breach of contract. Upon submission of a revised affidavit, the Owner has the right to take such actions as may be necessary, in the judgment of the Owner, to maintain and enforce the provisions of the affidavit, including termination of the contract.

I DO SOLEMNLY DECLARE AND AFFIRM under the penalties of penalties that the contents of these affidavits (Statutory and Non-Collusion) are true and correct, that I am executing this Affidavit in compliance with Section 16-311 of the State Finance and Procurement Article, Annotated Code of Maryland, and the Non-Collusion Certification in compliance with requirements of the Board of Education of Howard County Maryland, and that I am executing and submitting this Form of Proposal on behalf of and with full authority by the bidder named below.

(Signature of Bidder) (Date)

(Print Name of Bidder) (Title of Bidder)

SUBSCRIBED AND SWORN to before me on this _____ day of _____, 2015.

NOTARY PUBLIC

Name _____ Seal:

My Commission Expires _____

(Legal Name of Company)

(Address)

(City) (State) (Zip)

(Telephone) (Fax)

(E-mail address)

Contractor's License Number # _____

We are/I am licensed to do business in the State of Maryland as a:

() Corporation () Partnership () Individual () Other

FORM CONTINUES ON NEXT PAGE

ITEMS FOR BID SUBMISSION

The bid submission package should include the following:

- _____ Form of Proposal – Section 003000 including the following:
 - a) Federal ID or Social Security Number
 - b) MD Dept. of Assess. & Taxation Number
 - c) eMaryland Marketplace (emma #)
 - d) MDOT MBE Certification
 - e) Copy of your W-9
- _____ Experience / Reference Form (3 References)
- _____ Profile of Company Form
- _____ Key Personnel Form
- _____ AIA Doc A-310-2010 Bid Bond – Section 000310 (in the amount of 5%)
- _____ Attachment “A” – MBE Utilization & Fair Solicitation Affidavit
- _____ Attachment “B” – MBE Participation Schedule

END OF FORM

EXPERIENCE / REFERENCE FORM

Bidders are hereby required to list three references for whom similar work has been performed within the last three years:

1. Customer Name: _____
2. Customer Address: _____
3. Contact Name and Title: _____
4. Contact Phone #: _____
5. Contact E-mail: _____
6. Describe customer's facility: _____

7. Describe IPM service performed: _____

8. Name your firm's Quality Assurance Manager for service: _____

9. Is this contract renewable? yes ☐ no ☐
10. If yes to the above, was the contract renewed? And if not, why not? _____

11. Was service performed on an on-call basis? Yes ☐ No ☐
12. Was this fixed price, T & M, lump sum, other: _____
13. Annual Dollar amount of contract: _____
14. Commencement Date: _____ Termination date: _____
15. List of all similarities to HCPSS requirements: _____

Cited references must be able to confirm, without reservation, your company's ability to provide the level of service mandated in this solicitation. Contact information is to be accurate. The Owner will not be responsible for errors, non-working numbers or persons that are no longer employed by the firm or do not respond. Howards County Board of Education reserves the right to reject any bid based on an unsatisfactory reference. The Board of Education also reserves the right to request additional references as needed.

Note: This form must be completed for three (3) References.

PROFILE OF COMPANY FORM

Comprehensive Description of Organization

Complete for local office which will be performing The Howard County Public School System work.

Company Name: _____ Phone #: _____
Company Address: _____ Fax #: _____
_____ E-mail: _____
Web Page: _____

Date of Incorporation: _____ State of Incorporation: _____

State of Maryland Contractors License number: _____

Number of Years in business under present name: _____

Other or former names under which your organization has operated: _____

Percent (%) of Work Performing:	_____	Services (new installation)	_____ %
	_____	Services (upgrades)	_____ %
	_____	Services (maintenance)	_____ %
	_____	other service	_____ %

Name of Principal(s) and Title(s):

_____	_____
_____	_____

History of Firm: _____

Total Number of Employees: _____	Number of Office Personnel: _____
Number of Field Technicians: _____	Number of Installers: _____

Bonding capacity: _____

Has your firm, in the last five years, ever had a contract terminated for any reason? Yes ☐ No ☐

If Yes, Explain: _____

Total Company Annual Dollar Volume for all Security System Contractor work:

2022 \$ _____ 2021 \$ _____ 2020 \$ _____

KEY PERSONNEL FORM

STAFFING PLAN – Installer

Bidder: _____

Phone #: _____

Fax #: _____

Installer: _____

Cell#: _____

(Name)

Email: _____

TECHNICAL TRAINING/EDUCATIONAL BACKGROUND:

Association/Institution

Licenses/Certifications

Date Earned

Number of years with previous firm: _____

Number of years as a full time employee

Name of previous firm: _____

with present firm: _____

Positions held for the

past three years: _____

Positions held for the

past three years: _____

List similar projects worked on and particular role this individual had during each project:

- Customer Name: _____
- Contact Name and Title: _____
- Address: _____ Phone #: _____
- Position held: _____
- Specific work performed: _____
- Brief description of project _____

- Customer Name: _____
- Contact Name and Title: _____
- Address: _____ Phone #: _____
- Position held: _____
- Specific work performed: _____
- Brief description of project _____

It is imperative that accurate contact names and phone numbers be given for the references listed. All references are to include a contact person who can comment on the Installer's ability to perform work such as is specified in the bid documents.

Note: This form must be completed for three (3) security system installation/maintenance technicians.

PROJECT: _____

PSC#: _____

Attachment A (page 1 of 2)

NON-WAGE SCALE

**CERTIFIED MINORITY BUSINESS ENTERPRISE
UTILIZATION AND FAIR SOLICITATION AFFIDAVIT**

NOTE: You must include this document with your bid or offer. If you do not submit the form with your bid or offer, the procurement officer shall deem your bid non-responsive or your offer not reasonably susceptible of being selected for award.

* * * * *

Part I.

I acknowledge the:

- Overall certified MBE subcontract participation goal of ____ % and
- The subgoals, if applicable, of:
 - ____ % for certified African American-owned businesses and
 - ____ % for certified Asian American-owned businesses.

I have made a good-faith effort to achieve this goal. If awarded the contract, I will continue to attempt to increase MBE participation during the project.

Part II.

Check ONE Box

NOTE: FAILURE TO CHECK ONE OF BOXES 1, 2, or 3 BELOW WILL RENDER A BID NON-RESPONSIVE OR AN OFFER NOT REASONABLY SUSCEPTIBLE OF BEING SELECTED FOR AWARD

NOTE: INCONSISTENCY BETWEEN THE ASSERTIONS ON THIS FORM AND THE INFORMATION PROVIDED ON THE *MBE PARTICIPATION SCHEDULE* (ATTACHMENT B) MAY RENDER A BID NON-RESPONSIVE OR AN OFFER NOT REASONABLY SUSCEPTIBLE OF BEING SELECTED FOR AWARD

- 1 ☐ I have met the overall MBE goal and MBE subgoals for this project. I submit with this Affidavit [Attachment A] the *MBE Participation Schedule* [Attachment B], which details how I will reach that goal.

or

- 2 ☐ After having made a good-faith effort to achieve the overall MBE goal and MBE subgoals for this project, I can achieve partial success only. I submit with this Affidavit [Attachment A] the *MBE Participation Schedule* [Attachment B], which details the MBE participation I have achieved.

I request a partial waiver as follows:

- Waiver of overall MBE subcontract participation goal: ____ %
- Waiver of MBE subcontract participation subgoals, if applicable:
 - ____ % for certified African American-owned businesses and
 - ____ % for certified Asian American-owned businesses.

Within 10 days of being informed that I am the apparent awardee, I will submit *MBE Waiver Documentation* [Attachment F] (with supporting documentation).

or

- 3 ☐ After having made a good faith effort to achieve the overall MBE goal and MBE subgoals for this project, I am unable to achieve any portion of the goal or subgoals. I submit with this Affidavit [Attachment A] the *MBE Participation Schedule* [Attachment B].

I request a full waiver.

Within 10 days of being informed that I am the apparent awardee, I will submit *MBE Waiver Documentation* [Attachment F] (with supporting documentation).

Part III.

I understand that if I am the apparent awardee or conditional awardee, I must submit **within 10 working days** after receiving notice of the potential award or within 10 days after the date of conditional award – whichever is earlier – the:

- *Outreach Efforts Compliance Statement* (Attachment C)
- *Subcontractor Project Participation Statement* (Attachment D)
- *Minority Subcontractors Unavailability Certificate* (Attachment E) (if applicable)
- Any other documentation the Procurement Officer requires to ascertain my responsibility in connection with the MBE participation goal and subgoals

I acknowledge that if I fail to timely return complete documents, the Procurement Officer may determine that I am not responsible and therefore not eligible for contract award. If the contract has been awarded, the award is voidable.

I acknowledge that the MBE subcontractors/suppliers listed in the *MBE Participation Schedule* and any additional MBE subcontractor/suppliers identified in the *Subcontractor Project Participation Statement* will be used to accomplish the percentage of MBE participation that I intend to achieve.

In the solicitation of subcontract quotations or offers, MBE subcontractors were provided the same information and amount of time to respond as were non-MBE subcontractors.

The solicitation process was conducted in such a manner so as to not place MBE subcontractors at a competitive disadvantage to non-MBE subcontractors.

I solemnly affirm under the penalties of perjury that this Affidavit is true to the best of my knowledge, information, and belief.

Bidder/Offeror Name

Address

Address (continued)

Affiant Signature

Printed Name & Title

Date

**ATTACHMENT B
NON-WAGE SCALE**

MBE PARTICIPATION SCHEDULE

ORIGINAL

This document must be included with the bid or offer. If the bidder or offeror fails to submit this form with the bid or offer as required, the procurement officer shall deem the bid non-responsive or shall determine that the offer is not reasonably susceptible of being selected for award.

1. Prime Contractor's Name			2. Prime Contractor's Address/Telephone Number		
3. Project/School Name			4. Project/School Location		
5. LEA Name: _____ PSC Number: _____			6. Base Bid Amount \$ _____ Acceptance Alternates \$ _____ Total \$ _____		
7a. Minority Firm Name: _____ Minority Firm Address: _____ MDOT Firm Certification Number: _____ <input type="checkbox"/> African American <input type="checkbox"/> Asian American <input type="checkbox"/> Native American <input type="checkbox"/> Women <input type="checkbox"/> Hispanic <input type="checkbox"/> Disabled Telephone Number: _____ NAICS Code: _____					
Subcontractor Firm (Select One)	Allowable Percentage	Percentage of Total Contract	Subcontractor Dollar Amount	Participation Amount	
MDOT Certified Firm	100%		\$ _____	\$ _____	
MDOT Certified Prime Contractor	50% of established goal OR		\$ _____	\$ _____	
	100% of one subgroup contract subgoal				
MDOT Certified Supplier, Wholesaler and Regular Dealer	60%		\$ _____	\$ _____	
7b. Minority Firm Name: _____ Minority Firm Address: _____ MDOT Firm Certification Number: _____ <input type="checkbox"/> African American <input type="checkbox"/> Asian American <input type="checkbox"/> Native American <input type="checkbox"/> Women <input type="checkbox"/> Hispanic <input type="checkbox"/> Disabled Telephone Number: _____ NAICS Code: _____					
Subcontractor Firm (Select One)	Allowable Percentage	Percentage of Total Contract	Subcontractor Dollar Amount	Participation Amount	
MDOT Certified Firm	100%		\$ _____	\$ _____	
MDOT Certified Prime Contractor	50% of established goal OR		\$ _____	\$ _____	
	100% of one subgroup contract subgoal				
MDOT Certified Supplier, Wholesaler and Regular Dealer	60%		\$ _____	\$ _____	
7c. Minority Firm Name: _____ Minority Firm Address: _____ MDOT Firm Certification Number: _____ <input type="checkbox"/> African American <input type="checkbox"/> Asian American <input type="checkbox"/> Native American <input type="checkbox"/> Women <input type="checkbox"/> Hispanic <input type="checkbox"/> Disabled Telephone Number: _____ NAICS Code: _____					
Subcontractor Firm (Select One)	Allowable Percentage	Percentage of Total Contract	Subcontractor Dollar Amount	Participation Amount	
MDOT Certified Firm	100%		\$ _____	\$ _____	
MDOT Certified Prime Contractor	50% of established goal OR		\$ _____	\$ _____	
	100% of one subgroup contract subgoal				
MDOT Certified Supplier, Wholesaler and Regular Dealer	60%		\$ _____	\$ _____	
8. MBE Total Amount			9. Total MBE Percent of Entire Contract		
10. Form Prepared by: Name: _____ Title: _____ Date: _____			11. Reviewed and Accepted by Board of Edu. MBE Liaison Name: _____ Title: _____ Date: _____		

Total MBE Participation:	\$ _____	_____ %	
Total African-American Participation:	\$ _____	_____ %	
Total Asian-American MBE Participation:	\$ _____	_____ %	
Total Other Participation:	\$ _____	_____ %	

October 1, 2017

AIA[®] Document A310[™] – 2010

Bid Bond

CONTRACTOR:

(Name, legal status and address)

(Row deleted)

As Principal, hereinafter called the Principal, and
a corporation duly organized under the laws of the State of as Surety, hereinafter called the
Surety, are held and firmly bound unto

(Paragraphs deleted)

As Oblige, hereinafter called the Oblige, in the sum of Dollars (\$))
\$....., for the payment of which sum well and truly
to be made, the said Principal and the said Surety, bind ourselves, or heirs, executors,
administrators, successors and assigns jointly and severally firmly by these presents.

OWNER

Howard County Public School System
10910 Clarksville Pike
Ellicott City, MD, 21043

WHEREAS the Principal has submitted a bid for

PROJECT:

(Name, location or address, and Project number, if any)

ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

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

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

NOW, Therefor, if the Oblige shall accept the bid of Principal and the Principal shall enter into a Contract with the Oblige in accordance with the term of such bid, and give such bond or bonds as may be specified in the bidding or Contract Documents with good and sufficient surety for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof, or in the event of failure of the Principal to enter such Contract and give such bond or bonds, if the Principal shall pay to Oblige the difference not to exceed the penalty thereof between the amount specified in said bid and such larger amount for which the Oblige may in good faith contract with another party to perform the Work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect.

(Paragraphs deleted)

Signed and sealed this day of ,

(Contractor as Principal)

(Seal)

(Witness)

(Title)

(Surety)

(Seal)

(Witness)

(Title)

AIA® Document A101® – 2017

Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum

AGREEMENT made as of the _____ day of _____ in the year 2021
(In words, indicate day, month and year)

BETWEEN the Owner:
(Name, address and other information)

_____ and the Contractor:
(Name, address and other information)

for the following Project:
(Name, location and detailed description)

The Architect:
(Name, address and other information)

The Owner and Contractor agree as follows.
TABLE OF ARTICLES

- 1 THE CONTRACT DOCUMENTS
- 2 THE WORK OF THIS CONTRACT
- 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION
- 4 CONTRACT SUM
- 5 PAYMENTS
- 6 DISPUTE RESOLUTION
- 7 TERMINATION OR SUSPENSION
- 8 MISCELLANEOUS PROVISIONS
- 9 ENUMERATION OF CONTRACT DOCUMENTS
- 10 INSURANCE AND BONDS

ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement and Modifications

ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

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

The parties should complete A101®-2017, Exhibit A, Insurance and Bonds, contemporaneously with this Agreement. AIA Document A201®-2017, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

Init.

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(1416974200)

issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

Contract Package:

Alternate No.:

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall

(Paragraphs deleted)

be the date of this Agreement unless a different date is stated below or provision is made for the date to be fixed in a notice to proceed issued by the Owner.

(Paragraphs deleted)

§ 3.2 The Contract Time shall be measured from the date of commencement, that shown on the Progress Schedule.

§ 3.3 The Contractor shall achieve Substantial Completion of the entire Work not later than The respective dates applicable to this Contract as indicated on the Progress Schedule. The fully developed Progress Schedule issued by Architect/Owner, and hereby fully incorporated into this Agreement, contains

Portion of Work

100 % Complete

, subject to adjustments of this Contract Time as provided in the Contract Documents.

. Liquidated Damages in the sum of one thousand (\$1000.00) for each calendar day shall be assessed for any delays in achieving Substantial Completion, except as noted in Article 8 of the General Conditions of the Contract for Construction. "Substantial Completion" as defined in Article 9.8 of the General Conditions of the Contract for Construction. In addition to Liquidated Damages for delay, as provided above, the Owner shall be entitled to such other damages for breach of contract as more fully provided in the General Conditions for Contract for Construction.

(Paragraph deleted)

(Table deleted)

(Paragraphs deleted)

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract including Alternates and Substitutions the Contract Sum shall be:

\$... .. (\$),

subject to additions and deductions as provided in the Contract Documents.

§ 4.2 The Contract Sum is based upon the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:

Alternate Numbers:

N/A

Init.

(State the numbers or other identification of accepted alternates. If the bidding or proposal documents permit the Owner to accept other alternates subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires.)

(Table deleted)

(Paragraphs deleted)

(Table deleted)

(Paragraph deleted)

§ 4.3 Unit prices, if any:

(Identify and state the unit price; state quantity limitations, if any, to which the unit price will be applicable.)

Item

As listed in the Form of Proposal;

(Paragraphs deleted)

(Table deleted)

(Paragraphs deleted)

ARTICLE 5 PAYMENTS

§ 5.1 PROGRESS PAYMENTS

§ 5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

Contractor shall submit to the Architect on the last day of each month a draft of a Standard Monthly Contractors Requisition for Payment, on AIA Document G702 – 1992 and AIA Document G703 – 1992

(Paragraphs deleted)

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 Subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

- .1 Take that portion of the Contract Sum properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the Contract Sum allocated to that portion of the Work in the schedule of values, less retainage of ten percent (10 %)
- .2 Portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing), less retainage of ten percent (10 %);

(Paragraphs deleted)

§ 5.1.7 Deleted

(Paragraphs deleted)

§ 5.1.8 Reduction or limitation of retainage, if any, shall be as follows:

As described in the General Conditions for the Contract of Construction.

Init.

§ 5.1.9 Deleted

§ 5.2 FINAL PAYMENT

§ 5.2.1 1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor in accordance with Paragraph 9.10 of the General Conditions for Contract.

§ 5.2.2 Deleted

(Paragraphs deleted)

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1

(Paragraphs deleted)

As specified in Contract Documents

(Paragraphs deleted)

§ 6.2 Deleted

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201-2007 and modifications made by Howard County Public School System.

(Paragraphs deleted)

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201-2007 and modifications made by Howard County Public School System.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201-2007 and modifications made by Howard County Public School System or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

(Paragraphs deleted)

§ 8.4 The Contractor's representative:

(Name, address and other information)

§ 8.5 The Contractor's representative shall not be changed without ten days' written notice to the Owner

(Paragraphs deleted)

§ 8.6 Delete:

Init.

(Paragraphs deleted)

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 The Contract Documents, except for Modifications issued after execution of this Agreement, are enumerated in the sections below.

§ 9.1.1 The Agreement is the executed Standard Form of Agreement Between Owner and Contractor, AIA Document A101-1997 and modifications made by Howard County Public School System.

§ 9.1.2 The General Conditions are the 2007 edition of the General Conditions of the Contract for Construction, AIA Document A201-2007 and modifications made by Howard County Public School System.

§ 9.1.3 Delete

§ 9.1.4 The Specifications:

(Paragraph deleted)

The Specifications are those contained in the Project Manual, and are as follows:

Title of Specifications exhibit: As listed in Table of Contents of Project Manual dated:

§ 9.1.5 The Drawings:

The Drawings are as follows, and are dated _____ unless a different date is shown below:

(Table deleted)

Title of Drawings exhibit: As listed in the Schedule of Drawings of the Contract Title of Drawings exhibit:

(Table deleted)

§ 9.1.6 The Addenda, if any:

Number

Date

Pages

Portions of Addenda relating to bidding requirements are not part of the Contract Documents unless the bidding requirements are also enumerated in this Article 9.

§ 9.1.7 Additional documents, if any, forming part of the Contract Documents:

(Paragraph deleted)

As listed in the Project Manual.

ARTICLE 10 INSURANCE AND BONDS

The Contractor shall purchase and maintain insurance and provide bonds as set forth in Article 11 of AIA Document A201-2007.

Type of insurance or bond

As listed in the Project Manual

(Paragraphs deleted)

Init.

This Agreement is entered into as of the day and year first written above and is executed in at least four original copies of which one is to be delivered to the Contractor, one each to the Construction Manager and Architect for use in the administration of the Contract, and the remainder to the Owner.

OWNER

Board of Education of Howard County

(A Body Politic and Corporate)

CONTRACTOR

(Signature)

(Signature)

Chao Wu, Chair (SEAL)

(Printed name and title) (SEAL)

Approved by:

Michael J. Martirano, Ed. D., Superintendent of Schools

Init.

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SECTION 000601
INSURANCE REQUIREMENTS

1 - General Insurance Requirements:

1.1 - The Contractor shall not commence Work until he has obtained at his own expense all of the insurance as required hereunder and such insurance has been approved by the Board of Education of Howard County Maryland; nor shall the Contractor allow any Subcontractor to commence Work on his subcontract until all similar insurance required of the Subcontractor has been so obtained and approved by the Contractor. Approval of insurance required of the Contractor will be granted only after submission to the Board of Education of Howard County Maryland of original, signed certificates of insurance or, alternately, at the Board of Education of Howard County Maryland's request, certified copies of the required insurance policies.

1.2 - The Contractor shall require all Subcontractors to maintain during the term of this agreement, commercial general liability insurance, business automobile liability insurance, and Workers' Compensation and employers' liability insurance, in the same manner as specified for the Contractor. The Contractor shall furnish Subcontractors' certificates of insurance to the Board of Education of Howard County Maryland immediately upon request.

1.3 - All insurance required hereunder shall include the following provision: "It is agreed that this policy is not subject to cancellation, non-renewal, material change, or reduction in coverage until sixty (60) days prior written notice has been given to the Board of Education of Howard County Maryland."

The phrases "endeavor to" and "... but failure to mail such notice shall impose no obligation or liability of any kind upon the company, its agents or representatives" are to be eliminated from the cancellation provision of standard ACORD certificates of insurance.

1.4 - No acceptance and/or approval of any insurance by the Board of Education of Howard County Maryland shall be construed as relieving or excusing the Contractor, or the Surety, or his bonds, from any liability or obligation imposed upon either or both of them by the provisions of the Contract Documents.

1.5 - The Board of Education of Howard County Maryland and its elected or appointed officials, agents and employees are to be named as an additional insured under all coverages except Workers compensation and business automobile liability, and the certificate of insurance, or the certified policy, if requested, must so state this. Coverage afforded under this paragraph shall be primary as respects the Board of Education of Howard County Maryland, its agents and employees.

1.6 - The Contractor shall be responsible for the Work performed under the Contract Documents and every part thereof, and for all materials, tools, equipment, appliances, and property of any and all description used in connection with the Work. The Contractor assumes all risk for direct and indirect damage or injury to the property or persons used or employed on or in connection with the Work contracted for, and of all damage or injury to any person or property wherever located, resulting from the action, omission, commission or operation under the contract, or in connection in any way whatsoever with the contracted Work, until final acceptance of the Work by the Board of Education of Howard County Maryland.

1.7 - Insurance coverage required in these specifications shall be in force throughout the contract term. Should the Contractor fail to provide acceptable evidence of current insurance within seven days of written notice at any time during the contract term, the Board of Education of Howard County Maryland shall have the absolute right to terminate the contract without any further obligation to the Contractor, and the Contractor shall be liable to the Board of Education of Howard County Maryland for the entire additional cost of procuring performance and the cost of performing the incomplete portion of the contract at time of termination.

1.8 - Contractual and other liability insurance provided under this contract shall not contain a supervision, inspection or engineering services exclusion that would preclude the Board of Education of Howard County Maryland from supervising or inspecting the project as to the end result. The Contractor shall assume all

on-the-job responsibilities as to the control of persons directly employed by it and of the Subcontractors and any persons employed by the Subcontractor.

1.9 - Nothing contained in the specifications shall be construed as creating any contractual relationship between any Subcontractor and the Board of Education of Howard County Maryland. The Contractor shall be fully responsible to the Board of Education of Howard County Maryland for the acts and omissions of the Subcontractors and of persons employed by them as it is for acts and omissions of persons directly employed by it.

1.10 - Precaution shall be exercised by the Contractor at all times for the protection of persons, (including employees) and property. All existing structures, utilities, roads, services, trees and shrubbery shall be protected against damage or interruption of service at all times by the Contractor and its Subcontractors during the term of the contract, and the Contractor shall be held responsible for any damage to property occurring by reason of its operation on the property.

1.11 - If the Contractor does not meet the insurance requirements of the specifications, alternate insurance coverage, satisfactory to the Board of Education of Howard County Maryland, may be considered. Written requests for consideration of alternate coverages must be received by the Board of Education of Howard County Maryland at least ten Working days prior to the date set for receipt of bids or proposals. If the Board of Education of Howard County Maryland denies the request for alternate coverages, the specified coverages will be required to be submitted.

1.12 - All required insurance coverages must be acquired from insurers allowed to do business in the State of Maryland and acceptable to the Board of Education of Howard County Maryland. The insurers must also have a policyholders' rating of "A-" or better, and a financial size of "Class VII" or better in the latest edition of Best's Insurance Reports, unless the Board of Education of Howard County Maryland grants specific approval for an exception.

1.13 - The Board of Education of Howard County Maryland will consider any deductible amounts as part of its review of the financial stability the Contractor. Any deductibles shall be disclosed by the Contractor, and deductible amounts are the responsibility of the Contractor.

2 - Contractor's Liability Insurance - "Occurrence" Basis:

2.1 - The Contractor shall purchase the following insurance coverages:

2.1.1 - Commercial general liability with a minimum limit of \$1,000,000 per occurrence, \$1,000,000 annual aggregate including all of the following:

- i. General aggregate limit is to apply per project;
- ii. Premises/operations;
- iii. Actions of independent Contractors;
- iv. Products/completed operations to be maintained for two years after completion of the Work;
- v. Contractual liability including protection for the Contractor from claims arising out of liability assumed under this contract;
- vi. Personal injury liability including coverage for offenses related to employment;
- vii. Explosion, collapse, or underground (XCU) hazards (confirmation of underground hazard coverage must be confirmed by either certificate of insurance or in writing by Contractor's agent, broker or insurer);

2.1.2 - Business automobile liability including coverage for any owned, hired, or non-owned motor vehicles and automobile contractual liability with a limit of \$1,000,000 per accident; uninsured motorist coverage at minimum statutory limits.

2.1.3 - Workers compensation with statutory benefits as required by Maryland law or the U. S. Longshoremen's and Harbor Workers' Compensation Act, or other laws as required by labor union agreements, including standard other states coverage; employers' liability coverage with limits of \$100,000 per accident, \$100,000 per employee for disease, and a \$500,000 disease policy limit.

2.1.4 - Total limit requirements of 2.1.1, 2.1.2 and 2.1.3 may be met by a combination of primary and umbrella excess liability coverage.

2.1.5 - Aircraft liability including coverage for any owned, hired or non-owned aircraft utilized in the project (e.g. installation of HVAC unit on school roof) with a minimum limit of \$ NA per occurrence applicable to aircraft while in flight or in motion. A higher limit may be required by the Board of Education of Howard County Maryland upon exposure review.

3 - Commercial General or Other Required Liability Insurance - "Claims Made" Basis

3.1 - If commercial general or other liability insurance purchased by the Contractor has been issued on a "claims made" basis, the Contractor must comply with the following additional conditions:

- i. Agree to provide certificates of insurance evidencing the above coverages for a period of two years after final payment for the contract. Such certificates shall evidence a retroactive date, no later than the beginning of the Contractors' or Subcontractors' Work under this contract, or
- ii. Purchase an extended (minimum two years) reporting period endorsement for the policy or policies in force during the term of this contract and evidence the purchase of this extended reporting period endorsement by means of a certificate of insurance or a copy of the endorsement itself.

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Performance Bond

CONTRACTOR:
(Name, legal status and address)

SURETY:
(Name, legal status and principal place
of business)

OWNER:
(Name, legal status and address)

CONSTRUCTION CONTRACT

Date:
Amount: \$
Description:
(Name and location)

BOND
Date:
(Not earlier than Construction Contract Date)

Amount: \$
Modifications to this Bond: ☐ **NONE** ☐ **SEE SECTION 16**

CONTRACTOR AS PRINCIPAL
COMPAN (CORPORATE SEAL)
Y:

SIGNATU
RE:

NAME
AND
TITLE:

SURETY
COMPAN (CORPORATE SEAL)
Y:

SIGNATU
RE:

NAME
AND
TITLE:

IN ACCORDANCE WITH DRAWINGS AND SPECIFICATIONS PREPARED BY:
(HERE INSERT FULL NAME AND ADDRESS OR LEGAL TITLE OF ARCHITECT)

(Table deleted)

ADDITIONS AND DELETIONS:

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

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

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

Which contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

PERFORMANCE BOND

NOW THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Contractor shall promptly and faithfully perform said Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

The surety hereby waives notice of any alteration of extension of time made by the Owner.

Whenever Contractor shall be, and declare by Owner to be in default under the Contract, the Owner having performed Owner's obligations thereunder, the Surety may promptly remedy the default, or shall promptly

1. Complete the contract in accordance with its terms and conditions, or
2. Obtain a bid or bids for competing the Contract in accordance with its terms and conditions, and upon determination by Surety of the lowest responsible bidder, or, if the Owner elects, upon determination by the Owner and the Surety jointly of the lowest responsible bidder, arrange for a contract between such bidder and Owner, and make available as Work progresses (even though there should be a default or a succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the contract price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "balance of the contract price," as used in this paragraph, shall mean the total amount payable by Owner to Contractor under the Contract and any amendments thereto, less the amount properly paid by Owner to Contractor.

Any suit under this bond must be instituted before the expiration of two (2) years from the date on which final payment under the Contract falls due.

No right of action shall accrue on this bond to or for the use of any person or corporation other than the Owner named herein or the heirs, executors, administrators or successors of the Owner.

Signed and sealed this day of

(Witness)

(Principal)

(Seal)

(Witness)

(Title)

(Table deleted)(Paragraphs deleted)



AIA® Document A312™ – 2010

Payment Bond

CONTRACTOR:

(Name, legal status and address)

SURETY:

(Name, legal status and principal place of business)

OWNER:

(Name, legal status and address)

CONSTRUCTION CONTRACT

Date:

Amount: \$

Description:

(Name and location)

BOND

Date:

(Not earlier than Construction Contract Date)

Amount: \$

Modifications to this Bond: ☐ None ☐ See Section 18

CONTRACTOR AS PRINCIPAL

Company (Corporate Seal)

:

Signature

:

Name

and Title:

(Any additional signatures appear on the last page of this Payment Bond.)

SURETY

Company (Corporate Seal)

:

(Row deleted)

Signature

:

Name

and Title:

ADDITIONS AND DELETIONS:

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Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

Init.

Drawings and Specifications prepared by:
(Architect name and address)

§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.

§ 2 If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies and holds harmless the Owner from claims, demands, liens or suits by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.

Which contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

LABOR AND MATERIAL PAYMENT BOND

Now therefore, the condition of this obligation is such that, if Principal shall promptly make payment to all claimants as hereinafter defined. For all labor and material used or presumably required for use in the performance of the Contract, then this obligation shall be void: otherwise it shall remain in full force and effect, subject, however, to the following conditions:

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, used or reasonably required for use in the performance of the Contract, labor and material being construed to include that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental of equipment directly applicable to the Contract.
2. The above named Principal and Surety hereby jointly and severally agree with the Owner that every claimant as herein defined, who has not been paid in full before the expiration of a period of ninety (90) days after the date which the last of such claimant's work or labor was done or performed, or materials were furnished by such claimant, prosecute the suit for final judgment for such sum or sums as may be justly due claimant, and have execution thereon. The Owner shall not be liable for the payment of any costs or expenses of any such suit.
3. No suit or action shall be commenced hereunder by any claimant:
 - a) Unless claimant, other than on having a direct contract with the Principal, shall have given written notice to any two of the following: the Principal, the Owner, or the Surety above named, within ninety(90) days after such claimant did or performed the last of the work or labor, or furnished the last of the materials for which said claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished, or for whom the work or labor was done or performed. Such notice shall be served by mailing the same by registered mail or certified mail, postage prepaid, in an envelope addressed to the Principal, Owner or Surety, at any place where an office is regularly maintained for the transaction of business, or served in any manner in which legal process may be served in the state in which the aforesaid project is located, save that such service need not be made by a public officer.
 - b) After the expiration of one (1) year following the date on which Principal ceased Work on seaside Contract, it being understood, however, that if any limitation embodied in this bond is prohibited by any law controlling the construction hereof such limitation shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.
 - c) Other than in a state court of competent jurisdiction in and for the county or other political subdivision of the state in which the Project, or any part thereof, is situated, or in the United

States District Court for the district in which the Project, or any part thereof, is situated, and not elsewhere.

4. The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by Surety of mechanics' liens with may be filed of record against said improvement, whether or not claim for the amount of such lien be presented under and against this bond.

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL

Company: _____ (Corporate Seal)

SURETY

Company: _____ (Corporate Seal)

Signature: _____

Name and
Title:

Signature: _____

Name and
Title:

Address:

Address:

(Table deleted)(Paragraphs deleted)

AIA® Document A201® – 2007

General Conditions of the Contract for Construction

for the following PROJECT:

(Name and location or address)

THE OWNER:

(Name and address)

THE ARCHITECT:

(Name and address)

ADDITIONS AND DELETIONS:

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TABLE OF ARTICLES

1	GENERAL PROVISIONS
2	OWNER
3	CONTRACTOR
4	ARCHITECT
5	SUBCONTRACTORS
6	CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS
7	CHANGES IN THE WORK
8	TIME
9	PAYMENTS AND COMPLETION
10	PROTECTION OF PERSONS AND PROPERTY
11	INSURANCE AND BONDS
12	UNCOVERING AND CORRECTION OF WORK
13	MISCELLANEOUS PROVISIONS
14	TERMINATION OR SUSPENSION OF THE CONTRACT
15	CLAIMS AND DISPUTES

Init.

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User Notes:

(2001030211)

INDEX

(Numbers and Topics in Bold are Section Headings)

Acceptance of Nonconforming Work

9.6.6, 9.9.3, **12.3**

Acceptance of Work

9.6.6, 9.8.2, 9.9.3, 9.10.1, 9.10.3, **12.3**

Access to Work

3.16, 6.2.1, 12.1

Accident Prevention

10

Acts and Omissions

3.2, 3.3.2, 3.12.8, 3.18, 4.2.3, 8.3.1, 9.5.1, 10.2.5, 10.2.8, 13.4.2, 13.7.1, 14.1, 15.2

Addenda

1.1.1, 3.11.1

Additional Costs, Claims for

3.7.4, 3.7.5, 6.1.1, 7.3.7.5, 10.3, 15.1.4

Additional Inspections and Testing

9.4.2, 9.8.3, 12.2.1, **13.5**

Additional Insured

11.1.4

Additional Time, Claims for

3.2.4, 3.7.4, 3.7.5, 3.10.2, 8.3.2, **15.1.5**

Administration of the Contract

3.1.3, **4.2**, 9.4, 9.5

Advertisement or Invitation to Bid

1.1.1

Aesthetic Effect

4.2.13

Allowances

3.8, 7.3.8

All-risk Insurance

11.3.1, 11.3.1.1

Applications for Payment

4.2.5, 7.3.9, 9.2, **9.3**, 9.4, 9.5.1, 9.6.3, 9.7.1, 9.10, 11.1.3

Approvals

2.1.1, 2.2.2, 2.4, 3.1.3, 3.10.2, 3.12.8, 3.12.9, 3.12.10, 4.2.7, 9.3.2, 13.5.1

Arbitration

8.3.1, 11.3.10, 13.1.1, 15.3.2, **15.4**

ARCHITECT

4

Architect, Definition of

4.1.1

Architect, Extent of Authority

2.4.1, 3.12.7, 4.1, 4.2, 5.2, 6.3.1, 7.1.2, 7.3.7, 7.4, 9.2.1, 9.3.1, 9.4, 9.5, 9.6.3, 9.8, 9.10.1, 9.10.3, 12.1, 12.2.1, 13.5.1, 13.5.2, 14.2.2, 14.2.4, 15.1.3, 15.2.1

Architect, Limitations of Authority and Responsibility

2.1.1, 3.12.4, 3.12.8, 3.12.10, 4.1.2, 4.2.1, 4.2.2, 4.2.3, 4.2.6, 4.2.7, 4.2.10, 4.2.12, 4.2.13, 5.2.1, 7.4.1, 9.4.2, 9.5.3, 9.6.4, 15.1.3, 15.2

Architect's Additional Services and Expenses

2.4.1, 11.3.1.1, 12.2.1, 13.5.2, 13.5.3, 14.2.4

Architect's Administration of the Contract

3.1.3, 4.2, 3.7.4, 15.2, 9.4.1, 9.5

Architect's Approvals

2.4.1, 3.1.3, 3.5.1, 3.10.2, 4.2.7

Architect's Authority to Reject Work

3.5.1, 4.2.6, 12.1.2, 12.2.1

Architect's Copyright

1.1.7, 1.5

Architect's Decisions

3.7.4, 4.2.6, 4.2.7, 4.2.11, 4.2.12, 4.2.13, 4.2.14, 6.3.1, 7.3.7, 7.3.9, 8.1.3, 8.3.1, 9.2.1, 9.4.1, 9.5, 9.8.4, 9.9.1, 13.5.2, 15.2, 15.3

Architect's Inspections

3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.8.3, 9.9.2, 9.10.1, 13.5

Architect's Instructions

3.2.4, 3.3.1, 4.2.6, 4.2.7, 13.5.2

Architect's Interpretations

4.2.11, 4.2.12

Architect's Project Representative

4.2.10

Architect's Relationship with Contractor

1.1.2, 1.5, 3.1.3, 3.2.2, 3.2.3, 3.2.4, 3.3.1, 3.4.2, 3.5.1, 3.7.4, 3.7.5, 3.9.2, 3.9.3, 3.10, 3.11, 3.12, 3.16, 3.18, 4.1.2, 4.1.3, 4.2, 5.2, 6.2.2, 7, 8.3.1, 9.2, 9.3, 9.4, 9.5, 9.7, 9.8, 9.9, 10.2.6, 10.3, 11.3.7, 12, 13.4.2, 13.5, 15.2

Architect's Relationship with Subcontractors

1.1.2, 4.2.3, 4.2.4, 4.2.6, 9.6.3, 9.6.4, 11.3.7

Architect's Representations

9.4.2, 9.5.1, 9.10.1

Architect's Site Visits

3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.5.1, 9.9.2, 9.10.1, 13.5

Asbestos

10.3.1

Attorneys' Fees

3.18.1, 9.10.2, 10.3.3

Award of Separate Contracts

6.1.1, 6.1.2

Award of Subcontracts and Other Contracts for Portions of the Work

5.2

Basic Definitions

1.1

Bidding Requirements

1.1.1, 5.2.1, 11.4.1

Binding Dispute Resolution

9.7.1, 11.3.9, 11.3.10, 13.1.1, 15.2.5, 15.2.6.1, 15.3.1, 15.3.2, 15.4.1

Boiler and Machinery Insurance

11.3.2

Bonds, Lien

7.3.7.4, 9.10.2, 9.10.3

Bonds, Performance, and Payment

7.3.7.4, 9.6.7, 9.10.3, 11.3.9, **11.4**

Init.

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(2001030211)

Building Permit

3.7.1

Capitalization

1.3

Certificate of Substantial Completion

9.8.3, 9.8.4, 9.8.5

Certificates for Payment

4.2.1, 4.2.5, 4.2.9, 9.3.3, 9.4, 9.5, 9.6.1, 9.6.6, 9.7.1,

9.10.1, 9.10.3, 14.1.1.3, 14.2.4, 15.1.3

Certificates of Inspection, Testing or Approval

13.5.4

Certificates of Insurance

9.10.2, 11.1.3

Change Orders

1.1.1, 2.4.1, 3.4.2, 3.7.4, 3.8.2.3, 3.11.1, 3.12.8, 4.2.8,

5.2.3, 7.1.2, 7.1.3, 7.2, 7.3.2, 7.3.6, 7.3.9, 7.3.10, 8.3.1,

9.3.1.1, 9.10.3, 10.3.2, 11.3.1.2, 11.3.4, 11.3.9, 12.1.2,

15.1.3

Change Orders, Definition of

7.2.1

CHANGES IN THE WORK

2.2.1, 3.11, 4.2.8, 7, 7.2.1, 7.3.1, 7.4, 7.4.1, 8.3.1,

9.3.1.1, 11.3.9

Claims, Definition of

15.1.1

CLAIMS AND DISPUTES

3.2.4, 6.1.1, 6.3.1, 7.3.9, 9.3.3, 9.10.4, 10.3.3, 15, 15.4

Claims and Timely Assertion of Claims

15.4.1

Claims for Additional Cost

3.2.4, 3.7.4, 6.1.1, 7.3.9, 10.3.2, 15.1.4

Claims for Additional Time

3.2.4, 3.7.4.6.1.1, 8.3.2, 10.3.2, 15.1.5

Concealed or Unknown Conditions, Claims for

3.7.4

Claims for Damages

3.2.4, 3.18, 6.1.1, 8.3.3, 9.5.1, 9.6.7, 10.3.3, 11.1.1,

11.3.5, 11.3.7, 14.1.3, 14.2.4, 15.1.6

Claims Subject to Arbitration

15.3.1, 15.4.1

Cleaning Up

3.15, 6.3

Commencement of the Work, Conditions Relating to

2.2.1, 3.2.2, 3.4.1, 3.7.1, 3.10.1, 3.12.6, 5.2.1, 5.2.3,

6.2.2, 8.1.2, 8.2.2, 8.3.1, 11.1, 11.3.1, 11.3.6, 11.4.1,

15.1.4

Commencement of the Work, Definition of

8.1.2

Communications Facilitating Contract

Administration

3.9.1, 4.2.4

Completion, Conditions Relating to

3.4.1, 3.11, 3.15, 4.2.2, 4.2.9, 8.2, 9.4.2, 9.8, 9.9.1,

9.10, 12.2, 13.7, 14.1.2

COMPLETION, PAYMENTS AND

9

Completion, Substantial

4.2.9, 8.1.1, 8.1.3, 8.2.3, 9.4.2, 9.8, 9.9.1, 9.10.3, 12.2,

13.7

Compliance with Laws

1.6.1, 3.2.3, 3.6, 3.7, 3.12.10, 3.13, 4.1.1, 9.6.4, 10.2.2,

11.1, 11.3, 13.1, 13.4, 13.5.1, 13.5.2, 13.6, 14.1.1,

14.2.1.3, 15.2.8, 15.4.2, 15.4.3

Concealed or Unknown Conditions

3.7.4, 4.2.8, 8.3.1, 10.3

Conditions of the Contract

1.1.1, 6.1.1, 6.1.4

Consent, Written

3.4.2, 3.7.4, 3.12.8, 3.14.2, 4.1.2, 9.3.2, 9.8.5, 9.9.1,

9.10.2, 9.10.3, 11.3.1, 13.2, 13.4.2, 15.4.4.2

Consolidation or Joinder

15.4.4

**CONSTRUCTION BY OWNER OR BY
SEPARATE CONTRACTORS**

1.1.4, 6

Construction Change Directive, Definition of

7.3.1

Construction Change Directives

1.1.1, 3.4.2, 3.12.8, 4.2.8, 7.1.1, 7.1.2, 7.1.3, 7.3,

9.3.1.1

Construction Schedules, Contractor's

3.10, 3.12.1, 3.12.2, 6.1.3, 15.1.5.2

Contingent Assignment of Subcontracts

5.4, 14.2.2.2

Continuing Contract Performance

15.1.3

Contract, Definition of

1.1.2

**CONTRACT, TERMINATION OR
SUSPENSION OF THE**

5.4.1.1, 11.3.9, 14

Contract Administration

3.1.3, 4, 9.4, 9.5

Contract Award and Execution, Conditions Relating
to

3.7.1, 3.10, 5.2, 6.1, 11.1.3, 11.3.6, 11.4.1

Contract Documents, The

1.1.1

Contract Documents, Copies Furnished and Use of

1.5.2, 2.2.5, 5.3

Contract Documents, Definition of

1.1.1

Contract Sum

3.7.4, 3.8, 5.2.3, 7.2, 7.3, 7.4, 9.1, 9.4.2, 9.5.1.4, 9.6.7,

9.7, 10.3.2, 11.3.1, 14.2.4, 14.3.2, 15.1.4, 15.2.5

Contract Sum, Definition of

9.1

Contract Time

3.7.4, 3.7.5, 3.10.2, 5.2.3, 7.2.1.3, 7.3.1, 7.3.5, 7.4,

8.1.1, 8.2.1, 8.3.1, 9.5.1, 9.7.1, 10.3.2, 12.1.1, 14.3.2,

15.1.5.1, 15.2.5

Contract Time, Definition of

8.1.1

Init.

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CONTRACTOR

3

Contractor, Definition of

3.1, 6.1.2

Contractor's Construction Schedules

3.10, 3.12.1, 3.12.2, 6.1.3, 15.1.5.2

Contractor's Employees

3.3.2, 3.4.3, 3.8.1, 3.9, 3.18.2, 4.2.3, 4.2.6, 10.2, 10.3, 11.1.1, 11.3.7, 14.1, 14.2.1.1,

Contractor's Liability Insurance

11.1

Contractor's Relationship with Separate Contractors and Owner's Forces

3.12.5, 3.14.2, 4.2.4, 6, 11.3.7, 12.1.2, 12.2.4

Contractor's Relationship with Subcontractors

1.2.2, 3.3.2, 3.18.1, 3.18.2, 5, 9.6.2, 9.6.7, 9.10.2, 11.3.1.2, 11.3.7, 11.3.8

Contractor's Relationship with the Architect

1.1.2, 1.5, 3.1.3, 3.2.2, 3.2.3, 3.2.4, 3.3.1, 3.4.2, 3.5.1, 3.7.4, 3.10, 3.11, 3.12, 3.16, 3.18, 4.1.3, 4.2, 5.2, 6.2.2, 7, 8.3.1, 9.2, 9.3, 9.4, 9.5, 9.7, 9.8, 9.9, 10.2.6, 10.3, 11.3.7, 12, 13.5, 15.1.2, 15.2.1

Contractor's Representations

3.2.1, 3.2.2, 3.5.1, 3.12.6, 6.2.2, 8.2.1, 9.3.3, 9.8.2

Contractor's Responsibility for Those Performing the Work

3.3.2, 3.18, 5.3.1, 6.1.3, 6.2, 9.5.1, 10.2.8

Contractor's Review of Contract Documents

3.2

Contractor's Right to Stop the Work

9.7

Contractor's Right to Terminate the Contract

14.1, 15.1.6

Contractor's Submittals

3.10, 3.11, 3.12.4, 4.2.7, 5.2.1, 5.2.3, 9.2, 9.3, 9.8.2, 9.8.3, 9.9.1, 9.10.2, 9.10.3, 11.1.3, 11.4.2

Contractor's Superintendent

3.9, 10.2.6

Contractor's Supervision and Construction

Procedures

1.2.2, 3.3, 3.4, 3.12.10, 4.2.2, 4.2.7, 6.1.3, 6.2.4, 7.1.3, 7.3.5, 7.3.7, 8.2, 10, 12, 14, 15.1.3

Contractual Liability Insurance

11.1.1.8, 11.2

Coordination and Correlation

1.2, 3.2.1, 3.3.1, 3.10, 3.12.6, 6.1.3, 6.2.1

Copies Furnished of Drawings and Specifications

1.5, 2.2.5, 3.11

Copyrights

1.5, 3.17

Correction of Work

2.3, 2.4, 3.7.3, 9.4.2, 9.8.2, 9.8.3, 9.9.1, 12.1.2, 12.2

Correlation and Intent of the Contract Documents

1.2

Cost, Definition of

7.3.7

Costs

2.4.1, 3.2.4, 3.7.3, 3.8.2, 3.15.2, 5.4.2, 6.1.1, 6.2.3, 7.3.3.3, 7.3.7, 7.3.8, 7.3.9, 9.10.2, 10.3.2, 10.3.6, 11.3, 12.1.2, 12.2.1, 12.2.4, 13.5, 14

Cutting and Patching

3.14, 6.2.5

Damage to Construction of Owner or Separate Contractors

3.14.2, 6.2.4, 10.2.1.2, 10.2.5, 10.4, 11.1.1, 11.3, 12.2.4

Damage to the Work

3.14.2, 9.9.1, 10.2.1.2, 10.2.5, 10.4.1, 11.3.1, 12.2.4

Damages, Claims for

3.2.4, 3.18, 6.1.1, 8.3.3, 9.5.1, 9.6.7, 10.3.3, 11.1.1, 11.3.5, 11.3.7, 14.1.3, 14.2.4, 15.1.6

Damages for Delay

6.1.1, 8.3.3, 9.5.1.6, 9.7, 10.3.2

Date of Commencement of the Work, Definition of

8.1.2

Date of Substantial Completion, Definition of

8.1.3

Day, Definition of

8.1.4

Decisions of the Architect

3.7.4, 4.2.6, 4.2.7, 4.2.11, 4.2.12, 4.2.13, 15.2, 6.3, 7.3.7, 7.3.9, 8.1.3, 8.3.1, 9.2.1, 9.4, 9.5.1, 9.8.4, 9.9.1, 13.5.2, 14.2.2, 14.2.4, 15.1, 15.2

Decisions to Withhold Certification

9.4.1, 9.5, 9.7, 14.1.1.3

Defective or Nonconforming Work, Acceptance, Rejection and Correction of

2.3.1, 2.4.1, 3.5.1, 4.2.6, 6.2.5, 9.5.1, 9.5.2, 9.6.6, 9.8.2, 9.9.3, 9.10.4, 12.2.1

Defective Work, Definition of

3.5.1

Definitions

1.1, 2.1.1, 3.1.1, 3.5.1, 3.12.1, 3.12.2, 3.12.3, 4.1.1, 15.1.1, 5.1, 6.1.2, 7.2.1, 7.3.1, 8.1, 9.1, 9.8.1

Delays and Extensions of Time

3.2., 3.7.4, 5.2.3, 7.2.1, 7.3.1, 7.4.1, 8.3, 9.5.1, 9.7.1, 10.3.2, 10.4.1, 14.3.2, 15.1.5, 15.2.5

Disputes

6.3.1, 7.3.9, 15.1, 15.2

Documents and Samples at the Site

3.11

Drawings, Definition of

1.1.5

Drawings and Specifications, Use and Ownership of

3.11

Effective Date of Insurance

8.2.2, 11.1.2

Emergencies

10.4, 14.1.1.2, 15.1.4

Employees, Contractor's

3.3.2, 3.4.3, 3.8.1, 3.9, 3.18.2, 4.2.3, 4.2.6, 10.2,

10.3.3, 11.1.1, 11.3.7, 14.1, 14.2.1.1

Init.

Equipment, Labor, Materials or
1.1.3, 1.1.6, 3.4, 3.5.1, 3.8.2, 3.8.3, 3.12, 3.13.1,
3.15.1, 4.2.6, 4.2.7, 5.2.1, 6.2.1, 7.3.7, 9.3.2, 9.3.3,
9.5.1.3, 9.10.2, 10.2.1, 10.2.4, 14.2.1.1, 14.2.1.2
Execution and Progress of the Work
1.1.3, 1.2.1, 1.2.2, 2.2.3, 2.2.5, 3.1, 3.3.1, 3.4.1, 3.5.1,
3.7.1, 3.10.1, 3.12, 3.14, 4.2, 6.2.2, 7.1.3, 7.3.5, 8.2,
9.5.1, 9.9.1, 10.2, 10.3, 12.2, 14.2, 14.3.1, 15.1.3
Extensions of Time
3.2.4, 3.7.4, 5.2.3, 7.2.1, 7.3, 7.4.1, 9.5.1, 9.7.1, 10.3.2,
10.4.1, 14.3, 15.1.5, 15.2.5

Failure of Payment

9.5.1.3, 9.7, 9.10.2, 13.6, 14.1.1.3, 14.2.1.2

Faulty Work

(See Defective or Nonconforming Work)

Final Completion and Final Payment

4.2.1, 4.2.9, 9.8.2, 9.10, 11.1.2, 11.1.3, 11.3.1, 11.3.5,
12.3.1, 14.2.4, 14.4.3

Financial Arrangements, Owner's

2.2.1, 13.2.2, 14.1.1.4

Fire and Extended Coverage Insurance

11.3.1.1

GENERAL PROVISIONS

1

Governing Law

13.1

Guarantees (See Warranty)

Hazardous Materials

10.2.4, 10.3

Identification of Subcontractors and Suppliers

5.2.1

Indemnification

3.17.1, 3.18, 9.10.2, 10.3.3, 10.3.5, 10.3.6, 11.3.1.2,
11.3.7

Information and Services Required of the Owner

2.1.2, 2.2, 3.2.2, 3.12.4, 3.12.10, 6.1.3, 6.1.4, 6.2.5,
9.6.1, 9.6.4, 9.9.2, 9.10.3, 10.3.3, 11.2, 11.4, 13.5.1,
13.5.2, 14.1.1.4, 14.1.4, 15.1.3

Initial Decision

15.2

Initial Decision Maker, Definition of

1.1.8

Initial Decision Maker, Decisions

14.2.2, 14.2.4, 15.2.1, 15.2.2, 15.2.3, 15.2.4, 15.2.5

Initial Decision Maker, Extent of Authority

14.2.2, 14.2.4, 15.1.3, 15.2.1, 15.2.2, 15.2.3, 15.2.4,
15.2.5

Injury or Damage to Person or Property

10.2.8, 10.4.1

Inspections

3.1.3, 3.3.3, 3.7.1, 4.2.2, 4.2.6, 4.2.9, 9.4.2, 9.8.3,
9.9.2, 9.10.1, 12.2.1, 13.5

Instructions to Bidders

1.1.1

Instructions to the Contractor

3.2.4, 3.3.1, 3.8.1, 5.2.1, 7, 8.2.2, 12, 13.5.2

Instruments of Service, Definition of

1.1.7

Insurance

3.18.1, 6.1.1, 7.3.7, 9.3.2, 9.8.4, 9.9.1, 9.10.2, 11

Insurance, Boiler and Machinery

11.3.2

Insurance, Contractor's Liability

11.1

Insurance, Effective Date of

8.2.2, 11.1.2

Insurance, Loss of Use

11.3.3

Insurance, Owner's Liability

11.2

Insurance, Property

10.2.5, 11.3

Insurance, Stored Materials

9.3.2, 11.4.1.4

INSURANCE AND BONDS

11

Insurance Companies, Consent to Partial Occupancy

9.9.1, 11.4.1.5

Insurance Companies, Settlement with

11.4.10

Intent of the Contract Documents

1.2.1, 4.2.7, 4.2.12, 4.2.13, 7.4

Interest

13.6

Interpretation

1.2.3, 1.4, 4.1.1, 5.1, 6.1.2, 15.1.1

Interpretations, Written

4.2.11, 4.2.12, 15.1.4

Judgment on Final Award

15.4.2

Labor and Materials, Equipment

1.1.3, 1.1.6, 3.4, 3.5.1, 3.8.2, 3.8.3, 3.12, 3.13, 3.15.1,
4.2.6, 4.2.7, 5.2.1, 6.2.1, 7.3.7, 9.3.2, 9.3.3, 9.5.1.3,
9.10.2, 10.2.1, 10.2.4, 14.2.1.1, 14.2.1.2

Labor Disputes

8.3.1

Laws and Regulations

1.5, 3.2.3, 3.6, 3.7, 3.12.10, 3.13.1, 4.1.1, 9.6.4, 9.9.1,
10.2.2, 11.1.1, 11.3, 13.1.1, 13.4, 13.5.1, 13.5.2,
13.6.1, 14, 15.2.8, 15.4

Liens

2.1.2, 9.3.3, 9.10.2, 9.10.4, 15.2.8

Limitations, Statutes of

12.2.5, 13.7, 15.4.1.1

Limitations of Liability

2.3.1, 3.2.2, 3.5.1, 3.12.10, 3.17.1, 3.18.1, 4.2.6, 4.2.7,
4.2.12, 6.2.2, 9.4.2, 9.6.4, 9.6.7, 10.2.5, 10.3.3, 11.1.2,
11.2, 11.3.7, 12.2.5, 13.4.2

Limitations of Time

2.1.2, 2.2, 2.4, 3.2.2, 3.10, 3.11, 3.12.5, 3.15.1, 4.2.7,
5.2, 5.3.1, 5.4.1, 6.2.4, 7.3, 7.4, 8.2, 9.2.1, 9.3.1, 9.3.3,
9.4.1, 9.5, 9.6, 9.7.1, 9.8, 9.9, 9.10, 11.1.3, 11.3.1.5,
11.3.6, 11.3.10, 12.2, 13.5, 13.7, 14, 15

Init.

Loss of Use Insurance

11.3.3

Material Suppliers

1.5, 3.12.1, 4.2.4, 4.2.6, 5.2.1, 9.3, 9.4.2, 9.6, 9.10.5

Materials, Hazardous

10.2.4, 10.3

Materials, Labor, Equipment and

1.1.3, 1.1.6, 1.5.1, 3.4.1, 3.5.1, 3.8.2, 3.8.3, 3.12, 3.13.1, 3.15.1, 4.2.6, 4.2.7, 5.2.1, 6.2.1, 7.3.7, 9.3.2, 9.3.3, 9.5.1.3, 9.10.2, 10.2.1.2, 10.2.4, 14.2.1.1, 14.2.1.2

Means, Methods, Techniques, Sequences and Procedures of Construction

3.3.1, 3.12.10, 4.2.2, 4.2.7, 9.4.2

Mechanic's Lien

2.1.2, 15.2.8

Mediation

8.3.1, 10.3.5, 10.3.6, 15.2.1, 15.2.5, 15.2.6, 15.3, 15.4.1

Minor Changes in the Work

1.1.1, 3.12.8, 4.2.8, 7.1, 7.4

MISCELLANEOUS PROVISIONS

13

Modifications, Definition of

1.1.1

Modifications to the Contract

1.1.1, 1.1.2, 3.11, 4.1.2, 4.2.1, 5.2.3, 7, 8.3.1, 9.7.1, 10.3.2, 11.3.1

Mutual Responsibility

6.2

Nonconforming Work, Acceptance of

9.6.6, 9.9.3, 12.3

Nonconforming Work, Rejection and Correction of

2.3.1, 2.4.1, 3.5.1, 4.2.6, 6.2.4, 9.5.1, 9.8.2, 9.9.3, 9.10.4, 12.2.1

Notice

2.2.1, 2.3.1, 2.4.1, 3.2.4, 3.3.1, 3.7.2, 3.12.9, 5.2.1, 9.7.1, 9.10, 10.2.2, 11.1.3, 11.4.6, 12.2.2.1, 13.3, 13.5.1, 13.5.2, 14.1, 14.2, 15.2.8, 15.4.1

Notice, Written

2.3.1, 2.4.1, 3.3.1, 3.9.2, 3.12.9, 3.12.10, 5.2.1, 9.7.1, 9.10, 10.2.2, 10.3, 11.1.3, 11.3.6, 12.2.2.1, 13.3, 14, 15.2.8, 15.4.1

Notice of Claims

3.7.4, 4.5, 10.2.8, 15.1.2, 15.4

Notice of Testing and Inspections

13.5.1, 13.5.2

Observations, Contractor's

3.2, 3.7.4

Occupancy

2.2.2, 9.6.6, 9.8, 11.3.1.5

Orders, Written

1.1.1, 2.3, 3.9.2, 7, 8.2.2, 11.3.9, 12.1, 12.2.2.1, 13.5.2, 14.3.1

OWNER

2

Owner, Definition of

2.1.1

Owner, Information and Services Required of the

2.1.2, 2.2, 3.2.2, 3.12.10, 6.1.3, 6.1.4, 6.2.5, 9.3.2, 9.6.1, 9.6.4, 9.9.2, 9.10.3, 10.3.3, 11.2, 11.3, 13.5.1, 13.5.2, 14.1.1.4, 14.1.4, 15.1.3

Owner's Authority

1.5, 2.1.1, 2.3.1, 2.4.1, 3.4.2, 3.8.1, 3.12.10, 3.14.2, 4.1.2, 4.1.3, 4.2.4, 4.2.9, 5.2.1, 5.2.4, 5.4.1, 6.1, 6.3.1, 7.2.1, 7.3.1, 8.2.2, 8.3.1, 9.3.1, 9.3.2, 9.5.1, 9.6.4, 9.9.1, 9.10.2, 10.3.2, 11.1.3, 11.3.3, 11.3.10, 12.2.2, 12.3.1, 13.2.2, 14.3, 14.4, 15.2.7

Owner's Financial Capability

2.2.1, 13.2.2, 14.1.1.4

Owner's Liability Insurance

11.2

Owner's Loss of Use Insurance

11.3.3

Owner's Relationship with Subcontractors

1.1.2, 5.2, 5.3, 5.4, 9.6.4, 9.10.2, 14.2.2

Owner's Right to Carry Out the Work

2.4, 14.2.2

Owner's Right to Clean Up

6.3

Owner's Right to Perform Construction and to Award Separate Contracts

6.1

Owner's Right to Stop the Work

2.3

Owner's Right to Suspend the Work

14.3

Owner's Right to Terminate the Contract

14.2

Ownership and Use of Drawings, Specifications and Other Instruments of Service

1.1.1, 1.1.6, 1.1.7, 1.5, 2.2.5, 3.2.2, 3.11.1, 3.17.1, 4.2.12, 5.3.1

Partial Occupancy or Use

9.6.6, 9.9, 11.3.1.5

Patching, Cutting and

3.14, 6.2.5

Patents

3.17

Payment, Applications for

4.2.5, 7.3.9, 9.2.1, 9.3, 9.4, 9.5, 9.6.3, 9.7.1, 9.8.5, 9.10.1, 14.2.3, 14.2.4, 14.4.3

Payment, Certificates for

4.2.5, 4.2.9, 9.3.3, 9.4, 9.5, 9.6.1, 9.6.6, 9.7.1, 9.10.1, 9.10.3, 13.7, 14.1.1.3, 14.2.4

Payment, Failure of

9.5.1.3, 9.7, 9.10.2, 13.6, 14.1.1.3, 14.2.1.2

Payment, Final

4.2.1, 4.2.9, 9.8.2, 9.10, 11.1.2, 11.1.3, 11.4.1, 11.4.5, 12.3.1, 13.7, 14.2.4, 14.4.3

Payment Bond, Performance Bond and

7.3.7.4, 9.6.7, 9.10.3, 11.4.9, 11.4

Init.

Payments, Progress

9.3, 9.6, 9.8.5, 9.10.3, 13.6, 14.2.3, 15.1.3

PAYMENTS AND COMPLETION

9

Payments to Subcontractors

5.4.2, 9.5.1.3, 9.6.2, 9.6.3, 9.6.4, 9.6.7, 11.4.8, 14.2.1.2

PCB

10.3.1

Performance Bond and Payment Bond

7.3.7.4, 9.6.7, 9.10.3, 11.4.9, 11.4

Permits, Fees, Notices and Compliance with Laws

2.2.2, 3.7, 3.13, 7.3.7.4, 10.2.2

PERSONS AND PROPERTY, PROTECTION OF

10

Polychlorinated Biphenyl

10.3.1

Product Data, Definition of

3.12.2

Product Data and Samples, Shop Drawings

3.11, 3.12, 4.2.7

Progress and Completion

4.2.2, 8.2, 9.8, 9.9.1, 14.1.4, 15.1.3

Progress Payments

9.3, 9.6, 9.8.5, 9.10.3, 13.6, 14.2.3, 15.1.3

Project, Definition of the

1.1.4

Project Representatives

4.2.10

Property Insurance

10.2.5, 11.3

PROTECTION OF PERSONS AND PROPERTY

10

Regulations and Laws

1.5, 3.2.3, 3.6, 3.7, 3.12.10, 3.13, 4.1.1, 9.6.4, 9.9.1, 10.2.2, 11.1, 11.4, 13.1, 13.4, 13.5.1, 13.5.2, 13.6, 14, 15.2.8, 15.4

Rejection of Work

3.5.1, 4.2.6, 12.2.1

Releases and Waivers of Liens

9.10.2

Representations

3.2.1, 3.5.1, 3.12.6, 6.2.2, 8.2.1, 9.3.3, 9.4.2, 9.5.1, 9.8.2, 9.10.1

Representatives

2.1.1, 3.1.1, 3.9, 4.1.1, 4.2.1, 4.2.2, 4.2.10, 5.1.1, 5.1.2, 13.2.1

Responsibility for Those Performing the Work

3.3.2, 3.18, 4.2.3, 5.3.1, 6.1.3, 6.2, 6.3, 9.5.1, 10

Retainage

9.3.1, 9.6.2, 9.8.5, 9.9.1, 9.10.2, 9.10.3

Review of Contract Documents and Field

Conditions by Contractor

3.2, 3.12.7, 6.1.3

Review of Contractor's Submittals by Owner and Architect

3.10.1, 3.10.2, 3.11, 3.12, 4.2, 5.2, 6.1.3, 9.2, 9.8.2

Review of Shop Drawings, Product Data and Samples by Contractor

3.12

Rights and Remedies

1.1.2, 2.3, 2.4, 3.5.1, 3.7.4, 3.15.2, 4.2.6, 4.5, 5.3, 5.4, 6.1, 6.3, 7.3.1, 8.3, 9.5.1, 9.7, 10.2.5, 10.3, 12.2.2, 12.2.4, 13.4, 14, 15.4

Royalties, Patents and Copyrights

3.17

Rules and Notices for Arbitration

15.4.1

Safety of Persons and Property

10.2, 10.4

Safety Precautions and Programs

3.3.1, 4.2.2, 4.2.7, 5.3.1, 10.1, 10.2, 10.4

Samples, Definition of

3.12.3

Samples, Shop Drawings, Product Data and

3.11, 3.12, 4.2.7

Samples at the Site, Documents and

3.11

Schedule of Values

9.2, 9.3.1

Schedules, Construction

3.10, 3.12.1, 3.12.2, 6.1.3, 15.1.5.2

Separate Contracts and Contractors

1.1.4, 3.12.5, 3.14.2, 4.2.4, 4.2.7, 6, 8.3.1, 11.4.7, 12.1.2

Shop Drawings, Definition of

3.12.1

Shop Drawings, Product Data and Samples

3.11, 3.12, 4.2.7

Site, Use of

3.13, 6.1.1, 6.2.1

Site Inspections

3.2.2, 3.3.3, 3.7.1, 3.7.4, 4.2, 9.4.2, 9.10.1, 13.5

Site Visits, Architect's

3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.5.1, 9.9.2, 9.10.1, 13.5

Special Inspections and Testing

4.2.6, 12.2.1, 13.5

Specifications, Definition of the

1.1.6

Specifications, The

1.1.1, 1.1.6, 1.2.2, 1.5, 3.11, 3.12.10, 3.17, 4.2.14

Statute of Limitations

13.7, 15.4.1.1

Stopping the Work

2.3, 9.7, 10.3, 14.1

Stored Materials

6.2.1, 9.3.2, 10.2.1.2, 10.2.4, 11.4.1.4

Subcontractor, Definition of

5.1.1

SUBCONTRACTORS

5

Subcontractors, Work by

1.2.2, 3.3.2, 3.12.1, 4.2.3, 5.2.3, 5.3, 5.4, 9.3.1.2, 9.6.7

Init.

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(2001030211)

Subcontractual Relations

5.3, 5.4, 9.3.1.2, 9.6, 9.10, 10.2.1, 11.4.7, 11.4.8, 14.1, 14.2.1

Submittals

3.10, 3.11, 3.12, 4.2.7, 5.2.1, 5.2.3, 7.3.7, 9.2, 9.3, 9.8, 9.9.1, 9.10.2, 9.10.3, 11.1.3

Submittal Schedule

3.10.2, 3.12.5, 4.2.7

Subrogation, Waivers of

6.1.1, 11.4.5, 11.3.7

Substantial Completion

4.2.9, 8.1.1, 8.1.3, 8.2.3, 9.4.2, 9.8, 9.9.1, 9.10.3, 12.2, 13.7

Substantial Completion, Definition of

9.8.1

Substitution of Subcontractors

5.2.3, 5.2.4

Substitution of Architect

4.1.3

Substitutions of Materials

3.4.2, 3.5.1, 7.3.8

Sub-subcontractor, Definition of

5.1.2

Subsurface Conditions

3.7.4

Successors and Assigns

13.2

Superintendent

3.9, 10.2.6

Supervision and Construction Procedures

1.2.2, 3.3, 3.4, 3.12.10, 4.2.2, 4.2.7, 6.1.3, 6.2.4, 7.1.3, 7.3.7, 8.2, 8.3.1, 9.4.2, 10, 12, 14, 15.1.3

Surety

5.4.1.2, 9.8.5, 9.10.2, 9.10.3, 14.2.2, 15.2.7

Surety, Consent of

9.10.2, 9.10.3

Surveys

2.2.3

Suspension by the Owner for Convenience

14.3

Suspension of the Work

5.4.2, 14.3

Suspension or Termination of the Contract

5.4.1.1, 11.4.9, 14

Taxes

3.6, 3.8.2.1, 7.3.7.4

Termination by the Contractor

14.1, 15.1.6

Termination by the Owner for Cause

5.4.1.1, 14.2, 15.1.6

Termination by the Owner for Convenience

14.4

Termination of the Architect

4.1.3

Termination of the Contractor

14.2.2

TERMINATION OR SUSPENSION OF THE CONTRACT

14

Tests and Inspections

3.1.3, 3.3.3, 4.2.2, 4.2.6, 4.2.9, 9.4.2, 9.8.3, 9.9.2, 9.10.1, 10.3.2, 11.4.1.1, 12.2.1, 13.5

TIME

8

Time, Delays and Extensions of

3.2.4, 3.7.4, 5.2.3, 7.2.1, 7.3.1, 7.4.1, 8.3, 9.5.1, 9.7.1, 10.3.2, 10.4.1, 14.3.2, 15.1.5, 15.2.5

Time Limits

2.1.2, 2.2, 2.4, 3.2.2, 3.10, 3.11, 3.12.5, 3.15.1, 4.2, 4.4, 4.5, 5.2, 5.3, 5.4, 6.2.4, 7.3, 7.4, 8.2, 9.2, 9.3.1, 9.3.3, 9.4.1, 9.5, 9.6, 9.7, 9.8, 9.9, 9.10, 11.1.3, 11.4.1.5, 11.4.6, 11.4.10, 12.2, 13.5, 13.7, 14, 15.1.2, 15.4

Time Limits on Claims

3.7.4, 10.2.8, 13.7, 15.1.2

Title to Work

9.3.2, 9.3.3

Transmission of Data in Digital Form

1.6

UNCOVERING AND CORRECTION OF WORK

12

Uncovering of Work

12.1

Unforeseen Conditions, Concealed or Unknown

3.7.4, 8.3.1, 10.3

Unit Prices

7.3.3.2, 7.3.4

Use of Documents

1.1.1, 1.5, 2.2.5, 3.12.6, 5.3

Use of Site

3.13, 6.1.1, 6.2.1

Values, Schedule of

9.2, 9.3.1

Waiver of Claims by the Architect

13.4.2

Waiver of Claims by the Contractor

9.10.5, 11.4.7, 13.4.2, 15.1.6

Waiver of Claims by the Owner

9.9.3, 9.10.3, 9.10.4, 11.4.3, 11.4.5, 11.4.7, 12.2.2.1, 13.4.2, 14.2.4, 15.1.6

Waiver of Consequential Damages

14.2.4, 15.1.6

Waiver of Liens

9.10.2, 9.10.4

Waivers of Subrogation

6.1.1, 11.4.5, 11.3.7

Warranty

3.5, 4.2.9, 9.3.3, 9.8.4, 9.9.1, 9.10.4, 12.2.2, 13.7.1

Weather Delays

15.1.5.2

Work, Definition of

1.1.3

Init.

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(2001030211)

Written Consent

1.5.2, 3.4.2, 3.7.4, 3.12.8, 3.14.2, 4.1.2, 9.3.2, 9.8.5,
9.9.1, 9.10.2, 9.10.3, 11.4.1, 13.2, 13.4.2, 15.4.4.2

Written Interpretations

4.2.11, 4.2.12

Written Notice

2.3, 2.4, 3.3.1, 3.9, 3.12.9, 3.12.10, 5.2.1, 8.2.2, 9.7,
9.10, 10.2.2, 10.3, 11.1.3, 11.4.6, 12.2.2, 12.2.4, **13.3**,
14, 15.4.1

Written Orders

1.1.1, 2.3, 3.9, 7, 8.2.2, 11.4.9, 12.1, 12.2, 13.5.2,
14.3.1, 15.1.2

Init.

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 BASIC DEFINITIONS

§ 1.1.1 THE CONTRACT DOCUMENTS

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

§ 1.1.2 THE CONTRACT

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

§ 1.1.3 THE WORK

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

§ 1.1.4 THE PROJECT

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

§ 1.1.5 THE DRAWINGS

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

§ 1.1.6 THE SPECIFICATIONS

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

§ 1.1.7 INSTRUMENTS OF SERVICE

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

§ 1.1.8 INITIAL DECISION MAKER

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

§ 1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

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

Init.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade. Wherever in the Specifications there appears a reference to a "Contractor" or the "Subcontractor" or a reference to a Contractor, installer or supplier of a particular trade, or for a particular type of Work, such reference, regardless of the language hereof shall be deemed a reference to the Contractor and shall not be construed as relieving the Contractor from the duty to perform all of the Work and other obligations provided under the Contract.

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

§ 1.3 CAPITALIZATION

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

§ 1.4 INTERPRETATION

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

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

§ 1.5.1 The Drawings, Specifications and other documents, including those in electronic form, prepared by the Architect and the Architect's consultants are Instruments of Service through which the Work to be executed by the Contractor is described. The Contractor may retain one record set. Neither the Contractor nor any Subcontractor, Sub-subcontractor or material or equipment supplier shall own or claim a copyright in the Drawings.. Unless otherwise indicated, the Architect shall be deemed the author of the Specifications and other documents prepared by the Architect. All copies of Instruments of Service, except the Contractor's record set, shall be returned or suitably accounted for to the Architect, on request, upon completion of the Work. The Drawings, Specifications and other documents prepared by the Architect and the Architect's consultants, and copies thereof furnished to the Contractor, are for use solely with respect to this Project. They are not to be used by the Contractor or any Subcontractor, Sub-subcontractor or material or equipment supplier on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect's consultants. The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce applicable portions of the Drawings, Specifications and other documents prepared by the Architect and the Architect's consultants appropriate to and for use in the execution of their Work under the Contract Documents. All copies made under this authorization shall bear the statutory copyright notice, if any, shown on the Drawings, Specifications and other documents prepared by the Architect and the Architect's consultants. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Owners copyrights or other reserved rights. The Drawings, Specifications, and other documents are and shall always be the property of the Owner, and the Owner shall retain all common law, statutory, and other reserved rights in addition to copyright.

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

§ 1.6 TRANSMISSION OF DATA IN DIGITAL FORM

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

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ARTICLE 2 OWNER

§ 2.1 GENERAL

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

§ 2.1.2 The Contractor understands that the Board of Education of Howard County, Maryland, is a public agency, and no mechanics' liens are permitted against its property.

§ 2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

§ 2.2.1 Deleted

§ 2.2.2 Except for permits and fees, including those required under Section 3.7.1, which are the responsibility of the Contractor under the Contract Documents, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction,

§ 2.2.3 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site to the extent reasonably required for execution of the Work and requested by the Contractor in writing within one (1) month of the date of Contract. The Owner does not warrant or undertake responsibility for the location of utilities or the accuracy of tests concerning the soil, surface, and subsurface conditions.

§ 2.2.4 Information or services under the Owner's control shall, be furnished by the Owner after receipt from the Contractor of a written request for such information or services..

(Paragraph deleted)

§ 2.2.5 Unless otherwise provided in the Contract Documents, the Contractor will be furnished, free of charge, Three (3) sets of copies of Drawings and Project Manuals as are reasonably necessary for execution of the Work.

§ 2.3 OWNER'S RIGHT TO STOP THE WORK

§ 2.3.1 If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3. This right shall be in addition to an not in restriction or derogation of the Owners' rights under Section 4.3.4 and under Article 14 of the General Conditions.

§ 2.3.2 If unforeseen conditions occur or are encountered which may substantially impair the quality of the Work unless the Work is suspended, the Owner may suspend the Work by notice in writing to the Contractor. In the event of such a suspension, Contractor shall be entitled only to payment for work actually completed up to and including the date on which the work was suspended by the Owner. In any event where the Contractor reasonably determines that a suspension is required in such circumstances, the Contractor shall promptly notify in writing the Owner and Architect of such determination. In the event the Owner agrees to suspend the work, the Contractor shall only be entitled to payment for work actually completed up to and including the date on which the work was suspended.

§ 2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

§ 2.4.1 If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a seven-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, upon written notice to the Contractor at the

Init.

conclusion of the above referenced seven day period without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect or failure. , upon written notice to the Contractor at the conclusion of the above referenced seven-day period, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the cost of correcting such deficiencies, including compensation for the Architect's and their respective consultants' additional services and expenses made necessary by such default, neglect or failure. At the election of the Owner, the first written notice to the Contractor to correct defective work may also contain written notice that if the defective work or other specified cause for termination is not corrected, cured, or remedied to Owner's satisfaction, then Owner may issue a written notice to Contractor at the end of the above reference seven (7) day period terminating the Contractor's employment under the Contract pursuant to Article 14 of these General Conditions. In the event the Owner elects to terminate the Contractor's employment under this Contract, the Contractor shall only be entitled to payment for work under the Agreement actually completed by the Contractor up to the date of Contractor's termination, less deductions for: (1) the cost of correcting any deficient or defective work, including compensation for the Architect and their respective consultant's additional services and expenses made necessary by the Contractor's defective work, default, neglect, or failure to perform under this Contract; (2) damages incurred by the Owner as a result of the Contractor's breach, including but not limited to costs to finish the work and damages for delay, if any, in completing the work under the Contract; and (3) actual reasonable attorney's fees incurred by the Owner in obtaining legal advice, counsel, and/or representation relating to the issues of Contractor's breach of contract, defective work, default neglect, or failure to perform and Owner's legal options relating thereto as well as any other reasonable attorney's fees due to Owner under other provisions of this Contract; and (4) such other amounts due and owing to Owner under the terms and conditions of the Contract documents. In the event the Contractor is terminated pursuant to Article 14.2, the Contractor shall not be entitled to any remaining funds under the Contract after the date of termination except as specifically provided above, and subject to the availability of funds after all work is completed. All remaining unpaid funds in the Contract as of the Contractor's termination date shall be the sole and exclusive property of the Owner, and the Contractor shall be paid by the Owner at the conclusion of all work under the Contract as provided above, but only to the extent that there are funds remaining after all payments have been made to complete the work under the Contract and to compensate the Owner as provided above in the four (4) enumerated deductions in this Article 2.4.1. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

ARTICLE 3 CONTRACTOR

§ 3.1 GENERAL

§ 3.1.1 .1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The term "Contractor" means the Contractor or the Contractor's authorized representative. 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 Contractor Agreement.

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

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

§ 3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

§ 3.2.1 The Contractor warrants that it has made itself familiar with the Project site and obtained all information required by the Contractor concerning the conditions of the Project site including but not limited to soil, surface, and subsurface conditions, legal descriptions and surveys of the Project site, and the location of utilities and the improvements to be constructed. The Contractor shall continue to carefully study and compare the Contract Documents with each other and with information obtained by Contractor by his own investigation and tests and shall at once report to the Owner and Architect errors, inconsistencies, or omissions discovered. These obligations are for

Init.

the purpose of facilitating construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, any errors, inconsistencies or omissions discovered by the Contractor shall be reported promptly to the Architect as a request for information in such form as the Architect may require. If the Contractor performs any construction activity with either actual knowledge or constructive knowledge that it involves an error, inconsistency, or omission in the Contract Documents, the Contractor shall assume liability for such performance and costs for correction.

§ 3.2.2 Any design errors or omissions noted by the Contractor during this review shall be reported promptly to the Architect, but it is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional unless otherwise specifically provided in the Contract Documents. The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, building codes, and rules and regulations, but any nonconformity discovered by or made known to the Contractor shall be reported promptly to the Architect. If the Contractor performs any construction activity with either actual knowledge or constructive knowledge that it involves an error, inconsistency, or omission in the Contract Documents, the Contractor shall assume liability for such performance and costs for correction.

§ 3.2.3 Any design errors or omissions noted by the Contractor during this review shall be reported promptly to the Architect, but it is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional unless otherwise specifically provided in the Contract Documents. The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, building codes, and rules and regulations, but any nonconformity discovered by or made known to the Contractor shall be reported promptly to the Architect. If the Contractor performs any construction activity with either actual knowledge or constructive knowledge that it involves an error, inconsistency, or omission in the Contract Documents, the Contractor shall assume liability for such performance and costs for correction.

§ 3.2.4 Delete.

§ 3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, . The Contractor shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures.

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

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

§ 3.3.4 All inspections required by law shall be obtained by the Contractor, including but not limited to those required by law to be obtained by the Owner, and no failure of the Owner to obtain such inspection shall constitute a waiver of Contractor's obligation hereunder. The Contractor shall notify the Owner of any application for inspection required to be executed by the Owner.

§ 3.4 LABOR AND MATERIALS

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

§ 3.4.2 Delete

Init.

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

§3.4.4 By law, all school sites are drug, alcohol, and tobacco free, and Contractor shall ensure that all workers on the job site comply with the said law.

§ 3.5 WARRANTY

§ 3.5.1 The Contractor warrants to the Owner that materials and equipment furnished under the Contract will be of excellent quality and new unless otherwise required or permitted by the Contract Documents, that the Work shall be performed in an excellent manner and shall be free from defects, and that the Work shall conform to the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, shall be considered defective. The Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.6 TAXES

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

§ 3.7 PERMITS, FEES, NOTICES, AND COMPLIANCE WITH LAWS

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit and other permits and governmental fees, licenses and inspections necessary for proper execution and completion of the Work which are customarily secured after execution of the Contract and which are legally required when bids are received. The Owner will not reimburse the Contractor for the cost of elective permits, which the Contractor chooses to secure in conjunction with its means and methods of executing the work, or for any offsite permits.

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

§ 3.7.3 The Contractor shall review the Contract Documents to ascertain that the Contract Documents are to the best of the Contractor's knowledge in accordance with applicable laws, statutes, ordinances, building codes, and rules and regulations. The Contractor shall promptly notify the Architect and Owner in writing, of any variance therewith, and necessary changes shall be accomplished by appropriate Modification.

§ 3.7.4 If the Contractor performs Work contrary to laws, statutes, ordinances, building codes, and rules and regulations, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

(Paragraph deleted)

§ 3.8 Deleted

(Paragraphs deleted)

§ 3.9 SUPERINTENDENT

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor. Project conference meeting minutes shall constitute Owner's request in writing. The Owner shall have the right to require the Contractor

Init.

to replace any superintendent whose performance the Owner deems to be unsatisfactory, and the Contractor's failure to do so within seven (7) days of having received written notice from the Owner as to the Superintendent's unsatisfactory performance shall constitute a breach of Article 14.2.1, thereby giving the Owner the right to terminate the Contractor's employment under this Contract.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the name and qualifications of a proposed superintendent.

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

§ 3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

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

§ 3.10.2 The Contractor shall prepare and keep current, for the Architect's/Owners' review, a schedule of submittals which is coordinated with the Contractor's construction schedule and allows the Architect reasonable time to review submittals.

(Paragraph deleted)

§ 3.11 DOCUMENTS AND SAMPLES AT THE SITE

The Contractor shall maintain at the site for the Owner one record copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to record field changes and selections made during construction, and one record copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Architect and shall be delivered to the Architect for submittal to the Owner in good condition upon completion of the Work and before final payment is made and shall be executed by the Contractor certifying that they have been kept in accordance with the provisions of this subparagraph and accurately reflect the construction of the Work as built.

§ 3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

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

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

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

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

Init.

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

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

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

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

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

§ 3.12.10 The Contractor shall not be required to provide professional services which constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. The Contractor shall not be required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals. Pursuant to this Section 3.12.10, the Architect will review, approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 3.13 USE OF SITE

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

§ 3.14 CUTTING AND PATCHING

§ 3.14.1 The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or separate contractors by cutting, patching or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the Owner or a separate contractor

Init.

except with written consent of the Owner and of such separate contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a separate contractor the Contractor's consent to cutting or otherwise altering the Work.

§ 3.15 CLEANING UP

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

(Paragraph deleted)

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

§ 3.16 ACCESS TO WORK

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

§ 3.17 ROYALTIES, PATENTS AND COPYRIGHTS

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

§ 3.18 INDEMNIFICATION

§ 3.18.1 To the fullest extent permitted by law and to the extent claims, damages, losses or expenses are not covered by Project Management Protective Liability insurance purchased by the Contractor. The Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to reasonable attorneys' fees and litigation expenses incurred by the Owner, and arising out of or resulting from performance of the Work, defective work, default, neglect, and or failure to perform under the Contract. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Section 3.18.

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

ARTICLE 4 ARCHITECT

§ 4.1 GENERAL

§ 4.1.1 The Architect is the person lawfully licensed to practice architecture or an entity lawfully practicing architecture identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The term "Architect" means the Architect or the Engineer or the Architect's or Engineer's authorized representative.

§ 4.1.2 Duties, responsibilities and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted

§ 4.1.3 If the employment of the Architect is terminated, the Owner shall employ a new Architect whose status under the Contract Documents shall be that of the former Architect.

Init.

§ 4.2 ADMINISTRATION OF THE CONTRACT

(Paragraph deleted)

§ 4.2.1. The Architect will provide administration of the Contract as described in the Contract Documents, and will be an Owner's representative (1) during construction, (2) until final payment is due and (3) with the Owner's concurrence, from time to time during the one or two year period for correction of Work described in Section 12.2. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents, unless otherwise modified in writing in accordance with other provisions of the Contract.

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

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

§ 4.2.4 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION

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

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

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.5.2 and 13.5.3, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

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

Init.

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

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion, will receive, review for completeness and forward to the Owner, records, written warranties and related documents required by the Contract and assembled by the Contractor, and will issue a final Certificate for Payment upon compliance with the requirements of the Contract Documents.

§ 4.2.10 Delete

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

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of and reasonably inferable from the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and initial decisions, the Architect will endeavor to secure faithful performance by the Contractor

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

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

ARTICLE 5 SUBCONTRACTORS

§ 5.1 DEFINITIONS

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate contractor or subcontractors of a separate contractor. . Under no circumstances shall the Contractor subcontract any portion of the work under the Contract Documents to any person or entity in which the Contractor (including any officer and/or stockholder of the Contractor) has an ownership interest. Under no circumstances shall the Contractor assign or otherwise contract with another person or entity to assume the Contractor's obligations and duties as Contractor under these Contract Documents

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

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

§ 5.2.1 Within thirty (30) days of the award of the Contract, the Contractor shall furnish in writing to the Owner through the Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Architect will promptly reply to the Contractor in writing stating whether or not the Owner or the Architect, after due investigation, has reasonable objection to any such proposed person or entity. Failure of the Owner or Architect to reply promptly shall constitute notice of no reasonable objection. Subcontractors, required to be named on the Bidding Documents, shall be used on the Work for which they are proposed, unless reasonable objection is indicated by the Owner, or the Architect.

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

Init.

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

§ 5.2.4 The Contractor shall not change a Subcontractor, person or entity previously selected without approval of the Owner.

§ 5.3 SUBCONTRACTUAL RELATIONS

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

§ 5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

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

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2, or stoppage of the Work pursuant to Article 2.3, and only for those subcontract agreements which the Owner accepts by notifying the Subcontractor and Contractor in writing;

(Paragraphs deleted)

§5.5 PAYMENTS TO SUBCONTRACTORS

§5.5.1 The Contractor shall pay each subcontractor upon receipt of payment from the Owner, an amount equal to the percentage of completion allowed to the Contractor on account of each Subcontractor's work less the percentage retained for payments to the Contractor. The Contractor shall also require each Subcontractor to make similar payments to its Sub-subcontractors.

§5.5.2 If the Owner fails to approve a Requisition for Payment for a cause which the Owner determines is the fault of the Contractor and not the fault of a particular Subcontractor, or if the Contractor fails to make a payment which is properly due to a particular Subcontractor, the Owner may pay each Subcontractor directly less the amount to be retained under the Subcontract. Any amount so paid by the Owner shall be repaid to the Owner by the Contractor in the manner set forth in Subparagraph 2.4

§5.5.3 The Owner shall have no obligation to pay or see to the payment of any monies to any Subcontractor. Nothing contained in Article 5.5 shall be deemed to create any rights in any Subcontractor against the Owner.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

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

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

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

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

(Paragraph deleted)

§ 6.2 MUTUAL RESPONSIBILITY

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

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

§ 6.2.3 The Owner shall be reimbursed by the Contractor for costs incurred by the Owner which are payable to a separate contractor because of delays, improperly timed activities or defective construction of the Contractor.

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

(Paragraph deleted)

§ 6.3 OWNER'S RIGHT TO CLEAN UP

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

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 GENERAL

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

§ 7.1.2 A Change Order shall not relieve the Contractor of obligations under the contract. .

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

§ 7.2 CHANGE ORDERS

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

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

§ 7.2.2 Methods used in determining adjustments to the Contract Sum may include those listed in Section 7.3.3.

§ 7.3 CONSTRUCTION CHANGE DIRECTIVES

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

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

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

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

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

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

(Paragraphs deleted)

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

§ 7.4 CHANGE ORDERS

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

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

§ 7.4.2 Methods used in determining adjustments to the Contract Sum may include those listed in Section 7.3.3.

§ 7.5 MINOR CHANGES IN THE WORK

§ 7.5.1 The Architect with concurrence from the Owner will have authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the purposes of the building and the Contract Documents. Such changes shall be effected by written order and shall be binding on the Owner and Contractor. The Contractor shall carry out such written orders promptly.

ARTICLE 8 TIME

§ 8.1 DEFINITIONS

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

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

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

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

§ 8.2 PROGRESS AND COMPLETION

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

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance. Unless the date of commencement is established by the Contract Documents or a notice to proceed given by the Owner, the Contractor shall notify the Owner in writing not less than five days or other agreed period before commencing the Work. .

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

§8.2.4 Should the progress of the Work be delayed by any fault, neglect, act or omission of the Contractor or any person or firm employed by him or should it be necessary to complete the Work within the time permitted for the Contractor's work, the Contractor shall, at its own cost and expense, work such overtime as may be necessary to make up for all time lost and to avoid delay in completion of the Work. The Contractor shall compensate the Owner for and hold him harmless against any and all costs, expenses, reasonable attorney's fees, losses, liability, and damages that the Owner may sustain or incur by reason of such delay.

§ 8.3 DELAYS AND EXTENSIONS OF TIME

(Paragraph deleted)

§ 8.3.1. Requests for extension of completion time due to conditions over which the Contractor has no control, will be reviewed by the Owner after written application is made to the Architect for a time extension. Any request for any extension of time is to be made within 21 days of occurrence of conditions which, in the opinion of the Contractor

Init.

warrant such an extension, with reasons clearly stated and detailed proof given for all delays beyond the Contractor's control. No time extension will be allowed except by written and specific approval of the Owner. Delays beyond the Contractor's control may include: an act or neglect of the Owner's own forces, Architect, any of the other Contractors, or an employee of any of them, or by changes ordered in the Work, or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, or other causes beyond the Contractor's control, or by delay authorized by the Owner.

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

(Paragraph deleted)

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 CONTRACT SUM

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

§ 9.2 SCHEDULE OF VALUES

§ 9.2.1 Before the first Requisition for Payment, the Contractor shall submit to the Architect a schedule of values allocated to various portions of the Work, prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Requisitions for Payment.

§ 9.3 REQUISITION FOR PAYMENT

§ 9.3.1 The Contractor shall prepare and submit three original copies to the Architect on the 25th day of each month itemized "Requisition for Payment" (IAC PSCP Form 306.4 Standard Contractor's Requisition for Payment and such other forms as may be designated by Owner) for operations completed in accordance with the Schedule of Values for the value of the work completed or anticipated to be completed through the last day of such month, including the value of material suitably stored at the Project Site or other approved locations as provided in Subparagraph 9.3.2, less the aggregate of any previous payments and retainages and less retainages required by the Contract Documents. No change in the Contract Sum shall be made by Contractor on any Requisition for Payment without an approved Change Order. Faxed Requisitions for payment will NOT be accepted.

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

(Paragraphs deleted)

§ 9.3.2 As provided in Section 7.3.8, such Requisitions may include requests for payment on account of changes in the Work which have been properly authorized by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.3 Such Requisitions may not include requests for payment for portions of the Work for which the Contractor does not intend to pay to a Subcontractor or material supplier.

9.3.4 Upon completion of fifty percent (50%) of the work and provided that the Contract work is on schedule and the Contractor's performance is deemed by the Owner to be satisfactory, the Owner may at his discretion decline to withhold further retainage on the remainder of the work to be billed. If Project schedules are not pursued diligently, or if the Contractor's work is at any time deemed by the Owner to be unsatisfactory, the withholding of the further retainage up to ten percent (10%) of the Contract value may be reinstated by the Owner at its discretion. If the Contractor intends to request a reduction of retainage as stated above, the Contractor must submit a request 30 days prior to invoicing the Owner for a reduction. A consent of surety to a reduction of retention along with a justification of the progress on the job in relation to the overall Project must be submitted. A complete labor and material schedule of values for all aspects of the work must also be submitted with the request for approval.

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

1. Description of items,
2. Bill of Sale,
3. Location of storage facility and delivery receipt,
4. Items are currently covered by all contractual requirements, including liability and fire insurance,
5. Items, or any part thereof will not be installed in other construction projects other than work under this Contract.

§ 9.3.6 The Contractor warrants that title to all Work covered by a Requisition for Payment shall pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of a Requisition for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work. Contractor shall indemnify and hold Owner harmless from any liens, claims, security interests, or encumbrances claimed by Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and/or equipment relating to the Work and from all costs and expenses, including reasonable attorney's fees, incurred by Owner in connection therewith.

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

§ 9.3.8 Deleted

§ 9.3.9 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.

§ 9.4 CERTIFICATES FOR PAYMENT

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

§ 9.4.2 The Architect shall endeavor to obtain approval by the Owner, and Contractor of the draft Requisition for Payment. If approval is obtained, the Architect shall notify the Owner, and Contractor, and shall issue a Project Certificate of Payment. The Contractor shall then submit five (5) copies of the agreed upon Requisition for Payment to the Architect which shall be signed by the Contractor, Owner, and Architect, and shall be notarized. If approval is not obtained of the draft Requisition for Payment, the Architect shall notify the Contractor of non-approval. The Architect shall issue a Project Certificate for Payment to the Owner with a copy to the Contractor for such amounts as the Architect, and Owner determine are properly due.. The Contractor shall then submit a Requisition for Payment pursuant to such Project Certificate for Payment, if any, in five (5) copies based on the Architect's determination. The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner,

Init.

based on the Architect's evaluation of the Work and the data comprising the Application for Payment, that the Work has progressed to the point indicated and that, to the best of the Architect's knowledge, information and belief, the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Architect. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. However, the issuance of a Certificate for Payment will not be a representation that the Architect has

- (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work,
- (2) reviewed construction means, methods, techniques, sequences or procedures,
- (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment, or
- (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

9.4.3 In any event, where the Owner, and Architect do not certify payment or withhold certification to any extent, the Contractor shall nonetheless continue to perform the Work fully.

§ 9.5 DECISIONS TO WITHHOLD CERTIFICATION

(Paragraphs deleted)

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

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

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

(Paragraph deleted)

§ 9.6 PROGRESS PAYMENTS

(Paragraphs deleted)

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

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

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

§ 9.6.4 Contractor payments to material and equipment suppliers shall be treated in a manner similar to that provided in Sections 9.6.1, 9.6.2 and 9.6.3.

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

§ 9.6.6 Under no circumstances shall the Contractor assign to any person or entity the Contractor's right to receive payment under the Contract Documents, unless the Contractor has received express, prior written consent of the Owner, which consent specifically identifies the identity of such assignee. Nothing contained in these Contract Documents shall require the Owner to approve such an assignment of payments by the Contractor to a third party.

§ 9.6.7 Neither the Owner nor Architect shall have an obligation to pay or to see to the payment of money to a Subcontractor except as may otherwise be required by law.

§ 9.7 FAILURE OF PAYMENT

§ 9.7.1 If the Architect should fail to issue notice of approval or disapproval within fourteen (14) days of Owner's receipt of the Contractor's draft Requisition for Payment, or if, through no fault of the Contractor, the Architect does not issue a Project Certificate for Payment within seven (14) days after receipt of the Owner's approval or disapproval of the draft Requisition for Payment, the Contractor may file a claim against the Owner for payment as provided in Article 15.

§ 9.8 SUBSTANTIAL COMPLETION

(Paragraph deleted)

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so the Owner can occupy or utilize the Work for its intended use; i.e., when the Owner is granted a "Use and Occupancy Permit" by Howard County and other Authorities having jurisdiction.

§ 9.8.2 When the Architect, and Owner agree that the project has reached "Substantial Completion" as set forth in Paragraph 9.8.1 and is on schedule, and it appears that there are no complications or problems in completing the job, the retainage may be reduced to five percent (5%) at the Owner's discretion.

9.8.3 Except as stated in Paragraph 9.8.2 after the payment due the Contractor at Substantial Completion has been made by the Owner, no other payment shall be made until the Project has been fully completed and the Contract fully performed.

(Paragraph deleted)

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

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

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

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

§ 9.9 PARTIAL OCCUPANCY OR USE

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage.

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

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

§ 9.10 FINAL COMPLETION AND FINAL PAYMENT

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

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect

- (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied,
- (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner,
- (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents,
- (4) consent of surety, if any, to final payment with AIA Form; and
- (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner and release of liens on the "Contractor's Affidavit of Release of Liens and Payment of Debts and Claims" AIA Form;

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(6) all records, Drawings and Specifications, Addenda, Change Orders, and other modifications maintained at the site under the Subparagraph 3.11 all warranties, instructions, and maintenance manuals required.

If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien or claim. If such lien or claim remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien or claim, including all costs and reasonable attorneys' fees incurred by Owner. Final payment to the Contractor shall not become due until all close-out documents have been properly submitted to and received by the Architect through the Construction Manager and certified to the Architect and delivered by the Architect to the Owner and all warranty work has been fully completed.

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

§ 9.10.4

(Paragraphs deleted)

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

The making of final payment shall, after the Date of Substantial Completion of the Project, constitute a waiver of all claims by the Owner except those arising from:

1. Unsettled claims,
2. Faulty or defective work appearing after Substantial Completion of work,
3. Failure of the work to comply with the requirements of the Contract Documents,
4. Terms of any special warranties required by the Contract Documents; and
5. Reasonable attorney's fees, court costs, and litigation expenses incurred by the Owner in prosecuting any such claims against the Contractor or in defending against any claims against the Owner arising out of the Contract and the work thereunder.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 SAFETY PRECAUTIONS AND PROGRAMS

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

§ 10.2 SAFETY OF PERSONS AND PROPERTY, INJURY OR DAMAGE TO PERSON OR PROPERTY

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

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

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

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

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

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2., except damage or loss attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

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

§ 10.2.7 The Contractor shall not load or permit any part of the construction site to be loaded so as to endanger its safety or the safety of persons or property. The Contractor shall protect adjoining properties, streets, walkways, sidewalks, and paths.

10.2.8 The Contractor shall protect excavation and structures from damage by rain, water, ground water, or water from any other source. The Contractor shall use tarpaulins, pumps, or other temporary protection to afford protection.

10.2.9 The Contractor shall provide constant protection to maintain work, materials, apparatus, and fixtures free from injury and damage by rain, snow, wind, storms, frost, or heat and shall cover work likely to be damaged at the end of each day's work.

10.2.10 The Contractor shall remove work damaged due to failure to provide specified protection and replace such removed work at no additional cost to the Owner.

10.2.11 Material Safety Data Sheets: Contractor shall provide Material and Data Safety Sheets on all items prior to commencement of Work. The Contractor shall designate a common location on the construction site where all independent contractors or employers shall have a chemical information list before the commencement of work.

§ 10.2.8 INJURY OR DAMAGE TO PERSON OR PROPERTY

(Paragraph deleted)

§ 10.3 HAZARDOUS MATERIALS

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

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§ 10.3.2 The Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to verify that it has been rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of such material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. The Contract Time shall be extended appropriately.

§ 10.3.3 The Owner shall not be responsible under this Section 10.3 for materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents.

(Paragraphs deleted)

§ 10.4 EMERGENCIES

(Paragraph deleted)

§ 10.4.1 In any case of an emergency, the Contractor shall immediately notify the Architect and the Owner by the most expeditious means available, followed by a Fax, or written notice, explaining the situation and actions taken.

§ 10.4.2 Additional compensation or extension of time will not be considered or permitted for emergencies arising from delay, damage, or loss as stipulated in 8.2.4 and 10.2.5 or other applicable provisions.

ARTICLE 11 INSURANCE AND BONDS

§ 11.2 GENERAL INSURANCE REQUIREMENTS

§11.2.1 The Contractor shall not commence Work until the Contractor has obtained at the Contractor's own expense all of the insurance as required under this Contract and until such insurance has been approved by the Owner. The Contractor shall not allow any Subcontractor to commence work on any subcontract until all insurance required of the Subcontractor has been so obtained and approved by the Contractor. Approval of insurance required of the Contractor will be granted only after submission to the Owner of original certificates of insurance signed by authorized representatives of the insurers or, at the Owners request, certified copies of the required insurance policies. **Additionally, the Contractor must submit with the original certificates or certified policies, the enclosed Contractor's Insurance Checklist form (See Construction Insurance Check List attached to and incorporated into this Contract as Exhibit A.) completed by the Contractor and each of the Contractor's Insurance Agents or Contractor's Insurers (one form for each agent or insurer if multiple agents or insurers write the Contractor's coverages).**

§11.2.2 Insurance as required under this Contract shall be in force throughout the term of this Contract and for two years after final acceptance of the Project by Owner. Original certificated signed by authorized representatives of the insurers or, at the Owner's request, certificated copies of insurance policies, evidencing that the required insurance is in effect, shall be maintained with the Owner throughout the term of the Contract and for two years after final acceptance of the Project by Owner.

§11.2.3 The Contractor shall require all Subcontractors to maintain during the term of the Contract commercial general liability insurance, business auto liability insurance, and workers compensation and employers liability insurance and umbrella excess or excess liability insurance to the same extent required of Contractor in Sections 11.3.1.1 through 11.3.1.4 of this Contract unless any such requirement is expressly waived or amended by the Owner in writing. The Contractor shall furnish Subcontractor's certificates of insurance to the Owner immediately upon request.

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§11.2.4 All insurance policies required under this Contract shall be endorsed to provide that the policy is not subject to cancellation, non-renewal, or material reduction in coverage until sixty (60) days prior written notice has been given to the Owner. Therefore, the phrases "endeavor to" and "...but failure to mail such notice shall impose no obligation or liability of any kind upon the company, its agents or representatives" are to be eliminated from the cancellation provision of standard ACORD certificates of insurance.

§11.2.5 Acceptance and/or approval of any insurance by the Owner shall not be construed as relieving or excusing the Contractor or the Contractor's Surety from any liability or obligation imposed upon either or both of them by the provisions of this Contract or the Contract documents.

§11.2.6 If the contractor does not meet the insurance requirements of this Contract, the Contractor shall be in default under this Contract, and all default remedies shall be available to the Owner; moreover, no Work shall commence without such insurance, and, if Work has commenced, it shall cease immediately until the insurance requirements have been met or unless the Owner orders in writing that Work shall commence with specified alternate insurance as determined in the sole and absolute discretion of the Owner and set forth in the written order to commence or return to work signed by the Owner. The Contractor may forward a written request to the Owner for a waiver in writing of the insurance requirement(s) not met or for approval in writing of alternate insurance coverage, self-insurance, or group self-insurance arrangements. If the Owner denies the request, the Contractor shall comply with the insurance requirements as specified in this Contract or be held in default under this Contract. The Owner shall have the sole and absolute discretion to grant or deny such a request for a waiver, and the Owner's decision shall be final and binding upon all parties and shall not be subject to appeal or review.

§11.2.7 All required insurance coverages must be underwritten by insurers licensed to do business in the State of Maryland and acceptable to the Owner. The insurers must also have a policyholders' rating of "A" or better, and a financial size of "Class VII" or better in the latest evaluation by A.M. Best company, unless Owner grants specific written approval for an exception. The Owner hereby grants specific approval for the acquisition of workers compensation and employers liability insurance from the Injured Workers Insurance Fund of Maryland.

§11.2.8 Any deductibles or retentions in excess of \$10,000 shall be disclosed by the Contractor and shall be subject to Owner's written approval. Any deductible or retention amounts elected by the Contractor or imposed by the Contractor's insurer(s) shall be the sole responsibility of the Contractor.

§11.2.9 Any and all return premiums and/or dividends for insurance or coverage directly charged to the Owner by the Contractor in connection with this Contract shall belong to and be payable to the Owner.

§11.2.10 If the Owner is damaged by the failure or neglect of the Contractor to purchase and maintain insurance as described and required in this Contract, then the Contractor shall be in default under this Contract, shall bear all liability for all damages incurred, and shall be subject to the remedies under Article 14.

§ 11.2.11 Owner's Liability Insurance

§11.2.11.1 Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance, or solely at the Owner's option, the Owner may self-insure the Owner's liability exposures.

§11.3 Contractor's Liability Insurance

§ 11.3.1 The Contractor shall purchase and maintain the following insurance coverages which will insure against claims which may arise out of or result from the Contractor's operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone, directly or indirectly, employed by any of them, or by anyone for whose acts any of them may be liable. Insurance shall be written for not less than the limits specified below or required by law, whichever is greater.

§11.3.2 Commercial general liability insurance or its equivalent for bodily injury, personal injury and property damage including loss of use, with minimum limits of:

\$ 1,000,000 each occurrence;

\$ 1,000,000 personal and advertising injury;

\$ 2,000,000 general aggregate; and

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\$ 2,000,000 products/completed operations
aggregate.

This insurance shall include coverage for all of the following:

- i. General aggregate limit applying on a per project basis;
- ii. Liability arising from premises and operations;
- iii. Liability arising from the actions of independent contractors;
- iv. Liability arising from products and completed operations with such coverage to be maintained for two years after final acceptance of the project by the Owner;
- v. Contractual liability including protection for the Contractor from bodily injury and property damage claims arising out of liability assumed under this Contract; and
- vi. Liability arising from the explosion, collapse, or underground (XCU) hazards.

(Paragraph deleted)

§11.3.3 Business auto liability insurance or its equivalent with a minimum limit of \$1,000,000 per accident and including coverage for all of the following:

- i. Liability arising out of the ownership, maintenance, or use of any auto; and
- ii. Automobile contractual liability.

§11.3.4 Workers compensation insurance or its equivalent with statutory benefits as required by any state or Federal law, including standard "other states" coverage; employers liability insurance or its equivalent with minimum limits of:

\$ 100,000 each accident for bodily injury by accident
\$ 100,000 each employee for bodily injury by disease; and
\$ 500,000 policy limit for bodily injury by disease.

(Paragraphs deleted)

§11.3.5 Contractor's pollution liability insurance or its equivalent for bodily injury, property damage, including loss of use, and clean-up costs on and off the Project site, with minimum limits of:

\$ 1,000,000 each pollution incident; and
\$ 1,000,000 annual aggregate.

The insurance shall include coverage for all of the following:

- i. Liability arising from activities of the Contractor or of others for whom the Contractor is legally obligated whether on or off the Project site; and
- ii. Contractual liability including protection for the Contractor from claims for bodily injury, property damage, and clean-up costs arising out of liability assumed under this Contract.

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11.3.6 Umbrella excess liability or excess liability insurance or its equivalent with minimum limits of:

- \$ 5,000,000 occurrence;
- \$ 5,000,000 aggregate for other than products/completed operations and auto liability; and
- \$ 5,000,000 products/completed operations aggregate

and including all of the following coverages on the applicable schedule of underlying insurance:

- i. Commercial general liability;
- ii. Business auto liability; and
- iii. Employer's liability.

§11.3.7 Owner and Owner's elected and appointed officials, officers, consultants, agents and employees shall be named as additional insureds on the Contractor's commercial general liability insurance and umbrella excess or excess liability insurance policies with respect to liability arising out of the Contractor's products, installation, and/or services provided under this Contract. Such coverage shall extend to cover the additional insured(s) for liability arising out of the following:

- i. On-going operations;
- ii. Owner's general supervision of installation and/or services as provided by the Contractor and/or its agents and subcontractors pursuant to this Contract; and
- iii. Products and completed operations.

The commercial general liability policy and the umbrella excess liability or excess liability policies must include additional insured language, which shall afford liability coverage for all of the exposures listed above in i., ii., and iii., as follows:

"This policy is amended to include as insureds Owner and Owner's elected and appointed officials, officers, consultants, agents, and employees, but only for liability arising out of "your product" and "your work" for Owner by or for you."

Special Note: ISO forms CG 2009 and CG 2010 entitled "Additional Insured – Owners, Lessees or Contractors – Scheduled Person or Organization" (previously Forms A and B respectively) and CG 2033 entitled "Additional Insured – Owners, Lessees or Contractors – Automatic Status When Required in Construction Agreement with You" are **NOT ACCEPTABLE**. A manuscript endorsement with the above wording is required.

(Paragraph deleted)

§ 11.3.8 Insurance or self-insurance provided to the Owner and Owner's elected and appointed officials, officers, consultants, agents and employees under the Contractor's liability insurance or self-insurance required in this Contract, including, but not limited to, umbrella and excess liability or excess liability policies, shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of insurance or self-insurance. (Any cross suits or cross liability exclusion shall be deleted from Contractor's liability insurance policies required herein.)

§11.3.9 Any insurance or self-insurance required to be provided by the Owner and Owner's elected and appointed officials, officers, consultants, agents, and employees shall be primary, and any other insurance, self-insurance, coverage or indemnity available to the Owner and Owner's elected and appointed officials, officers, consultants, agents, and employees shall be excess of and non-contributory with insurance or self-insurance provided to the Owner and Owner's elected and appointed officials, officers, consultants, agents, and employees.

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(Paragraph deleted)

§11.3.10 If any liability insurance purchased by the Contractor has been issued on a "claims made" basis, the Contractor shall comply with the following additional conditions:

- i. The Contractor shall agree to provide certificates of insurance evidencing the above coverages for a period of two years after final payment for the Contract. Such certificates shall evidence a retroactive date no later than the beginning of the Work under this Contract; or
- ii. The Contractor shall purchase an extended (minimum two years) reporting period endorsement for each such "claims made" policy in force as of the date of final acceptance of the project by the Owner and evidence the purchase of this extended reporting period endorsement by means of a certificate of insurance or a copy of the endorsement itself. Such certificate or copy of the endorsement shall evidence a retroactive date no later than the beginning of the Work under this Contract.

(Paragraph deleted)

§ 11.4 Builders Risk Insurance (Owner to Purchase)

§ 11.4.1 The Owner shall purchase and maintain builders risk insurance on a replacement cost basis with a limit at least equal to the initial Contract Sum. This insurance shall be maintained until final acceptance of the Project by the Owner or until no person or entity other than the Owner has an insurable interest in the covered property, whichever is earlier. This builders risk insurance shall include the interests of the Owner, Subcontractors and Sub-subcontractors in the Project.

(Paragraphs deleted)

§11.4.2 Insurance shall be on an "all-risk" or equivalent policy form and shall insure against the perils of fire, extended coverage, theft, vandalism, malicious mischief, collapse and windstorm. Coverage is to apply for debris removal, including demolition occasioned by a covered loss. This insurance shall cover reasonable compensation for Architect's and Contractor's services and expenses required as a result of such covered loss. Coverage for other perils such as flood and earthquake or for loss caused by the enforcement of any applicable ordinance or law shall not be required unless otherwise provided in the Contract.

§ 11.4.3 This builders risk insurance shall cover all of the following types of property:

- i. All structures to be constructed, under construction, and/or already constructed;
- ii. All materials, equipment, machinery and supplies which are to be incorporated into the Project;
- iii. Temporary structures of any nature whatsoever; and
- iv. Underground property, including but not limited to, foundations, pump stations, pumps, pipes, drains, tanks and connections.

(Paragraph deleted)

§11.4.4 The Contractor shall be responsible for payment of any deductibles applicable under this builders risk insurance, boiler and machinery insurance, or other property insurance applicable to the Project.

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§ 11.4.5 Unless otherwise provided in the Contract Documents, this builders risk insurance shall cover materials to be incorporated into the Project, which are either on or off the site, and also such materials in transit.

(Paragraph deleted)

§ 11.4.6 This builders risk insurance shall insure (or shall be amended to insure) against loss or damage caused by the boiler and machinery perils with limits and scope of coverage that are deemed by the Owner to be satisfactory. This insurance shall also include the interests of the Owner, Contractor, Subcontractors, and Sub-subcontractors in the Project.

(Paragraph deleted)

§ 11.4.7 The Owner and Contractor waive all rights against each other and against the Construction Manager, Owner's other Contractors and own forces described in Article 6, if any, and the subcontractors, sub-subcontractors, (elected and appointed officials, officers, directors, trustees, agents, employees and consultants) of any of them for property damage to or loss of use of the Work to the extent that such property damage or loss of use is covered by this builders risk insurance, boiler and machinery insurance, or other property insurance applicable to the Work. The policies shall provide such waivers of subrogation by endorsement or otherwise.

(Paragraph deleted)

§ 11.4.8 Any loss covered under this builders risk insurance, boiler and machinery insurance, or other property insurance applicable to the Work shall be payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to any mortgagee clause. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

(Paragraph deleted)

§ 11.4.9 Owner, as fiduciary, shall have the power to adjust and settle a loss with insurers.

(Paragraphs deleted)

§ 11.4.10 Partial occupancy or use in accordance with the provisions of the Contract that pertain to partial occupancy or use shall not commence until the builders risk insurer has granted permission by endorsement or otherwise for the Owner to partially occupy or use any completed or partially completed portion of the Work at any stage of construction. The Owner and Contractor shall take reasonable steps to obtain such permission.

(Paragraphs deleted)

§ 11.4.11 The insurance required by this Paragraph 11.4 is not intended to cover machinery, tools, or equipment owned or rented by the Contractor or its Subcontractors, which are utilized in the performance of the Work but not incorporated into the permanent improvements. The Contractor and its Subcontractors shall, at their own expense, purchase and maintain property insurance coverage for owned, leased, or rented machinery, tools or equipment. The Contractor and its Subcontractors hereby waive all rights against the Owner and its elected and appointed

officials, officers, agents, employees, and consultants for property damage to or loss of use of such machinery, tools, or equipment. The policies shall provide such waivers of subrogation by endorsement or otherwise.

§11.5 Miscellaneous Insurance

§11.5.1 The Contractor shall comply with the provisions of Federal law governing Social Security and with State and/or Federal laws regarding Unemployment Insurance, and all other State and/or Federal laws regarding insurance, as may be now and hereafter in force. The Contractor shall bear exclusive and sole liability for and will hold the Owner harmless against any and all demands for any required payments, taxes, or withholdings (including any interest or penalties assessed thereon) for the Contractor's (or any of its Subcontractor's) failure or refusal to comply with any such laws. Failure to comply shall be deemed a default subject to the remedies of Article 14.2.

§ 11.6 PERFORMANCE BOND AND PAYMENT BOND

§ 11.6.1 The Contractor shall furnish a Performance Bond and Labor and Materials Payment Bond covering the faithful performance of the Contract and the payment of all obligations arising thereunder and complying with the requirements of Maryland Law. Both bonds shall be in the amount of one hundred percent (100%) of the Contract amount and shall name the Howard County Board of Education as Obligee.

§ 11.6.2

Bonds shall be written by a bonding company that must be licensed with the Maryland Insurance Administration to do business in the State of Maryland and otherwise acceptable to the Howard County Public School System. The Contractor shall use Bond Forms provided by the Owner AIA 312 Performance Bond and AIA 312 Labor and Material Payment Bond, in order to satisfy the Bond requirements referenced in this Article.

§ 11.6.3 Firms issuing said bonds must be licensed to write bonds in the State of Maryland. The Contractor shall pay the premiums for required bonds. Obtainage of the required bonds by Contractor shall be a condition precedent to effectuation of the Contract between Owner and Contractor. If additional work is authorized, the amounts of the bonds shall be increased to cover the value of the increased Contract sum. All bonds shall conform to the requirements of the Maryland Little Miller Act. All bonds shall be subject to Owner's approval.

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

(Paragraphs deleted)

§ 11.3.5 Owner reserves the right to request from Contractor financial statements for the Contractor for up to 3 prior fiscal years.

§ 11.3.6 To protect the public interest the Owner will request a D & B report on the Contractor at any time during the term of the project. Should the D & B rating fall below the awarded rating, Contractor shall advise Owner of their corrective measures.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 UNCOVERING OF WORK

§ 12.1.1 If any portion of the Work is covered contrary to the request of the Architect, or the requirements specifically expressed in the Contract Documents, it must, if required in writing by either, the Owner or any other government agency, be uncovered for their observation and shall be replaced at the Contractor's expense without change in the Contract Time If a portion of the Work is covered contrary to the Architect's request or to requirements specifically

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expressed in the Contract Documents, it must, if required in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

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

§ 12.2 CORRECTION OF WORK

§12.2.1 Defective work shall include but not be limited to Work which may be caused by deterioration or failure to perform due to premature wear (not occasioned by abuse) or inherent defects in materials, workmanship of manufacturer or fabrication or improper execution of work

§12.2.2 Cost of correcting such rejected work also includes all contingent damages arising there from including damages to other work (whether installed by the Contractor or another) and to other property of the Owner.

§12.2.3 Such warranties as provided herein do not deprive the Owner of the Owner's right to prosecute any claim for breach of contract and/or any other claim for appropriate relief and damages.

§12.2.4 Any defective or nonconforming work during this period causing a hazard to life, safety, property, or use causing the Owner a financial loss shall be corrected immediately without regard to normal working hours. The Owner will immediately endeavor to provide telephone notice to the Contractor on the next normal working day.

§ 12.2.5 The Owner shall direct, if endeavors to contact the Contractor fail, certain telephone notification to Subcontractors in order to expedite emergency repairs. The Contractor shall not be relieved of responsibility by the procedure, and the Contractor shall supervise and direct correction of defects as required by the Contract Documents.

§12.2.6 The manufacturer of a product may be specifically mentioned as a party to a warranty. Then in such cases, it shall be the Contractor's obligation to produce the required warranty of the manufacturer and submit it to the Architect for examination and approval. Inclusion of a manufacturer as a party to a warranty does not relieve the Contractor from the requirements of the Contract Documents.

§12.2.7 Warranties on operating systems, equipment, or components placed in operation prior to Substantial Completion or acceptance shall begin on the date of Substantial Completion.

§ 12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION

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

§ 12.2.2 AFTER SUBSTANTIAL COMPLETION

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition.

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During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.4.

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

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

(Paragraphs deleted)

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

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

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

§ 12.3 ACCEPTANCE OF NONCONFORMING WORK

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

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 GOVERNING LAW

The Contract shall be governed by the laws of the State of Maryland and shall be construed in accordance with such laws.

§ 13.2 SUCCESSORS AND ASSIGNS

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

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

§ 13.3 WRITTEN NOTICE

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

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§13.3.2 All Contractor proposals, approvals, instruction, requests, claims, demands, and other notices shall be made in writing on Contractor's stationery; meeting minutes and FAX transmissions will not be considered written notice from Contractor.

§ 13.4 RIGHTS AND REMEDIES

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

(Paragraph deleted)

§13.4.2 In any claim and/or litigation filed by the Owner against the Contractor to enforce any provision of this Contract, the Owner shall be entitled to all reasonable attorney's fees, expenses, damages, litigation expenses, and court costs incurred in and/or resulting from any such claim and/or litigation. In any claim and/or litigation brought by the Contractor against the Owner and/or its agents, the Contractor shall bear the Owner's court costs, expenses, and reasonable attorney's fees incurred, unless the Court specifically determines as a matter of fact and law that the Owner, knowingly, willfully, and intentionally breached a provision of this Contract giving rise to Contractor's claim and resulting damages

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

§ 13.5 TESTS AND INSPECTIONS

§ 13.5.1 Tests, inspections and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures.

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

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

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

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

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

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§ 13.6 INTEREST

§ 13.6.1 No interest shall be paid by the Owner to the Contractor.

§ 13.7 TIME LIMITS ON CLAIMS, COMMENCEMENT OF STATUTORY LIMITATION PERIOD

§ 13.7.1 Contractor recognized and agrees that Owner is a governmental agency and that the statute of limitations is not applicable to claims and/or litigation filed by the Owner. Limitations as to time for filing of any claims, disputes, and/or litigation by the Contractor, or any person or entity claiming by, through, or on behalf of the Contractor, shall be as specified in Article 15.

13.8 BUY AMERICAN STEEL

§13.8.1 Contractor shall comply with the Buy American Steel Act Sections 17-301 to 17-306 of the Finance and Procurement Article of the Annotated Code of Maryland.

§13.8.2 Contractor shall be required to use or supply the domestic steel products unless the cost is unreasonable or inconsistent with the public interest.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 TERMINATION BY THE CONTRACTOR

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

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency that requires all Work to be stopped;

(Paragraphs deleted)

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed.

(Paragraph deleted)

§ 14.2 TERMINATION BY THE OWNER FOR CAUSE

§ 14.2.1 The Owner may terminate the Contractor's employment under this Contract if the Contractor:

- .1 persistently or repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
- .3 persistently disregards laws, ordinances, or rules, regulations or orders of a public authority having jurisdiction; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents such as, but not limited to:
 - (1) Failure to maintain progress in accordance with project schedule;
 - (2) Prevents other Contractors from meeting their scheduled progress;
 - (3) Performs work in a negligent or defective manner or in a manner contrary to the Contractor Documents;
 - (4) Failure to provide and maintain the required insurance coverage and the required bonds;
 - (5) Filing of bankruptcy proceedings by or against the Contractor and/or the filing of an assignment for the benefit of Contractor's creditors; and/or
 - (6) Breach of any provision of the Contract Documents.

Init.

§ 14.2.2 When any of the above reasons exist, the Owner, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 take possession of the site and of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 accept assignment of subcontracts pursuant to Section 5.4; and
- .3 finish the Work by whatever reasonable method the Owner may deem expedient.

.4 When the Owner terminated the Contractor for one of the reasons stated in Subparagraph 14.2.1 and invokes the Performance Bond to complete the Work, the surety shall not without the written consent of the Owner, retain the Contractor for the Work, and the Contractor shall not without written consent of the Owner perform any of the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished. In the event the Owner elects to terminate the Contractor's employment under this Contract, the Contractor shall only be entitled to be paid for work under the Contract actually completed by the Contractor up to the date of Contractor's termination less deductions for

(1) the cost of correcting any deficient or defective work, including compensation for the Construction Manager and Architect and their respective consultants' additional services and expenses made necessary by the Contractor's defective work, default, neglect, or failure to perform under this Contract;

(2) damages incurred by the Owner as a result of the Contractor's breach, including but not limited to the costs to finish the work and damages for delay, if any, in completing the work under the Contract;

(3) actual reasonable attorney's fees incurred by the Owner in obtaining legal advice, counsel, and/or representation relating to the issues of Contractor's breach of contract, defective work, default, neglect, or failure to perform and Owner's legal options relating thereto as well as any other reasonable attorney's fees due to Owner under other provisions of this Contract; and

(4) such other amounts due and owing to Owner under the terms and conditions of the Contract documents. In the event the Contractor is terminated pursuant to Article 14.2, the Contractor shall not be entitled to any remaining funds under the Contract, except as specifically provided above and subject to the availability of funds after all work is completed.

All remaining unpaid funds in the Contract as of the date of Contractor's termination shall be the sole and exclusive property of the Owner, and the Contractor shall be paid by the Owner at the conclusion of all work under the Contract as provided above, but only to the extent that there are funds remaining after all payments have been made first to complete the work under the Contract and to compensate the Owner as provided above in the (4) enumerated deductions in this Article 14.2.3. Any funds still remaining after payment for all work and after payment of the Contractor as provided above shall be the sole and exclusive property of the Owner.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and payment of the four (4) enumerated deductions in Article 14.2.3 other damages incurred by the Owner and not expressly waived, such excess shall be the sole and exclusive property of the Owner. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor if any, for work completed by the Contractor less the deductibles provided in Paragraph 14.2.3) shall be determined by the Owner, and this obligation for payment shall survive termination of the Contract.

§ 14.3 SUSPENSION BY THE OWNER FOR CONVENIENCE

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

(Paragraphs deleted)

§ 14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

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

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

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

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

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 CLAIMS

§ 15.1.1 Definition. A Claim is a demand or assertion by one of the parties seeking, as a matter of right, adjustment or interpretation of Contract terms, payment of money, extension of time or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor (and any person or entity claiming by, through, or on behalf of Contractor) arising out of or relating to the Contract. Claims must be initiated by written notice, on Contractor's stationary. Meeting minutes and Fax transmissions from the Contractor will not be considered written notice. The responsibility to substantiate Claims shall rest with the party making the Claim.

§ 15.1.2 Decision of Architect. Any claim, dispute, or other matter in question between the Contractor and the Owner shall be made in writing to the Architect except those relating to artistic effect as provided in Subparagraph 4.2.13 and those which have been waived by the making or acceptance of final payment as provided in Article 9. The Architect shall provide each party with ample opportunity to present its evidence with respect to the claim made, and the Architect shall render his decision on the claim not less than ten (10) days after the close of evidence before the Architect. The decision of the Architect may be appealed by litigation in the Circuit Court of Howard County as provided below. However, no litigation of any such claim, dispute or other matter may be made until the earlier of (1) the date on which the Architect has rendered a written decision, or (2) the eleventh day after the parties have presented their evidence to the Architect or have been given a reasonable opportunity to do so, if the Architect has not rendered a written decision by that date. With respect to all claims and/or disputes, the final written decision of the Architect shall be final and binding on the parties and on those claiming by, through, and/or on behalf of any such party, person, or entity who had the right to do so, and failed to do so, unless the final written decision of the Architect as to any such claim and/or dispute is appealed to the Circuit Court for Howard County by a party within thirty (30) days after having received the Architect's final written decision. In any such appeal of the Architect's final written decision, it shall be presumed that the Architect's decision is correct, and the Architect's decision shall be treated and regarded in the same manner in which an arbitrator's award would be treated and regarded by a Maryland court under Maryland's Uniform Arbitration Act, subject, however, to the procedural requirements specified in the Contract documents. The failure to appeal the Architect's final written decision within the aforementioned thirty (30) day period shall result in the said decision becoming final and binding on all parties as provided above. The Circuit Court for Howard County, Maryland, shall be the sole and exclusive jurisdiction for appealing any final written decision of the Architect. If the Architect renders a decision after litigation proceedings have been filed, such decision may be entered as evidence but will not supersede any litigation proceedings unless the decision is acceptable to all parties concerned.

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§ 15.1.3 Time Limits on Claims. Claims by either party must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later. Claims must be initiated by written notice to the Architect and the other party.

§ 15.1.4 Continuing Contract Performance. Pending final resolution of a Claim except as otherwise agreed in writing, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents. Except the Owner may withhold payment to the extent reasonably necessary to secure or compensate for a claim. This Article 15.1.4 shall not apply if the Owner has terminated the Contractor's employment pursuant to

§ 15.1.5 Claims for Concealed or Unknown Conditions. If conditions are encountered at the site which are (1) subsurface or otherwise concealed physical conditions which differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, then notice by the observing party shall be given to the other party promptly before conditions are disturbed and in no event later than 21 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall so notify the Owner and Contractor in writing, stating the reasons. Claims by either party in opposition to such determination must be made within 21 days after the Architect has given notice of the decision. If the conditions encountered are materially different, the Contract Sum and Contract Time shall be equitably adjusted, but if the Owner and Contractor cannot agree on an adjustment in the Contract Sum or Contract Time, the adjustment shall be referred to the Architect for initial determination, subject to further proceedings pursuant to Section 4.4.

(Paragraphs deleted)

§ 15.1.6

(Paragraphs deleted)

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

§ 15.1.7 If the Contractor believes additional cost is involved for reasons including but not limited to (1) a written interpretation from the Architect, (2) an order by the Owner to stop the Work where the Contractor was not at fault, (3) a written order for a minor change in the Work issued by the Architect, (4) failure of payment by the Owner, (5) termination of the Contract by the Owner, (6) Owner's suspension or (7) other reasonable grounds, Claim shall be filed in accordance with this Section 15.1

§ 15.1.8 Claims for Additional Time

§ 15.1.8.1 If the Contractor wishes to make Claim for an increase in the Contract Time, written notice shall be made in writing to the Architect not more than twenty-one (21) days after the commencement of the delay, otherwise it shall be waived.

§ 15.1.8.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction. . In establishing the time of construction completion, the weather conditions as recorded by the National Oceanic Atmospheric Administration (NOAA) at the National Climatic Data Center, Ashville, North Carolina over the past five (5) years will be taken into consideration. No extension of time, due to weather conditions, will be considered unless accompanied by NOAA documentary evidence showing by comparison that such weather is abnormal to the statistical mean of the past five (5) years and that such abnormality caused the delay.

§ 15.1.8.3 Injury or Damage to Person or Property. If either party to the Contract suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible,

written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 15.2 RESOLUTION OF CLAIMS AND DISPUTES

§ 15.2.1 Litigation

§ 15.2.1 Any Claim arising out of or related to the Contract. Any controversy or Claim arising out of or related to the Contract, or the breach thereof, shall be resolved finally by litigation in the Circuit Court of Howard County, Maryland, provided, however, that the provisions of this Article 15.2.1 authorizing litigation in court shall not be exercised by any party until the provisions of Article 15.1.2 shall have been complied with and exhausted. No party shall be entitled to litigate any dispute and/or claim unless and until that party has fully complied with the provisions of Article 15.1.1. The failure of any party to adhere to and comply with the provisions of Article 15.1.1 shall serve as a bar to that party's litigating a claim and/or dispute in court.

§ 15.2.2 Claims and Timely Assertion of Claims. Since the Owner is a public body, politic and corporate, its claims shall not be barred by any contractual period of limitations or by any statute of limitations. Claims by the Contractor shall be filed as provided in Article 15 (Claims and Disputes), and the time limits prescribed in Article 15 shall serve as a limitation upon filing of any and all claims and/or litigation by the Contractor and/or any person or entity claiming by, through, or on behalf of the Contractor.

15.3 Policies of Employment.

(Paragraphs deleted)

§15.3.1 The Contractor shall maintain policies on employment as follows:

1. The Contractor and all Subcontractors shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin or age. The Contractor shall take affirmative action to ensure that applicants are employed and that employees are treated during employment without regard to their race, religion, sex, national origin, or age. Such action shall include but not be limited to the following:

Employment, upgrading demotion or transfer, recruitment or recruitment advertising layoff or termination rates or pay or other forms of compensation and selection for training including apprenticeship.

The Contractor shall post in conspicuous places available to employees and applicants for employment notices setting forth the policies of non-discrimination.

§15.3.2 The Contractor and all Subcontractors shall in all solicitations or advertisements for employees placed by them or on their behalf state that all qualified applicants will receive consideration for employment without regard to race, religion, color, sex, national origin, or age.

§15.3.3 Minority Business Enterprise (MBE) Requirements are a part of the Conditions of the Contract, including Exhibits A, B, and C included with Form of Proposal.

ARTICLE 16 CONTRACTOR PERFORMANCE EVALUATION SCORECARD

Upon completion of a project or at any time during the project, the awarded contractor shall receive a performance evaluation scorecard rating the contractor's performance on the project. The evaluation scorecard will become part of the contractor's permanent file. A sample Contractor Performance/Evaluation Scorecard is included with the bid documents.

The evaluation scorecard shall include the following performance indicators; Quality of Work, Responsiveness, Professionalism, Resources, Schedule Management, Quality Control, Deficiency Resolution, Submittal Management, Training, Appearance, Security, Safety, Utility Conservation, Disruptions, Quality of Materials, Emergency

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Response, Hazardous Materials, Innovation, Teamwork, Cost Management, Billing, Compliance.

A contractor shall have up to 3 weeks after notification to appeal, challenge or otherwise dispute the scorecard results. After the 3-week period, the scorecard shall be considered final and accepted by the contractor.

A contractor receiving a 70% or less overall evaluation scorecard rating for a project may be disqualified for bidding on any future projects with the HCPSS for a period of three (3) years and/or for the remaining contract term including renewal options.

EXHIBIT A

1. Commercial General Liability

Insurer (precise name as per policy, not group name)
Best's Rating and Financial Size

Each Occurrence Limit
Personal and Advertising Injury Limit
General Aggregate Limit
Products/Completed Operations Aggregate Limit

Occurrence Basis	yes	no
General Aggregate Limit applies Per Project	yes	no
Premises/Operations	yes	no
Actions of Independent Contractors	yes	no
Products/Completed Operations	yes	no
Contractual Liability	yes	no
Explosion, Collapse or Underground (XCU) Hazards	yes	no

Owner included as an additional insured	yes	no
Individuals related to Owner included as additional insureds	yes	no
Manuscript additional insured wording per insurance requirements	yes	no
If no, additional insured coverage extends to cover liability arising out of:		
Owner's general supervision	yes	no
Products and completed operations	yes	no
Specimen of additional insured wording attached if other than manuscript wording in the insurance requirements	yes	no
No cross suits or cross liability exclusion	yes	no
Coverage for additional insureds is primary to Owner's coverage	yes	no
60 days notice of cancellation, nonrenewal, etc.	yes	no
Amount of Retention or Deductible		
Specify if Retention or Deductible applies per occurrence or claim		

2. Business Auto Liability

Insurer (precise name as per policy, not group name)
Best's Rating and Financial Size
Each Accident Limit

Any Auto (or Hired and Non-owned Autos, if no owned autos) yes no

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Contractual Liability	yes	no
60 days notice of cancellation, nonrenewal, etc.	yes	no
Amount of Retention or Deductible		
Specify if Retention or Deductible applies per accident or claim		

3. Workers Compensation and Employers Liability

Insurer (precise name as per policy, not group name)		
Best's Rating and Financial Size		
Statutory benefits as required by state or Federal law	yes	no
"Other States" coverage	yes	no
Employers liability	yes	no
Each accident limit		
Each employee limit-disease		
Policy limit-disease		
60 days notice of cancellation, etc.	yes	no
Amount of Retention or Deductible		
Specify if Retention or Deductible applies per accident or claim		

4. Contractors Pollution Liability

Insurer (precise name as per policy, not group name)		
Best's Rating and Financial Size		
Each Pollution Incident Limit		
Annual Aggregate Limit		
Other Limit(s)		
Coverage Form:	Claims Made	Occurrence
Covers Operations of Both Contractor and Subcontractors	yes	no
Contractual Liability	yes	no
60 days notice of cancellation, nonrenewal, etc.	yes	no
Amount of Retention or Deductible		
Specify if Retention or Deductible applies per occurrence or claim		

5. Umbrella Excess or Excess Liability

Insurer (precise name as per policy, not group name)		
Best's Rating and Financial Size		
Coverage Form:	Umbrella and Excess	Straight Excess
Each Occurrence Limit		
General Aggregate Limit (for other than products/completed operations and auto liability)		
Products/Completed Operations Aggregate Limit		

Underlying Schedule of Insurance includes:

Commercial General Liability	yes	no
Business Auto Liability	yes	no
Employers Liability	yes	no

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Owner included as an additional insured	yes	no
Individuals related to Owner included as additional insureds	yes	no
Manuscript additional insured wording per insurance requirements	yes	no
If no, additional insured coverage extends to cover liability arising out of:		
Owner's general supervision	yes	no
Products and completed operations	yes	no
Specimen of additional insured wording attached if other than manuscript wording in the insurance requirements	yes	no
No cross suits or cross liability exclusion	yes	no
Coverage for additional insureds is primary to Owner's coverage	yes	no
60 days notice of cancellation, nonrenewal, etc.	yes	no
Amount of Retention		
Retention applies per occurrence	yes	no

INSURANCE AGENT'S OR INSURER'S STATEMENT

I have reviewed the Contract's insurance requirements with the contractor named below. I hereby verify the above responses.

Name of Agent or Insurer:

Agency or Insurer Name:

Authorized Signature and Date:

Phone #:

Fax #:

E-mail:

CONTRACTOR'S STATEMENT

If awarded the contract, I will comply with the Contract's insurance requirements. I further agree to maintain property insurance on the machinery, tools and equipment which are owned, rented or leased by my firm and which are utilized in the performance of the services rendered under this Contract.

Contractor's Name:

Authorized Signature and Date:

Phone #:

Fax #:

E-mail:

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EXHIBIT A
CHANGE ORDER REQUEST FORMAT

PROJECT NAME: _____ DATE: _____

GENERAL CONTRACTOR: _____

SUBCONTRACTOR: _____

SUB-SUBCONTRACTOR: _____

C.O.R. ITEM OR WORK: _____

I. DIRECT PAYROLL LESS FRINGES, INSURANCE, TAXES*: _____

II. FRINGES, TAX, INSURANCE BURDEN ____ % OF PAYROLL: _____

III. TOTAL MATERIAL COSTS**: _____

IV. MATERIAL SALES TAX: _____

V. EQUIPMENT RENTALS (ATTACH COPY OF INVOICE): _____

VI. CONTRACTOR-OWNED EQUIPMENT**: _____

VII. PROFIT AND OVERHEAD 20% OF LINES I & III: _____

VIII. 8% OF LINE V (ONLY WITH INVOICE COPY): _____

IX. TOTAL ALL LINES: _____

X. SUBCONTRACTORS COSTS (ATTACH BREAKDOWN): _____

XI. 8% PROFIT & OVERHEAD ON SUBCONTRACTORS: _____

XII. TOTAL LINES IX, X, & XI: _____

XIII. BOND ____ % OF LINE XII: _____

XIV. TOTAL COST OF WORK: _____

*Provide Itemization of Labor Hours and Worker Classification

**Provide Itemization.

Change Order Request Format is Required for each Portion of Change Order Request Submission.

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EXHIBIT A

DESCRIPTION

All change orders shall be submitted in the change order request format (see Exhibit A) as set forth below:

1. Attach an itemization of labor hours. A certified payroll affidavit may be required to substantiate labor rates. The cost of foreman and superintendents may be added only when the change order makes necessary the hiring of additional supervisory personnel or makes their employment for time in addition to that required by the basic contract.
2. Labor burden percentage costs shall include all fringes, taxes, insurance, liabilities, workmen's compensation, unemployment, and any additional cost associated as labor burdens. Labor burden percentage rates are subject to approval of the Owner and is not subject to profit and overhead.
3. Attach an itemization of all materials used listing unit prices and extended prices.
4. Attach an itemization of equipment used and rental rates. If equipment is a rental, attach copy of the rental invoice. Rental equipment and contractor-owned equipment costs shall include all costs associated with the equipment, i.e. transportation, set-up, gas, and oil. Rental rates shall not exceed rates established by local rental companies and "MEANS DATA" rates.
5. Profit and overhead shall be considered full reimbursement for any additional expenses caused by the change order work. The Contractor shall agree to 20% profit and overhead markup on work by his own forces and 8% profit and overhead mark up on Subcontractors work. Allowances for overhead shall include but not limited to the costs for use of, small tools and consumables; trucks and trucking costs; maintenance and/or operations of Contractor's regular established office, branch office, and other facilities; resident and/or non-actively engaged supervision; time keepers; clerk; stenographer; watchmen; cost of correspondence; increased item of warranty under the change.
6. Profit and overhead at 8% may be added to equipment which is rented.
7. Only the actual added costs of the bond may be added to the change order amount. No further markup shall be allowed.
8. Change order requests shall not be considered unless they are submitted in proper format with all required and requested supporting documentation. All portions of the change shall use the change order request format.
9. For all work to be performed by a Subcontractor/Subcontractors, the Contractor shall furnish the Subcontractors itemized proposal which shall contain original signatures by an authorized representative of the Subcontracting firm. If requested by the Owner or Architect, proposals from suppliers or other supporting data to substantiate the Contractor's or Subcontractor's cost shall be furnished.
10. On changes resulting in a credit to the Owner, the credit shall be the net cost without profit overhead and profit.
11. Change order costs shall not exceed unit pricing as provided if applicable by Contract Documents.

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SECTION 000720
HCPSS SUPPLEMENTAL GENERAL TERMS AND CONDITIONS

2.1 CONTRACT AWARD

It is the intent of The Howard County Public School System (hereinafter "HCPSS" or the "Board") to award to the lowest responsive and responsible Bidder(s) meeting specifications. HCPSS retains the right to award in aggregate, item-by-item, group-by-group, in full or in part, make multiple awards, partial awards, to increase or decrease quantities where quantities are shown and may reject any bid which indicates any omission, contains alteration of form or additions, or imposes conditions, or offers alternate items and may make any award which is deemed in the best interest of the HCPSS or to make no award at all at its sole discretion.

The HCPSS shall be the sole authority as to whether Bidder's offer meets specifications or are an approved equal and further reserves the right to reject any or all proposals or waive any informality which may appear to be in its best interest. HCPSS further reserves the right to consider information other than price when evaluating bids. A contract may be awarded to the provider(s) whose proposal best meets HCPSS requirements and needs at the time of award and whose fee structure is in the best interest of HCPSS.

HCPSS reserves the right to make an award with or without negotiations or to request best and final offers or to make award with or without further review.

In the event of tie bids where all factors are equal, award shall be made to one of the tie bidders in the following order of preference: Howard County based Bidder, the out of county Bidder but incorporated in Maryland, and then the out of state based Bidder. In the event a tie bid still exists, the Director of Procurement and Materials Management or their designee, shall conduct a coin toss for selection of the potential Award Bidder(s) or seek a geographical, proportional or divided award of contract, whichever is in the best interest of HCPSS.

2.2 CONTRACT DOCUMENTS

Contract Documents consist of all solicitation documents, the specifications and scope of work and any applicable addenda, and any additional documentation issued. All of these materials and documents associated with this solicitation will be included in the Contract(s) which the Board of Education awards as a result of this solicitation and will become the contract. The offeror, by submitting its proposal, agrees that if awarded the contract that it will be bound under the contract to all the Terms and Conditions of the Contract Documents for any future goods and/or services awarded under this contract.

If Offeror's proposal is accepted and awarded, it will become incorporated and an integral part of the contract. However, Bidder's terms and conditions, unless expressly accepted by HCPSS, shall be excluded from the contract documents.

2.3 ORDER OF PRECEDENCE

In the event of an inconsistency among provisions of this Request for Proposal, the inconsistency shall be resolved by the following order of precedence:

- A. Specifications - Drawings
- B. HCPSS General Terms and Conditions (supplemental)
- C. AIA Documents (General Conditions, etc.)
- D. General Information
- E. Appendices, Exhibits, & Attachments

2.4 WAIVER OF RIGHT TO BID ON OTHER CONTRACTS

The Consultant agrees that it and its parent, its affiliates and subsidiaries, if any, waive the right to bid on any procurement contracts, of any tier, resulting from the services to be provided under this

agreement.

2.5 INITIATION OF WORK

The Offeror shall not commence performance of the services until it receives a formal written notice to proceed from HCPSS.

2.6 RESPONSIBILITY FOR CLAIMS AND LIABILITY

The Offeror shall be responsible for any personnel injury, loss of life, and damage to or loss of property arising from or related to Offeror's activities or those of its subcontractors, agents, or employees in connection with the goods and/or services required under this agreement. The Offeror shall indemnify and save harmless HCPSS, its elected officials, officers, agents and employees from and against all claims, suits, demands, judgments, expenses, actions, damages and costs of every name and description, including but not limited to attorney's fees arising out of or resulting from its negligent or wrongful performance or failure of performance of the services of the Offeror under this agreement or the activities conducted or required to be conducted by the Offeror under this agreement, including its subcontractors, agents, or employees.

2.7 BILLING AND PAYMENT

The awarded bidder shall submit invoices to the Howard County Public School System, (Name of Department), 10910 Clarksville Pike, Ellicott City, MD 21042, Attn: (Name of Contact), at the completion of each job. Invoices must contain the following information:

- a) Purchase Order Number
- b) Name of school
- c) Description of work along with quantities
- d) Start date and completion date
- e) Itemized breakdown of project costs to include labor and materials.
- f) Total due

2.8 INSURANCE

The Offeror has in force, or shall obtain, and will maintain insurance for the full term of the contract (including any executed renewals) in not less than the amounts specified and accordance with the requirements contained in Section 000601 Insurance Requirements.

The awarded bidder shall reimburse, indemnify, and hold harmless the Board for all losses to the Board, including attorney's fees and cost resulting from negligence of the contractor in the performance of this contract, and for all losses to the Board resulting from non-performance thereof, except those losses otherwise specifically excluded by the Board.

2.9 SUBCONTRACTING OR ASSIGNMENT

It is mutually understood and agreed that awarded bidder(s) shall not assign, transfer, convey, sublet, or otherwise dispose of their contract or their rights, title or interest, therein, or their power to execute such contract in whole or in part to any other person, firm, or corporation, without the previous written consent of the HCPSS' Purchasing Director, but in no case shall such consent relieve the contractor from their obligation, or change the terms of the contract or purchase order.

Assignment or subcontracting without the written approval of HCPSS will be cause for termination.

In the event that some or all of the services and/or goods under this solicitation are permitted to be

subcontracted, the bidder shall identify all proposed subcontractor/sub-consultant who will be furnishing services and/or under the terms of this solicitation. Subcontractor/sub-consultants shall conform in all respects to the applicable provisions specified for the prime contractor and shall be subject to approval by HCPSS. If a subcontractor/sub-consultant is determined to be unacceptable by HCPSS, the contractor shall substitute an acceptable subcontractor/sub-consultant with no change in any contract unit prices or overall contract sum. If a firm fails, within a timely manner, to propose another subcontractor/sub-consultant to which HCPSS has no objection, HCPSS reserves the right to reject the proposal. The contractor will use only those subcontractor/sub-consultants approved by HCPSS. All subcontractor/sub-consultants shall comply with all federal and state laws and regulation which are applicable to the services covered by the subcontractor and shall include all terms and conditions set forth herein which apply with equal force to the subcontractor/sub-consultant, as if they were the contractor referred to herein. The contractor is responsible for the contract performance, whether or not subcontractor/sub-consultants are used.

2.10 CHANGES ALTERATIONS, OR MODIFICATIONS IN THE SERVICES

HCPSS shall have the right, at their discretion, to change, alter, or modify the services provided for in this agreement and such changes, alterations, or modifications may be made even though it will result in an increase or decrease in the services of the awarded bidder or in the contract cost thereof.

If such changes cause an increase or decrease in the awarded bidder's cost of, or time required for, performance of any service under this contract, whether or not changed by an order or amendment, an equitable adjustment shall be made and the contract shall be modified in writing accordingly. Any claim of the awarded bidder(s) for adjustment under this clause must be asserted in writing with 30 days from the date of receipt by the awarded bidder(s) of the notification of change unless the project manager or his duly authorized representative grants a further period of time before the date of final payment under the contract.

No services for which an additional cost or fee will be charged by the awarded bidder(s) shall be furnished without prior written authorization of HCPSS.

2.10 DELAYS AND EXTENSIONS OF TIME

The awarded bidder(s) shall execute the work continuously and diligently and no charges or claims for damages shall be made by the awarded bidder(s) for any delays, acceleration, or hindrance, from any cause whatsoever, during the progress of any portion of the services specified in this agreement. Such delays, acceleration, or hindrances, if any, may be compensated for by an extension of time for such reasonable period as HCPSS may decide. Time extensions may be granted only for excusable delays such as delays beyond the control and without the fault or negligence of the awarded bidder(s)

2.11 REMEDIES AND TERMINATION

a. Correction of Errors, Defects, and Omissions - The awarded bidder(s) agrees to perform work as may be necessary to correct errors, defects, and omissions in the services required under this agreement without undue delays and without cost to HCPSS. The acceptance of the work set forth herein by HCPSS shall not relieve the awarded bidder(s) of this responsibility.

b. Set-Off - HCPSS may deduct from and set-off against any amounts due and payable to the awarded bidder(s) any back-charges or damages sustained by HCPSS by virtue of any breach of this agreement by the awarded bidder(s) to perform the services or any part of the services in a satisfactory manner. Nothing herein shall be construed to relieve the awarded bidder(s) of liability for additional construction and design or other costs, expenses, and damages resulting from a failure to satisfactorily perform the services. Nothing herein shall limit the liability of the awarded bidder(s) for damages and HCPSS may affirmatively collect damages from the awarded bidder(s).

c. **Termination for Cause** - If the awarded bidder(s) fails to fulfill its obligations under this contract properly and on time, otherwise violates any provision of the contract, HCPSS may terminate the contract by providing thirty (30) days' written notice to the awarded bidder(s). The notice shall specify the acts of omissions relied on as cause for termination. All finished or unfinished supplies and services provided by the awarded bidder(s), shall at HCPSS's option, become HCPSS property. HCPSS shall pay fair and equitable compensation for satisfactory performance prior to receipt of notice of termination, less the amount of damages caused by awarded bidder's breach.

If the damages are more than the compensation payable to the Consultant, the Consultant will remain liable after termination and HCPSS can affirmatively collect damages.

d. **Termination for Convenience** - HCPSS may terminate all or any part of the work required under this contract for the convenience of HCPSS by providing ninety (90) days' written notice. In the event of such termination, the contract manager shall determine the costs the awarded bidder has incurred to the date of termination. The awarded bidder(s) shall not be reimbursed for any anticipatory profits which have not been earned up to the date of termination. The awarded bidder(s) agrees that the awarded bidder(s) does not have the right to termination for convenience.

e. **Termination for Non-Appropriation of Funds:** HCPSS may terminate this contract, in whole or in part, due to insufficient funding with thirty (30) days' written notice to the awarded bidder(s). HCPSS shall pay for all of the purchases and services, if any, incurred up to the date of the termination notice.

f. **Obligations of Awarded Bidder(s) upon Termination** - Upon notice of termination as provided above, the awarded bidder(s) shall:

- a) Take immediate action to orderly discontinue its work and demobilize its work force to minimize the occurrence of costs.
- b) Take such action as may be necessary to protect the property of HCPSS, place no further orders or subcontract, and assign to HCPSS in the manner and to the extent directed by HCPSS all of the right, title and if ordered by HCPSS, possession and interest of awarded bidder(s) under the orders or subcontracts terminated.
- c) Deliver to HCPSS all materials, equipment, data, drawings, specifications, reports, estimates, and such other information accumulated by the awarded bidder(s) which has been or will be reimbursed under this agreement after taking into account any damages that may be payable to HCPSS. Title to such items shall be transferred to HCPSS.

g. **Remedies Not Exclusive** - The rights and remedies contained in this general condition are in addition to any other right or remedy provided by law, and the exercise of any of them is not a waiver of any other right or remedy provided by law.

2.12 RESPONSIBILITIES AND WARRANTIES OF CONSULTANT

- a. The awarded bidder(s) (also referred to herein as "Consultant") shall perform the services with that standard of care, skill, and diligence normally provided by a consultant, or professional in the performance of services similar to the services hereunder.
- b. Notwithstanding any review, approval, acceptance, or payment for the services by HCPSS, the Consultant shall be responsible for professional and technical accuracy of its work furnished by the Consultant under this agreement.

- c. HCPSS's review, approval, or acceptance of, nor payment for, any of the services required under this contract shall be construed to operate as a waiver of any rights under this contract or of any cause of action arising out of the performance of this contract, and the Consultant shall be and remain liable to HCPSS in accordance with applicable law for all damages to HCPSS caused by the Consultant's negligent performance of any or the services furnished under this contract.
- d. Consultant warrants that it is qualified to do business in the State of Maryland and that it will take such action as, from time-to-time hereafter, may be necessary to remain so qualified.
- e. Consultant warrants that it is not in arrears with respect to the payment of any monies due and owing the county or state, of any department or agency thereof, including but not limited to the payment of taxes and employee benefits, and that it shall not become so in arrears during the term of this agreement.
- f. Consultant warrants that it shall comply with all federal, state, and local law, ordinances and legally enforceable rules and regulations applicable to its activities and obligations under this agreement.
- g. Consultant warrants that it shall procure, at its expense, all licenses, permits, insurance, and governmental approval, if any, necessary to the performance of its obligations under this agreement.
- h. The Vendor agrees that the equipment or supplies furnished under this award and or contract shall be covered by the most favorable commercial warranties the vendor gives to any customer for such equipment or supplies and that the right and remedies provided herein are in addition to and do not limit any rights afforded to the HCPSS by any other clauses of the contract. All equipment shall in the very least carry a standard factory warranty against defects in parts and workmanship for the time period stated in the product warranty specifications and/or for one (1) year from date of acceptance
- i. Consultant warrants that the facts and matters set forth hereafter in the "Contract Affidavit" which is attached to this agreement and made a part hereof are true and correct.

2.14 DISPUTES; GOVERNING LAW AND VENUE

Except as otherwise provided in these contractual documents, any claim, dispute, or other matter in question concerning a question of fact shall initially be referred to the HCPSS Project Manager.

Any claim, dispute, or other matter in question concerning a question of fact referred to the Project Manager that is not disposed of by agreement shall be referred to the purchasing officer, HCPSS, who shall reduce his decision to writing and mail or otherwise furnish a copy to the Consultant. The decision of HCPSS shall be final and conclusive.

The contract shall be governed by the laws of the State of Maryland and nothing in these Contract Documents shall be interpreted to preclude the parties from seeking, after completion or termination of the agreement, any and all remedies provided by law. Any lawsuits arising out of such Contract Documents shall be filed in the appropriate state court of competent jurisdiction located in Howard County, Maryland.

2.15 EXAMINATION OF RECORDS

The Consultant agrees that the auditor of HCPSS or any of their duly authorized representatives shall, have five (5) years after the final renewal expiration date under this contract, have access to and the right to examine any directly pertinent books, documents, papers, and records of the Consultant involving transactions related to this contract.

2.16 DISSEMINATION OF INFORMATION

During the term of this agreement, the Consultant shall not release any information related to the services or performance of the services under this agreement nor publish any final reports or documents without the prior written approval of the HCPSS contract manager.

2.17 NON-HIRING OF OFFICIALS AND EMPLOYEES

No official or employee of HCPSS whose duties as such official or employee include matters relating to or affecting the subject matter of this contract, shall during the pendency and term of this contract and while serving as an official or employee of HCPSS become or be an employee of the contractor or any entity that is a subcontractor on this contract.

2.18 CONTINGENT FEE PROHIBITION

The Consultant warrants that they have not employed or retained any person, partnership, corporation, or other entity, other than a bona fide employee or agent working for the consultant, to solicit or secure this agreement, and that they have not paid or agreed to pay any person, partnership, corporation, or other entity, other than a bona fide employee or agent, any fee or any other consideration contingent on the making of this agreement.

For breach or violation of this warranty, HCPSS shall have the right to terminate this agreement without liability, or, at its discretion, to deduct from the contract price or consideration, or percentage, brokerage fee, gift or contingent fee.

2.19 OWNERSHIP AND USE

All materials, including but not limited to training documents, program and software, diagnostic equipment and energy information systems furnished by Offeror to HCPSS in connection to this Program shall remain the property of the School System. No materials will be returned to the Contractor at the end of the contract period including any that are copyrighted. HCPSS shall have the right to continue using all and any control equipment and document materials for as long as the School System desires to do so.

All documents, materials or data developed as a result of this contract shall be the property of HCPSS. Therefore, HCPSS has the right to use and reproduce any documents, materials, and data, including confidential information, used in, or developed as a result of this contract. HCPSS may use this information for its own purposes or use it for reporting to state or federal agencies. The awarded bidder(s) must keep confidential and warrants that it has title to or right of use of all documents, material, or data used or developed in connection with this contract.

2.20 ADHERENCE TO SCHOOL SYSTEM POLICIES AND STATE AND FEDERAL REGULATIONS

The Offeror and any Sub-Offeror personnel assigned to this project must be cognizant and

abide by School System policies and operating procedures at all times. Health and safety policies and procedures will not be compromised. Proposed programs must not violate or conflict with the School System policies and procedures. Moreover, the Contractor shall be cognizant and enforce all federal and state regulations and policies and all proposals and subsequent work shall adhere to known regulations and policies.

2.21 SEX OFFENDER NOTIFICATION

Maryland law requires certain sex offenders to register with the local law enforcement agency; See *Maryland Annotated Code*, Criminal Procedure Article, §11-704. One of the purposes of this law is to inform school systems when a Registered Sex Offender is residing or working in the area. When the sex offender registers, the local police are required to notify the Superintendent of Schools, and the Superintendent, in turn, is required to send a notice to school principals.

As a contractor/consultant working for HCPSS we require that you do not employ Registered Sex Offenders to work on projects for our school system if they, as a result, are required to perform delivery, installation, repair, construction or any other kind of services **on HCPSS property**. Further, Maryland Law requires that any person who enters into a contract with a county board of education "may not knowingly employ an individual to work at a school" if the individual is a registered sex offender; See §11-722 Criminal Procedure Article. An employer who violates this requirement is guilty of a misdemeanor and if convicted may be subject to up to five years imprisonment and/or a \$5,000 fine.

Each contractor shall screen their workforces to ensure that a Registered Sex Offender does not perform work at a county public school and also ensure that a subcontractor and independent contractor conducts screening of its personnel who may work at a school. The term "work force" is intended to refer to all of the contractor's direct employees and subcontractors and/or independent contractors it uses to perform the work. Violations of this provision may cause HCPSS to take action against the contractor up to and including immediate termination of the contract for cause.

Additionally, § 6-113 of the Education Article further requires that a contractor or subcontractor for a local school system may not knowingly assign an employee to work on school property with direct, unsupervised, and uncontrolled access to children, if the employee has been convicted of, or pled guilty or nolo contendere to, a crime involving a sexual offense, child sexual abuse and crimes of violence. The Contractor shall submit to HCPSS a listing of any employees assigned to perform under this agreement and certify that the necessary criminal history records checks have been conducted and that all assigned employees comply with the requirements.

2.22 CRIMINAL HISTORY BACKGROUND CHECKS

All employees, agents, or representatives of the awarded bidder(s) who will be performing work on any phase of the contract arising out of this Bid may be subject to a criminal history background check by HCPSS. Such persons, if requested by the school system, must provide fingerprints and other required information to facilitate such a check, as well as pay for the necessary fees to obtain such a check from the federal or state government. At the completion of a background check, the school system may, at its sole discretion, decide that a particular employee, agent, or representative of the Contractor be barred from school system property.

2.23 ETHICS

The Board of Education of Howard County has adopted an Ethics policy. Required by state statute, these Ethics regulations cover members of the Board of Education, the Superintendent, and all employees; and

it specifies limits of participation of these individuals with entities doing business with The Howard County Public School System. For a copy of the regulations, please contact the Purchasing Office, Howard County Department of Education (410) 313-6644.

In accordance with Board Policy 2070-Ethics, offerors are hereby notified that the giving or offering of a gift or series of gifts to a Board official or employee is improper and may result in disqualification from future work on the grounds that the Offeror is no longer a responsible Offeror.

2.24 DEBARMENT STATUS

By submitting their proposal, the offeror(s), certify that they are not currently debarred by the State of Maryland or another governmental entity from submitting bids or proposals on contracts for the type of products or services covered by this solicitation, nor are they an agent of any person or entity that is currently so debarred.

2.25 TOBACCO FREE AND ALCOHOL/DRUG FREE ENVIRONMENT

The Board of Education of Howard County maintains a tobacco, alcohol/drug free environment. The sale or use of tobacco, alcohol or drugs, in any form, or related product, is prohibited in school buildings and grounds at all times. Persons found violating this policy will be requested to remove the product and themselves from school premises. Repeated use or sale of tobacco on HCPSS property, or any use or sale of alcohol, misuse of other drugs, or any use of illegal drugs by a contract employee while servicing this contract or while on HCPSS property will result in a prohibition of that employee from servicing the HCPSS contract. Repeated instances of violations by contract employees may result in termination of the contract for cause.

2.26 INDEMNIFICATION

The Awarded Bidder(s) shall be responsible for any loss, personal injury, expense, death and/or any other damage which may occur by reason of its acts, negligence, willfulness, or failure to perform any of its obligations under this agreement. Furthermore, any acts on the part of any agent, director, partner, servant or employee of the Contractor are deemed to be the Contractor's acts.

Contractor agrees to indemnify and hold harmless the Howard County Public School System and its Board, employees, agents, representatives, and students from any claim, damage, liability, expense, and/or loss, including defense costs and attorney fees, arising directly or indirectly out of the Contractor's performance under this agreement. The indemnification obligation of the Contractor shall include but shall not be limited to injuries to individuals and property of individuals who are not parties to the contract. In addition, the indemnification obligation of the Contractor shall cover the acts or omissions of any permitted subcontractors hired by the Contractor. Furthermore, the indemnification obligation of the Contractor shall survive termination of the contract for any reason.

2.27 PERMITS, CODES AND LAWS

All work shall be in accordance with all State, County, Federal, and Governmental rules, regulations, and laws. The contractor is responsible for assuring that all of their employee and services provided under the contract follow and comply with any such requirements pertaining and applicable to the service being provided under this contract. All costs to comply with these requirements shall be paid by the contractor and included in the contractor's Bid price.

2.28 RIGHT TO STOP WORK

If HCPSS determines, either directly or indirectly, that the Contractor's performance is not within the specifications, terms or conditions of this bid and/or that the quality of the job is unacceptable, HCPSS has the right to stop work. The stoppage of work shall continue until the default has been corrected and/or corrective steps have been taken to the satisfaction of HCPSS. HCPSS also reserves the right to e-bid this contract if it is decided that performance is not within the specifications as set out.

2.29 NON-DISCRIMINATION

In the execution of the obligations and responsibilities hereunder, included, but not limited to hiring or employment made possible by or relating to the Contract Documents, or the provisions of goods and services provided, the awarded bidder(s) shall not discriminate against persons on the basis of race, color, creed, national origin, political affiliation, religion, physical or mental disability, age, gender, marital status, or sexual orientation. For more information, contact the Equity Assurance Office of the Howard County Public School System at 10910 Route 108, Ellicott City, MD 21042 or call 410-313-6654.

HCPSS is fully committed to the Americans with Disabilities Act (ADA) which guarantees non-discrimination and equal access for persons with disabilities in employment, public accommodations, transportation, and all County programs, activities, and services. HCPSS government contractors, subcontractors, vendors, and/or suppliers are subject to this ADA policy. All individuals having any County contractual agreement must make the same commitment. Your acceptance of the awarded contract acknowledges your commitment and compliance with ADA.

2.30 INDEPENDENT CONTRACTOR

It is expressly understood and agreed that this Agreement is not intended and shall not be construed to create the relationship of agent, servant, employee, partner, joint venture, or association between the parties. The awarded bidder(s) will not be entitled to and expressly disclaims any right to worker's compensation, retirement, insurance, or other benefits afforded to employees of HCPSS.

2.31 PRICE ADJUSTMENTS

HCPSS will only consider adjustments on labor rates based only upon federal minimum wage increases and decreases in the Consumer Price Index (CPI-W), Baltimore Region, as published by the Bureau of Labor Standards. Requested increases above a 5% cap will not be considered. In order to receive consideration for a price increase, the Contractor must submit to The Howard County Public School System, sixty (60) days prior to the contract expiration date, a statement of any change in the hourly rate wage actually to be paid to its employees during the renewal term.

Adjustments will be calculated by comparing the current index with the previous year's index so as to determine the change in index points. The point change will then be divided by the price index to obtain the percentage of change. The percentage of change will then be multiplied by .75 to obtain the adjustment to be applied to the current prices.

The HCPSS will also consider adjustments based on fees outside of the control of the Contractor, such as manufacturer price increases. However, such increases will be a "pass through" to the Howard County Public School System with no markup allowed. For such changes to be considered by the Howard County Public School System, documentation from the manufacturer (or any other applicable party) assessing a cost increase must accompany a written request from the Contractor. The Howard County Public School System will then review

the request and advise the Contractor of approval or disapproval of the price change request. Price increase requests will not be considered if not accompanied with the proper information.

2.32 CONTRACTOR PERFORMANCE/EVALUATION SCORECARD

Upon completion of a project/service or at any time during the project/service, the awarded contractor shall receive a performance evaluation scorecard rating the contractor's performance on the project/service, see Appendix G. The evaluation scorecard will become part of the contractor's permanent file. A sample Contractor Performance/Evaluation Scorecard is included with the bid documents.

The evaluation scorecard shall include the following performance indicators: Quality of Work, Responsiveness, Professionalism, Resources, Schedule Management, Quality Control, Deficiency Resolution, Submittal Management, Training, Appearance, Security, Safety, Utility Conservation, Disruptions, Quality of Materials, Emergency Response, Hazardous Materials, Innovation, Teamwork, Cost Management, Billing, Compliance. A contractor shall have up to 3 weeks after notification to appeal, challenge or otherwise dispute the scorecard results. After the 3-week period, the scorecard shall be considered final and accepted by the contractor.

A contractor receiving a 70% or less overall evaluation scorecard rating for a project/service may be disqualified for bidding on any future project/service with the HCPSS for a period of three (3) years and/or for the remaining contract term including renewal options.

2.33 ANTI-BRIBERY

Awarded bidder(s) warrants that neither it nor any of its officers, directors, or partners nor any of its employees who are directly involved in obtaining or performing contracts with any public body has been convicted of bribery, attempted bribery, or conspiracy to bribe under the laws of any state or of the federal government.

2.34 LICENSES AND QUALIFICATIONS

Bidders must be licensed to do business in the State of Maryland and shall submit proof upon request.

HCPSS reserves the right to require that the contractor demonstrates that it has the skills, equipment and Other resources to satisfactorily perform the nature and magnitude of work necessary to complete the project within the proposed contract schedule.

2.35 BINDING AGREEMENT

This agreement supersedes any and all understandings or agreements, either oral or written, between the Board and the contractor, and constitutes the entire binding agreement upon the parties and their respective successors.

2.36 SIGN-IN REQUIRED AT HCPSS BUILDINGS

Contractors will be required to sign-in and sign-out with the Front Office at each site upon arrival for assigned games. As well, contract employees shall conduct themselves in a professional manner while on The Howard County Public School System's premises. Any employee found to disregard the nature of the school system's surroundings shall be removed from the premises and may be prohibited from further servicing the HCPSS contract.

2.37 MOST FAVORABLE TERMS

If more favorable terms are granted by the contractor to any similar agency in any state in a contemporaneous agreement let under the same or similar financial terms and circumstances for comparable supplies and services, the more favorable terms will be applicable under this agreement between HCPSS and the contractor.

2.38 NON-COLLUSION

By signing and submitting a Bid/proposal under this solicitation, the vendor certifies that it has neither agreed, conspired, connived, or colluded to produce a deceptive show of competition in the compilation of the bid or offer being submitted herewith; bidder also certifies that it has not in any manner, directly or indirectly, entered into any agreement, participated in any collusion to fix the bid price or price proposal of the bidder or vendor herein or any competitor, or otherwise taken any action in restraint of free competitive bidding in connection with the contract for which the bid or offer is submitted.

2.39 SPECIFICATIONS AND SCOPE OF WORK

The specifications listed herein may or may not specify all technical requirements which are needed to achieve the end result. When accepting the award, the bidder assumes the responsibility of accomplishing the task requested in this document. Any omission of parts, products, processes, etc. in the specifications are the responsibility of the bidder and HCPSS will not bear the responsibility of their omission. If omissions in the specifications are discovered and these omissions will impact on the contract price then it is the responsibility of the bidder to note these omissions in writing to the purchasing representative, prior to accepting the award. If these omissions are not properly noted in writing prior to award, then the bidder's silence is deemed as full and complete acceptance and any additional costs will be borne by the bidder.

2.40 BRAND NAME OR EQUAL

Where a particular manufacturer's brands or models are referenced, it is to be interpreted as being descriptive and not restrictive and is to indicate the quality and characteristics of products that will be satisfactory. Bids will be considered on models or brands or products of manufacturers other than those cited if accompanied by specifications, catalogs, test reports, brochures, or other descriptive literature and supporting data, sufficient in detail to permit evaluation and determination that the item offered fully meets the salient characteristics and is of equal type and equal or better quality without reservations or further reference. It is the responsibility of the Bidder to provide the foregoing documentation with the Quote at the date and time set forth for submission. The burden of proof that proposed alternates are in fact equal or better falls on the Bidder and proof must be to the satisfaction of HCPSS. Quotes received for proposed equal/substitute items without the required documentation to support the bidders claim will not be considered responsive. It is not the responsibility of HCPSS to locate or secure any further information regarding the proposed alternate product.

Howard County Public Schools reserves the right to request any proposed equipment or supplies free of charge for a reasonable testing period to determine its suitability to the School Systems needs and requirements.

The Howard County Public School System shall be the sole authority as to whether proposed substitute items meet specifications or are an approved equal and further reserves the right to reject any or all proposals or waive any informality which may appear to be in its best interest. The HCPSS decision of approving or disapproving of a proposed equal shall be final.

When only one manufacturer or model is referenced, the absence of anything to the contrary will be interpreted as a bid on the exact item specified. Bidders offering proposed equal/substitute items other than those specified must state the product name, model and manufacturer.

Where several manufacturers of models are referenced as being equally acceptable and the bidder does not indicate what particular model or brand he is bidding on, the Purchasing Office shall have the right to select the brand or model referenced.

2.41 PROPOSED SUBSTITUTIONS

Bidders offering items other than those specified must state the product name, manufacturer, Stipulated cost adjustment (add, Deduct or no charge) in the space provided on the form of proposal and, as well,

submit detailed technical specifications for each item. All data submitted must contain sufficient information to facilitate equating the offer.

No Substitutions will be considered prior to receipt of the Bid. The award will be made solely on the basis of the Base Bid, Alternate Bids with regard to proposed substitutions and deducts when requested.

Bidders bidding on a substitute MUST submit product literature with their bid. Referencing literature shall be accompanied by complete submittals in accordance with the specification of catalogs, test reports, brochures, and other descriptive literature and supporting data, sufficient in detail to permit evaluation of the proposed substitution without further reference. All proposed substitutions shall document and demonstrate meeting or exceeding the project requirements.

Bids received for items without the required literature and sufficient documentation for making a determination will not be considered responsive.

The Howard County Public School System shall be the sole authority as to whether items meet specifications or are an approved equal and further reserve the right to reject any or all proposals or waive any informality which may appear to be in its best interest.

2.42 REFERENCES

The Howard County Public School System reserves the right to contact any references available in order to evaluate product/service. Cited references must be able to confirm, without reservation, your company's ability to provide the level of service/product mandated in this solicitation. References from other public school systems or governmental agencies are preferred. Howard County Board of Education also reserves the right to request additional references as needed and to reject any bid based on an unsatisfactory reference.

2.43 DAMAGE

Successful Bidders will be held responsible for and be required to make good at their own expense, any and all damage done or caused by the Bidder or by its employees while executing the contract.

2.44 PROCUREMENT CARD

The Howard County Public School System utilizes a Purchasing Card Program. Purchases resulting from this solicitation may be made through a Visa/Mastercard credit card. Bidders are prohibited from charging any additional costs/fees above and beyond the established contract prices to process such orders. Bidders lacking Visa/Mastercard capability should contact the Purchasing Office.

2.45 TRADE DISCOUNTS

All prices offered must be the lowest net price after trade discounts have been applied. Bids offering a percentage off list prices will not be accepted unless: otherwise specified.

2.46 TIME DISCOUNTS

Prompt payment discounts are solicited and will be treated as follows:

Discounts offered which allow a minimum of twenty (20) days to qualify will be deducted from prices offered in the bid for the purpose of determining the lowest price offered.

Discounts offering less than twenty (20) calendar days will not be deducted from the price offered for the purpose of determining the lowest price but will be taken if payment is made within the discount period.

In computing prompt payment discounts, the date of delivery of the supplies or completion of services or receipt of correct invoices in the offices specified will be considered and the later date prevail.

2.47 IDENTIFICATION

All contractor personnel, working in or around buildings designated under this contract, shall have a valid driver's license or photo ID in their possession at all times and wear distinctive uniform clothing while on the school system's premises.

Contractors will be required to provide identification and sign-in and sign-out at the front office at each site on a daily basis during the course of each project.

The contractor shall determine and provide additional personal protective equipment required for the safe performance of work. Protective clothing, equipment, and devices shall, as a minimum, conform to Occupational Safety and Health Administration (OSHA) standards for the products being used. Vehicles used by the contractor must be identified in accordance with state and local regulations and, if applicable, be labeled with an appropriate license number identifying the company's business license.

2.48 BEHAVIOR OF CONTRACTOR EMPLOYEES

Howard County Public School System is committed to providing a work and study environment that is free from discrimination and harassment based on race, color, religious creed, ancestry, national origin, age, sex, marital status, handicap, pregnancy, or status as a disabled veteran or veteran of the Vietnam era. Behavior contrary to this philosophy, which has the purpose or effect of creating an intimidating, hostile, or offensive environment, will not be tolerated by HCPSS, and it is the Contractor's responsibility to ensure that such behavior by its employees, agents, and subcontractors does not occur. The policy extends to maintaining an environment free from sexual harassment. Therefore, sexual advances or sexual remarks, requests for sexual favors, and other verbal or physical conduct of a sexual nature must not be condoned or permitted by the Contractor. This prohibition extends to such harassment within the employment context as well as harassment of students, staff, and visitors to the HCPSS. It should be assumed that all sexual behavior by the Contractor's employees, agents, and subcontractors on any campus or facility of HCPSS, whether owned, operated, maintained, or leased by the HCPSS, is improper and unwelcome. The Contractor will also ensure that all technicians who work with HCPSS users exhibit a high degree of professionalism in their dealings with those users. The Contractor's employees and subcontractors shall be subject to and comply with all applicable HCPSS rules, regulations and policies which shall include those regulations relating to safety, security, and campus parking. If deemed necessary, HCPSS reserves the right to demand the removal of any of the Contractor's employees/subcontractors from duty on its premises as a result of their violation of the standards set forth herein.

2.49 SCHOOL CALENDAR

The school calendar shall acquaint bidders with the days schools have scheduled closings. It shall be the successful Bidder's responsibility to become aware of nonscheduled closings due to inclement weather or other causes.

See <http://www.hcpss.org/calendar/> for current calendar.

2.50 LEAD PAINT: 40 CFR PART 745 RENOVATION, REPAIR, AND PAINTING RULE

Any contractor disturbing known lead-based paint surfaces of greater than 6 square feet (interior) and 20 square feet (exterior) in HCPSS facilities constructed prior to 1978 and within areas housing children under the age of 6 years shall comply with Environmental Protection Agency's (EPA) 40 CFR Part 745, herein known as the "Rule". The Contractor shall be a certified firm, employ a certified renovator, and follow proper lead paint work practices.

A certified firm is a company who has successfully registered with the EPA. A certified renovator is an individual from the firm who successfully completed an accredited EPA 8-hour class per the Rule.

Examples of impacted areas may include kindergarten classrooms, early childhood classrooms, restrooms commonly used by children under 6 years of age, elementary cafeterias and gymnasiums, before and after

care rooms, and high school teen's childcare environments. Exterior work is impacted by this Rule if within 10 feet of windows and/or doors to an interior classroom housing children under the age of 6 or an outdoor activity area, such a macadam or mulched play area.

HCPSS will identify the presence or absence of lead base paint within affected work areas and documentation will be made available upon request.

HCPSS will provide project notification and educational pamphlets as required per the Rule.

Contractor is to notify HCPSS project manager and/or Office of Safety, Environment, and Risk Management when work area is ready for a Cleaning Verification Procedure as defined by the Rule. HCPSS will provide a certified third party to perform dust sampling. EPA's visual verification card will not be accepted.

The Contractor's Certified Renovator shall be present as per the Rule during posting of signs, work area setup, and work area clean-up. Upon a request, the Certified Renovator shall be able to physically respond on-site within two hours. HCPSS project manager and/or Office of Safety, Environment, and Risk Management will sign related documents for the Contractor as required per the Rule.

2.51 BARRICADES AND WARNING SIGNS

The Contractor shall provide, erect, and maintain all necessary barricades, suitable and sufficient lights, danger signals, signs and other traffic control devices, and shall take all necessary precautions for the protection of the work and safety of the public. Effective barricades shall protect all highways and other department facilities closed to vehicular traffic, and obstructions shall be illuminated during hours of darkness with electric lights.

2.52 PRESERVATION AND RESTORATION OF PROPERTY

The Contractor shall be responsible for all damage or injury to property or any character during the execution of the work, resulting from any act, omission, neglect or misconduct in his manner or method of executing said work satisfactorily, or due to his non-execution of said work, or at any time due to defective work or materials; and said responsibility shall not be released until the work has been completed and accepted. When or where any direct or indirect damage or injury is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work or in consequence of the non-execution thereof on the part of the Contractor, he shall restore, at his own expense, such property to a condition similar to, or equal to, that existing before such damage or injury was done, by repairing, rebuilding, or otherwise restoring as may be directed, or he shall make good such damage or injury in an acceptable manner. In case of the failure to make good such damage or injury, the Board of Education may, upon 48 hours' notice, proceed to repair, rebuild, or otherwise restore such property as may be deemed from any monies due to which may become due the Contractor under this contract.

Further deterioration of the property site, over and above the estimated repair cost, as a result of weather, vandalism, etc. shall be negotiated for repair using a square foot, lineal foot, or square yard basis.

Contractor is responsible for seeding and strawing all disturbed areas. Seed mix MUST be certified seed approved by the contract manager prior to application.

2.53 FINAL CLEANING

Upon completion of the work specified in the contract and before final payment will be made, the work area and all other adjoining areas occupied by the Contractor during the performance of said contract shall be cleaned of all surplus and discarded materials, spilled materials, and excess materials left from the permanent work as a result of the Contractor's operations. The areas mentioned above will be restored, as they existed prior to work.

2.54 INSPECTION OF PREMISES

If a site visit is recommended or required, each bidder is responsible for requesting access to the site(s) prior to submitting a bid in order to observe the existing conditions affecting the work, and to obtain such details as, but not limited to the availability of utilities or the precise dimensions of the area(s) involved. No allowance will be made to the successful Bidder, at a later date for additional work cost required because of his/her failure to visit the site and to acquaint themselves with all the requirements and conditions for properly estimating the cost of successfully performing the work.

2.55 BUILDING/SITE OCCUPANCY

Under no circumstances shall any driveway, access road or walkway be blocked by the Contractor's vehicles to prohibit use of, or disruption to pedestrian or vehicular traffic to the buildings or site.

2.56 MAINTENANCE OF MANPOWER

Any staff changes of a proposed team for this contract must be reported to the HCPSS contract manager and reviewed and approved by HCPSS prior to any reassignments being made.

2.57 CARE OF PREMISES

Precautions taken for safety and protection shall be in accordance with the mandatory requirements of the safety codes prevailing within the jurisdiction in which the work is to be performed. During the performance of the Contract, the Contractor shall take the necessary precautions to protect all areas upon which, or adjacent to which, work is performed as a part of this Contract. Any damage caused as a result of Contractor's neglect, directly or indirectly, shall be repaired to the School System's satisfaction at the Contractor's expense. If the Contractor fails or refuses to make such repair or replacement, HCPSS will determine a cost and the Contractor shall be liable for the cost thereof, which may be charged or deducted from the Contractor price.

2.58 CONTRACTOR'S COORDINATOR

The Contractor shall provide, at least one person who shall be designated as the Project Manager and have one (1) 100% on-site Supervisor. The Project Manager shall be the Contractor's agent for reviewing the project in the field when required with the school system's representatives and shall be the channel for all inquiries concerning work in progress or work to be started under this Contract. The Supervisor shall manage the job on-site and supervise all on-site personnel.

The Project Manager should be readily available to review all phases of the project when requested by the school system. The Contractor shall notify the school system for his approval of any changes in persons designated as Project Manager.

2.59 PRIME CONTRACTOR SUPERVISORY RESPONSIBILITIES

The contractor shall be responsible for supervising and directing the work under this contract and all subcontractors that he may utilize, using his best skill and attention. Subcontractors who perform work under this contract shall be responsible for the acts and omissions of his subcontractors and of persons employed by them as he is for the acts and omissions of his own employees. The contractor will be responsible for ensuring that the supervisor or lead worker, including subcontractors, can communicate with School System's staff in English in fulfilling the terms of the contract.

2.60 HCPSS CONTRACT MANAGER

The Howard County Public School System's Contract Manager for any resulting contract shall be Mr. Tony Bonomo, Building Services (410) 313-7084, tony_bonomo@hcpss.org. The contract manager will be responsible for the day-to-day administration of the contract after award. The awarded vendor shall work directly with the designated Contract Manager and/or his designated assistant and not act on any instructions, direction, or information given to them by any other HCPSS personnel.

2.61 CONTRACT

If a contractor's proposal is accepted and awarded, it will become the contract. By submitting a bid proposal/offer, the awarded contractor hereby agrees and understands that all parts of the Bid document, attachments, Terms and Conditions, addendums and all associated documents or any other extraneous matter incorporated by reference will be applicable to any contract(s) awarded as the result of this Request for Bid.

2.62 CONDITIONAL BID

No conditional Bids will be accepted, which contain item such as, but not limited to an escalator clause, minimum delivery amounts other than that indicated, packaging or delivery charges, or any add-on or irregular figures. The prices offered shall be the final cost to The Howard County Public School System.

2.63 CANCELLATION OF BID

Howard County Public Schools reserves the right to cancel this Bid solicitation or to reject any or all Bids in whole or in part at the sole discretion of the Director of Purchasing if he/she determines that it is fiscally advantageous or in the best interest of HCPSS to cancel the bid.

2.64 TAXES

The Howard County Public School System (HCPSS) is a Public School System in the State of Maryland and is tax exempt. The price quoted shall not include federal excise taxes, state or local taxes, or use taxes.

- FEDERAL TAX ID: 52-6000968
- MARYLAND SALES TAX: 30001219
- FEDERAL EXCISE TAX: 52-73-0257K

2.65 BIDDER'S QUALIFICATIONS

Bidders may be required to furnish satisfactory evidence that they are qualified dealers suppliers or manufacturers of the items or services listed, or regularly engaged in performing the services on which they are bidding, and in both cases maintain a regularly established place of business. An authorized representative of The Howard County Public School System may visit any prospective contractor's place of business to determine his ability, capacity, reliability, financial stability, and other factors necessary to perform the contract.

Bidders must be authorized distributors for items listed in this bid. The Howard County Public School System reserves the right, before awarding the contract, to require Bidders to submit evidence of qualification as it may deem necessary, in order to determine the Bidder's qualifications and abilities.

Howard County Public Schools reserves the right to make such reasonable investigations and/or inspection of any bidder's place of business/facilities prior to award of the contract to satisfy questions regarding the bidder's capabilities and responsibility.

2.66 INDEPENDENT CONTRACTORS

The contractor is an independent contractor. The contractor and the contractor's employees or agents are not agents of HCPSS.

2.67 PURCHASE ORDER

Orders shall be in the form of an official Howard County Public School System Purchase Order. The Purchase Order will serve as the contract and all documents listed under the contract section shall be made part of the final Purchase order contract. No deliveries or services are to be made under any contract resulting from this bid without a purchase order.

2.68 ASBESTOS, HAZARDOUS OR TOXIC SUBSTANCES

No products shall contain asbestos materials. Any products from Vendor/supplier found to be containing asbestos materials shall be promptly removed from HCPSS property at the expense of the Vendor/Supplier. Vendor/Supplier may be required to submit documentation stating that the products bid do not contain asbestos materials.

Bidders must comply with all applicable Federal, State, and County laws, ordinances and regulations pertaining to shipping, handling, distribution and access to information about hazardous and toxic substance and as amended from time to time.

2.69 MATERIAL SAFETY DATA SHEETS

Pursuant to Occupational Safety and Health Act (OSHA) 29CFR1910, MSDS for the products supplied or used as a result of this contract must be attached to each shipment of product as well as mailed to:

The Howard County Public School System
Insurance / Safety and Risk Management
10910 Clarksville Pike
Ellicott City, MD 21042

MSDS must show the contract number under which the products were supplied or used.

2.70 PERFORMANCE REQUIRMENTS

All items are to be UL tested.

The descriptions and standards identified for each item are minimally acceptable performance criteria as determined by the Board of Education. The Board of Education shall be the sole determinant as to whether products meet or exceed criteria. The owner's personnel shall have the right to reject any items which, in their opinion, do not conform to standards. Rejection may be at time of, or after, delivery. The Contractor shall be required to remove rejected items within 72 hours of notification.

2.71 USE AND OWNERSHIP

All documents, materials or data developed as a result of this contract shall be the property of HCPSS. Therefore HCPSS has the right to use and reproduce any documents, materials, and data, including confidential information, used in or developed as a result of this contract. HCPSS may use this

information for its own purposes, or use it for reporting to state or federal agencies. The contractor must keep confidential and warrants that it has title to or right of use of all documents, material, or data used or developed in connection with this contract

2.72 PROPRIETARY OR CONFIDENTIAL INFORMATION

Bidders must specifically identify those portions of their proposal, if any, which they deem to contain confidential or proprietary information of trade secrets and must provide justification to be considered by HCPSS in determining whether such material, upon request, should not be disclosed. All requests for information shall be handled in accordance with the freedom of Information Act.

2.73 INTERPRETATION OR CORRECTION OF BIDDING DOCUMENTS

The contractor shall carefully study and compare the Bid request documents with each other, and with other work being bid concurrently or presently under construction to the extent that it relates to the work for which the quote is submitted, shall examine the site and local conditions, and shall at once report to the Architect errors, inconsistencies or ambiguities discovered. Contractors and sub-contractors requiring clarification or interpretation of the quote documents shall make a written request which shall reach the Construction Manager and Architect at least Seven business days prior to the date for receipt of the Bid.

2.74 INCLEMENT WEATHER OR OTHER UNANTICIPATED HCPSS CLOSINGS

In the event that Howard County Public Schools are closed for students on the scheduled bid due date, but the Purchasing Office located in the Administrative/Central Offices are open then the bids will be due as specified in the original documents. In the event the Schools have a delayed opening on the date bids are due, the bid date and time will not change. In the event that the HCPSS Administrative/Central Offices are closed as the result of inclement weather or for other unanticipated reasons, Bids will be due on the next day that the Administrative/Central Office is officially open, at the same time specified. It is the bidder's responsibility to check the closure announcements on the HCPSS main web-site page www.hcpss.org to confirm that it specifically identifies that the Administrative/Central offices are closed

2.75 ADDENDA AND CHANGES

Howard County Public Schools reserves the right to change the contents of this solicitation where necessary for the proper fulfillment of the intention of this request. Changes will be made in the form of written addenda and posted to the HCPSS Purchasing web site at www.hcpss.org/about-us/purchasing/current-bids/.

It is the bidder's sole responsibility to monitor the Purchasing web site to ensure that they downloaded any posted addenda or documents prior to submitting their bid and duly acknowledge receipt of said addenda on the proper bid form. It is highly recommended that the submitting bidder ascertain if they have downloaded all the addend posted prior to the closing date. Failure to do so may result in non- receipt of important information and may not relieve such bidder from any obligation under his/her bid submittal.

2.76 ERRORS IN BIDS

Should any bidder be in doubt as to the meaning of the specifications, or should he/she find any discrepancy or omission, he/she shall notify in writing the HCPSS Purchasing Department representative contact as indicated in the solicitation document. All bidders will be notified in writing of clarification by means of addenda posted on the HCPSS Purchasing Current Bids Website.

Failure of the bidder to thoroughly understand all aspects of the Invitation for Bid before submitting his bid will not act as an excuse to permit withdrawal of his bid nor secure relief or plea of error.

Neither law nor regulation makes allowance for errors of omission on the part of the bidders

2.77 MULTIPLE PRICES

No bidder will be allowed to offer more than one price on each item regardless of the availability of several items that they feel may perform the same function or meet the specification as the item(s) described in the solicitation. The bidder must determine for themselves which item to offer and submit one price only. If said bidder should submit more than one price on any item all prices for that item may be rejected at the discretion of HCPSS.

2.78 BID ACCEPTANCE

Unless otherwise stated by the bidder in his bid, prices offered will be considered to allow one hundred twenty (120) days for acceptance. At the end of the (120) days, the bid may be withdrawn at the written request of the bidder. If the bid is not withdrawn at that time it remains in effect until an award is made or the solicitation is canceled.

2.79 BILLING AND PAYMENT

The contractor shall submit invoices to the Howard County Department of Education, (Name of School/Department), 10910 Rt. 108, Ellicott City, MD 21042, Attn: (Name of Contact), at the completion of each job. Invoices must contain the following information:

- a) Purchase Order Number
- b) Name of school
- c) Description of work along with quantities
- d) Start date and completion date
- e) Total due

2.80 CONDITIONAL BIDS

No conditional bids will be accepted, which contain item such as, but not limited to an escalator clause, minimum delivery amounts other than that indicated, packaging or delivery charges, or any add-on or irregular figures. The prices offered shall be the final cost to The Howard County Public School System.

2.81 PRICE

Prices shall be all inclusive and shall include all cost of every kind such as, but not limited to delivery and Installation costs to The Howard County Public School System.

2.82 SAMPLES

When requested, samples shall be provided at no cost to the Howard County Department of Education Purchasing Department no later than the scheduled bid opening date and time. All sample packages shall be marked "Sample" with a label that indicates the full Bid Title, Bid Number, Opening date and time, Name and Address of Bidder, and item number. All samples must be properly tagged or labeled and clearly identified. Samples are not required when none are requested.

In the event the Purchasing Office requests a sample after the bid opening, the sample shall be delivered within ten (10) days of request for award consideration. Delivery of samples shall be to: The Howard County Public School System, Attn: Purchasing, 10910 Clarksville Pike, Ellicott City, Maryland 21042.

In the event a sample is consumed or destroyed in the evaluation process, The Howard County Public School System shall be held harmless and not liable for any cost of sample(s).

Samples must be picked up within ten (10) days after contract award, after which samples will be considered abandoned and will become the property of the Board of Education.

Samples from the successful Bidder may be held during the contract performance period as a standard of quality and will be available for return upon contract completion.

2.83 PROCUREMENT CARD

The Howard County Public School System utilizes a Purchasing Card Program. Purchases resulting from this solicitation may be made through a Visa/Mastercard credit card. Bidders are prohibited from charging any additional costs/fees above and beyond the established contract prices to process such orders. Bidders lacking Visa/Mastercard capability should contact the Purchasing Office.

2.84 INVOICE AND PAYMENT

The Contractor shall submit invoices in triplicate to the Howard County Department of Education, 10910 Clarksville Pike (Route 108), Ellicott City, MD 21042-6198, Attn: (Name of ordering contact person), Invoices must contain the following information:

- a) Purchase Order Number
- b) Name of school
- c) Description of work along with quantities
- d) Start date and completion date
- e) Total due

2.85 DELIVERY

All orders and shipments must be prepaid. Shipped by truck or Parcel Post to the designated School(s)/Office(s) location(s), as specified on the Purchase Order. If Prices do not include delivery charges, please prepay and add to invoice.

Deliveries shall be made between 8:30 a.m. - 3:00 p.m., Monday through Friday, except holidays. Delivery time and location shall be as specified on the purchase order. Twenty-four hour notice prior to delivery is required. Orders not completed within the specified time period will be subject to cancellation without penalty and at the sole option of Howard County Public School System.

All products delivered under this contract shall be packed in accordance with accepted trade practices and no charge may be made over and above the bid price for packaging, or for deposits or containers unless specified in the bid.

Upon delivery, personnel may reject any items that, in their opinion, are damaged. Rejection may be at the time of, or after, delivery. Items rejected are to be returned and reshipped at no cost to The Howard County

Public School System. HCPSS will attempt to inspect deliveries as promptly as possible, but failure to inspect and accept or reject shall not impose a liability on HCPSS for such items that are damaged or not in accordance with the specifications.

Prices are to include all freight and delivery charges.

The Howard County Public School System reserves the right to order awarded items as needed throughout the contract year at no additional charge to the school system.

Orders are to be delivered in full within the time set in the specifications unless stated otherwise on the purchase order.

The Howard County Public School System will not sign for or assume responsibility of deliveries until they have been properly unloaded by the Contractor's delivery personnel at the School/Office location.

2.86 MATERIAL SAFETY DATA SHEETS

Pursuant to Occupational Safety and Health Act (OSHA) 29CFR1910, MSDS for the products supplied or used as a result of this contract must be attached to each shipment of product as well as mailed to:

The Howard County Public School System
Insurance & Safety
10910 Clarksville Pike
Ellicott City, MD 21042

2.87 WARRANTY

The Vendor agrees that the equipment or supplies furnished under this award and or contract shall be covered by the most favorable commercial warranties the vendor gives to any customer for such equipment or supplies and that the right and remedies provided herein are in addition to and do not limit any rights afforded to the Board of Education by any other clauses of the contract.

All equipment shall in the very least carry a standard factory warranty against defects in parts and workmanship for the time period stated in the product warranty specifications and/or for one (1) year from date of acceptance.

The vendor expressly warrants that all articles, material and work offered shall conform to each and every specification, drawing, sample or other description which is furnished to or adopted by the HCPSS and that they will be fit and sufficient for the purpose intended, merchantable, of good material and workmanship, and free from defect. The awarded vendor shall be responsible for handling all warranty issues directly with the manufacturer and agrees to any repairs, labor, replacements, or necessary adjustments because of such defects to be made promptly by him/her and without cost to and the satisfaction of HCPSS.

2.88 VENDOR CONTRACT ADMINISTRATION

Bidders shall designate internal and external contract administrators to administer the contract. Bidders are to list the names and telephone numbers in the appropriate space on the CONTRACTOR INFORMATION sheet for these individuals.

2.89 MULTI-AGENCY PARTICIPATION

Under §5-112, Paragraph (3) of the Education Article of the Annotated Code of Maryland HCPSS may with Board of Education approval participate in contracts for goods or commodities that are awarded by other public agencies or by intergovernmental purchasing organizations if the lead agency for the contract follows the public bidding procedures. HCPSS therefore reserves the right to extend the terms and conditions of

this solicitation to any and all other agencies within the state of Maryland as well as any other federal, state, municipal, county, or local governmental agency under the jurisdiction of the United States and its territories. This shall include but not limited to private schools, parochial schools, non-public schools such as charter schools, special districts, intermediate units, non-profit agencies providing services on behalf of government, and/or state, community and/or private colleges/universities that require these goods, commodities and/or services. A copy of the contract pricing and the bid requirements incorporated in this contract will be supplied to requesting agencies.

Each participating jurisdiction or agency shall enter into its own contract with the Award Bidder(s) and this contract shall be binding only upon the principals signing such an agreement. Invoices shall be submitted in duplicate "directly" to the ordering jurisdiction for each unit purchased. Disputes over the execution of any contract shall be the responsibility of the participating jurisdiction or agency that entered into that contract. Disputes must be resolved solely between the participating agency and the Award

2.90 RESOLUTION OF DISPUTES

Bid rejection for non-responsiveness and/or non-responsibility shall be made using the criteria guidelines as stated in the General Provisions of Bid Proposal, Terms and Conditions, and Technical Specifications if any.

After bid opening and bid review, but prior to bid award, if a Bidder's entire bid is declared to be nonresponsive and/or non-responsible, the Bidder will be notified as to the reason(s) for rejection.

Protests shall be filed in writing to the Purchasing Office within two days after notification

Protests shall include the basis for the protest or appeal, complete in all respects, with relief sought, and whether the protester wishes to have a hearing with respect to the protest or appeal.

Protests shall be addressed to Howard County Department of Education, 10910 Clarksville Pike, Ellicott City, Maryland 21042, Attention: Buyers Name, labeled "Protest" and the Bid Number. The written protest shall include as a minimum the following:

- a) Name and address of the protester
- b) Appropriate identification of the bid
- c) Supporting exhibits, evidence, and/or documents to substantiate any claims.
- d) Suggested remedy(ies).

2.91 MARYLAND MARKETPLACE (eMMA) Requirement

The Maryland state law requires Howard County Public Schools to Publish notice of Procurement solicitations and awards on eMaryland Marketplace Advantage (eMMA). The requirement extends only to contracts procured through competitive sealed bidding, competitive sealed proposals, noncompetitive negotiations, and procurements whose value equals or exceeds that for State contracts that must be published on eMMA. Bidders on this solicitation and any future solicitation posted on eMMA are now required to register as a vendor/contractor with eMMA at <https://procurement.maryland.gov>. If you are not already registered with eMMA please do so prior to submitting your bid. It is required that you provide your eMMA contractor number on the price page form when you submit your proposal. Registration with eMMA is free. If you have any questions or need assistance, contact their help desk at emma.helpdesk@maryland.gov or call (410)767-1492.

SECTION 000730

MINORITY BUSINESS ENTERPRISE (MBE) REQUIREMENTS

1.0 PURPOSE

The purpose of the Procedures is to fulfill the intent of the law by setting goals for minority business enterprise participation in every contract that includes State funding through the Public School Construction Program. Local Educational Agencies (LEAs) shall attempt to achieve the result that a minimum of 29 percent of the total dollar value of all construction contracts is made directly or indirectly with certified minority business enterprises when State Public School Construction Program (PSCP) funds are utilized, with a minimum of 0 percent from certified African American-owned businesses, a minimum of 0 percent from certified Asian American-owned businesses, and the balance from any certified minority business enterprises. All general contractors, including certified MBE firms, when bidding as general or prime contractors are required to attempt to achieve the MBE subcontracting goals from certified MBE firms.

2.0 EFFECTIVE DATE

These procedures have been adopted for use in Howard County and supersede previously utilized MBE procedures, and will take effect on or after September 18, 2008.

3.0 DEFINITIONS

1. **Certification** means the determination that a legal entity is a minority business enterprise consistent with the intent of Subtitle 3 of the State Finance and Procurement Article.
2. **Certified Minority Business Enterprise** means a minority business that holds a certification issued by the Maryland State Department of Transportation (MDOT).
3. **Corporation**, as defined by MDOT, is an artificial person or legal entity created by or under the authority of the laws of any state of the United States, the District of Columbia or a territory or commonwealth of the United States and formed for the purpose of transacting business in the widest sense of that term, including not only trade and commerce, but also manufacturing, mining, banking, insurance, transportation and other forms of commercial or industry activity where the purpose of the organization is profit. For eligibility for certification, disadvantaged and/or minority individuals must own at least 51 percent of the voting stock and at least 51 percent of the aggregate of all classes of stock that have been issued by the corporation. (Note: stock held in trust is not considered as stock held by the disadvantaged businesspersons when computing the business person(s) ownership.)
4. **Managerial Control**, as defined by MDOT, means that a disadvantaged or minority owner(s) has the demonstrable ability to make independent and unilateral business decisions needed to guide the future and destiny of a business.

Control may be demonstrated in many ways. For a minority owner to demonstrate control, the following examples are put forth, but are not intended to be all inclusive:

- a. Articles of Incorporation, Corporate Bylaws, Partnership Agreements and other agreements shall be free of restrictive language which would dilute the minority owner's control thereby preventing the minority owner from making those decisions which affect the destiny of a business;
 - b. The minority owner shall be able to show clearly through production of documents the areas of the disadvantaged business owner's control, such as, but not limited to:
 - 1) Authority to sign payroll checks and letters of credit;
 - 2) Authority to negotiate and sign for insurance and/or bonds;
 - 3) Authority to negotiate for banking services, such as establishing lines of credit; and
 - 4) Authority to negotiate and sign for contracts.
 - c. Agreements for support services that do not lessen the minority owner's control of the company are permitted as long as the disadvantaged or minority business owner's authority to manage the company is not restricted or impaired.
5. **Minority Business Enterprise (MBE)** means any legal entity, except a joint venture, that is (a) organized to engage in commercial transactions, and (b) at least 51 percent owned and controlled by one or more individuals who are socially and economically disadvantaged including:
- African Americans;
 - American Indian/Native Americans;
 - Asians;
 - Hispanics;
 - Physically or mentally disabled individuals;
 - Women; or
 - A non-profit entity organized to promote the interests of physically or mentally disabled individuals.
6. **Minority Business Enterprise Liaison** means the employee of the school system designated to administer the Minority Business Enterprise Procedures for State funded public school construction projects.
7. **Operational Control**, as defined by MDOT, means that the disadvantaged or minority owner(s) must possess knowledge necessary to evaluate technical aspects of the business entity. The primary consideration in determining operational control and the extent to which the disadvantaged or minority owner(s) actually operates a business will rest upon the specialties of the industry of which the business is a part. The minority owner should have a working knowledge of the technical requirements needed to operate in his/her industry. Specifically, in the construction industry and especially among small (one to five person firms) contractors, it is reasonable to expect the disadvantaged or minority owner(s) to be knowledgeable of all aspects of the business. Accordingly, in order to clarify the level of operational involvement which a minority owner must have in a business for it to be considered eligible, the following examples are put forth, but are not intended to be all inclusive:
- a. The minority owner should have experience in the industry for which certification is being sought; and
 - b. The minority owner should demonstrate that basic decisions pertaining to the daily operations of the business are independently made. This does not necessarily preclude the disadvantaged or minority owner(s) from seeking paid or unpaid advice and assistance. It does mean that the minority owner currently

must possess the knowledge to weigh all advice given and to make an independent determination.

8. **Ownership**, as defined by MDOT, means that:
 - a. The minority owner(s) of the firm shall not be subject to any formal or informal restrictions, which limit the customary discretion of the owner(s). There shall be no restrictions through, for example, charter requirements, by-law provisions, partnership agreements, franchise or distributor agreements or any other agreements that prevent the minority owner(s), without the cooperation or vote of any non-minority, from making a business decision of the firm.
 - b. This means that the disadvantaged or minority persons, in order to acquire their ownership interests in the firm, have made real and substantial contributions of capital, expertise or other tangible personal assets derived from independently owned holdings without benefit of a transfer of assets, gift or inheritance from non-minority persons. Examples of insufficient contributions include a promise to contribute capital, a note payable to the firm or its owners who are not minority persons or the mere participation as an employee rather than as a manager. If the ownership interest held by a disadvantaged or minority person is subject to formal or informal restrictions, such as options, security interests, agreements, etc., held by a non-minority person or business entity, the options, security interests, agreements, etc., held by the non-minority person or business entity must not significantly impair the disadvantaged or minority person's ownership interest.
9. **Partnership** means an unincorporated association of two or more persons to carry on as co-owners of a business for profit. For a partnership to be deemed eligible for certification under the MDOT Program, the disadvantaged or minority person's interest must be at least 51 percent of the partnership capital.
10. **Socially and Economically Disadvantaged** means a citizen or lawfully admitted permanent resident of the United States who is socially disadvantaged and economically disadvantaged. The law establishes the level of personal net worth at \$1,500,000, above which an individual may not be found to be socially and economically disadvantaged.
11. **Sole Proprietorship**, as defined by MDOT, is a for-profit business owned and operated by a disadvantaged or minority person in his or her individual capacity. For a sole proprietorship to be deemed eligible for certification under the DBE/MBE Program, the disadvantaged or minority person must be the sole proprietor.

4.0 MBE GOAL SETTING PROCEDURES

1. The MBE program requires that all race-neutral measures be considered before making use of race-based measures. Using a combination of race-neutral and race-based measures for each specific school construction project will help ensure that certified MBE firms are afforded the opportunity to submit bids and be utilized to the greatest extent possible.
2. Race-neutral measures include any action taken by the LEA to make it easier for all contractors, including MBEs, to compete successfully for public school construction project contracts.
3. Race-based measures include setting an overall MBE goal and MBE subgoals, if applicable, based upon race, gender, ethnicity, etc., for a specific project.

4. The overall MBE goal and the subgoals, if applicable, should be set for each specific project, considering but not limited to, the following factors:
 - a. The extent to which the work to be performed can reasonably be segmented to allow for MBEs to participate in the project;
 - b. A determination of the number of certified MBEs that potentially could perform the identified work;
 - c. The geographic location of the project in relationship to the identified certified MBEs;
 - d. Information obtained from other State departments/agencies related to establishing a MBE goal and/or subgoals for similar construction projects or work in the jurisdiction;
 - e. Information obtained from other State departments/agencies related to MBE participation in similar construction projects or work in the jurisdiction; and
 - f. Any other activities or information that may be identified as useful and productive.
5. The Superintendent or designee shall establish one or more procurement review groups (PRG). The PRG must include at a minimum the MBE liaison and the procurement officer (PO) or a representative from the procurement office. The PRG could also include a capital improvement project manager, the project architect, the cost estimator, the construction manager, and/or other individuals selected by the superintendent or designee.
 - a. The PRG should communicate and/or meet as needed to consider the MBE subcontracting goal and subgoals, if applicable, for individual projects or groups of projects.
 - b. The PRG should consider the factors cited in 4 above when establishing the MBE goal and subgoals, if applicable, for each project or segmented piece of a project that are reasonable and attainable.
 - c. The PRG must complete and submit a written analysis for each state funded school construction project with an estimated cost that is expected to exceed \$200,000.
 - i.. For state-funded projects that require review of construction documents (CD), the written analysis shall be submitted with the CD documents to the department of general services, and will be reviewed by DGS for submission, appropriate signatures, and correspondence between the goal and subgoals, if applicable, indicated in the analysis and those of the procurement documents.
 - ii. For state-funded projects that do not require review of construction documents, the written analysis shall be submitted to the public school construction program, and will be reviewed by the PSCP for submission and appropriate signatures.
 - iii. For locally funded projects that are anticipated to be requested for state approval of planning and funding, the written analysis shall be submitted with the CD documents to the Maryland state department of education, and will be reviewed by MSDE for submission, appropriate signatures, and correspondence between the goal and subgoals, if applicable, indicated in the analysis and those of the procurement documents. Submission of this document is a pre-condition for recommendation for state approval of planning and funding when submitted in an annual CIP.

- d. For projects estimated to cost between \$50,000 and \$200,000 the same analysis form is to be completed and submitted. This could be a responsibility of the PRG, but could be performed by others as well.
 - i. For state-funded projects that require review of construction documents (CD), the written analysis shall be submitted with the CD documents to the department of general services, and will be reviewed by DGS for submission, appropriate signatures, and correspondence between the goal and subgoals, if applicable, indicated in the analysis and those of the procurement documents.
 - ii. For state-funded projects that do not require review of construction documents, the written analysis shall be submitted to the public school construction program, and will be reviewed by the PSCP for submission and appropriate signatures.
 - e. If the project cost is estimated to exceed \$200,000 then a copy of the written analysis shall also be sent to GOMA at the same time that the written analysis is submitted to the DGS or the PSCP.
 - f. The PRG should consult with local counsel for the board of education as needed.
5. It is recognized that by utilizing the factors cited in 4 above, the MBE goal and/or subgoals, if applicable, for a specific project or portion thereof may be significantly higher than the overall goals of the program (29% overall, with 0% from African American-owned businesses and 0% from Asian American-owned businesses). It is also recognized and possible that there will be MBE goals set that are lower than those stated above or even that no MBE goal and/or subgoals will be set for a specific project or the segmented piece of the project.
 6. Assistance in reviewing the factors cited in 4 above and setting a goal and/or subgoals, if applicable, for specific projects or a segmented piece of a project can be obtained by contacting the Public School Construction Program and/or the Governor's Office of Minority Affairs.

5.0 IMPLEMENTING PROCEDURES - Over \$50,000

For construction projects estimated to cost in excess of \$50,000, the following procedures will be utilized:

1. All advertisements, solicitations, and solicitation documents shall include the following statements:
 - a. "Certified Minority Business Enterprises are encouraged to respond to this solicitation notice."
 - b. "The contractor or supplier who provides materials, supplies, equipment and/or services for this construction project shall attempt to achieve the specific overall MBE goal of ____ percent established for this project. All prime contractors, including certified MBE firms, when submitting bids or proposals as general or prime contractors, are required to attempt to achieve this goal from certified MBE firms."
 - c. If subgoals have been established for this project then one of the following should be included:
 - 1) "The subgoals established for this project are ____ percent from African American-owned businesses and ____ percent from Asian American-owned businesses."

- 2) "The subgoal established for this project is ____ percent from African American-owned businesses."
 - 3) "The subgoal established for this project is ____ percent from Asian American-owned businesses."
 - d. "The bidder or offeror is required to submit with its bid or proposal a completed Attachment A - Certified MBE Utilization and Fair Solicitation Affidavit and Attachment B - MBE Participation Schedule, as described in the solicitation documents.
 - e. If there is no overall MBE goal or MBE subgoals established for the project, then only 1.A. above is to be included.
2. Other Advertisement and Outreach Requirements
- a. To encourage greater MBE participation the staff of the school system should send out notices of potential projects to MBEs or solicit bids or proposals directly from minority business enterprise contractors that are certified.
 - b. A copy of the solicitation notice, preferably electronically, shall be sent to the Governor's Office of Minority Affairs at the same time the advertisement for the solicitation is released.
 - c. Upon request for a specific project, the school system shall provide one set of drawings and specifications (and addenda when issued) to minority business enterprise associations recognized by the Governor's Office of Minority Affairs. They will be available free of charge to be picked up at a location designated by the LEA. A review of the bid or proposal activity by an association's members may be initiated to justify continuation of this service.
 - d. When a pre-bid or pre-proposal conference is held, the MBE Liaison or designated representative shall explain the MBE goal and subgoals, if applicable; the MBE provisions of the solicitation; the documentation required at the time of submission; its relationship to the responsiveness of the bidder or offeror; how to complete the required attachments, particularly A, B, and C; and additional information and supporting documentation that may be required after the bid or proposal opening. All contractors who attend the pre-bid or pre-proposal conference should receive a list or information explaining how to obtain a listing of certified MBE firms who could perform the work or have expressed an interest in performing the school construction work required for the specific project in the jurisdiction.
 - e. The names of prime contractors obtaining drawings and specifications will be shared with certified MBEs and MBE associations, upon request.
 - f. The MBE liaison, in conjunction with the procurement officer or project staff, should respond to all applicable questions and concerns relating to the project's MBE requirements completely and in a timely fashion to ensure that all potential contractors and subcontractors can compete effectively.
3. All Solicitation Documents Shall Include the Following:
- a. "Certified Minority Business Enterprises are encouraged to respond to this solicitation notice".
 - b. "The contractor or supplier who provides materials, supplies, equipment and/or services for this construction project shall attempt to achieve the result that a minimum of ____ percent of the total contract value is with certified Minority Business Enterprises, with a minimum of ____ percent from certified African American-owned businesses, a minimum of ____ percent from certified Asian American-owned businesses, and the balance from any certified Minority Business Enterprises. All contractors, including certified MBE firms, when submitting bids or proposals as prime contractors, are required to attempt to

achieve the MBE goal and subgoals, if applicable, from certified MBEs". Note: see 6.1.C. above for variations that may be required.

- c. Each bid or offer submitted, including a submittal from a certified MBE in response to this solicitation, shall be accompanied by a completed Attachment A - Certified MBE Utilization and Fair Solicitation Affidavit and a completed Attachment B - MBE Participation Schedule. These two attachments must be accurate and consistent with each other.
 - 1) Attachment A and Attachment B shall be submitted with the sealed bid price or proposal at a place, date, and time specified in the solicitation document.
 - 2) As an alternative, and at the discretion of the school system, Attachment A could be submitted with the sealed bid price or proposal at a place, date, and time specified in the solicitation document. The sealed bids or proposals received by the time specified could be held, unopened for a maximum of 30 minutes. Within that time (30 minutes) each bidder or offeror must submit Attachment B, in a separate sealed envelope. The sealed price envelopes from each bidder or offeror who submits both the sealed bid or proposal and the envelope with Attachment B will then be opened and reviewed and recorded as a viable submission. Any contractor that fails to submit the second envelope, with Attachment B, prior to the specified time allowed (30 minutes) after the submittal of the sealed bid or proposal will be deemed non-responsive and the sealed bid or proposal will not be opened or considered.
- d. The submittal of a completed and signed Attachment A - Certified MBE Utilization and Fair Solicitation Affidavit and a completed and signed Attachment B - MBE Participation Schedule indicates the bidder's or offeror's recognition and commitment to attempt to achieve the MBE goal and/or MBE subgoals, if applicable, for the specific project.
 - 1) The bidder or offeror recognizes that their efforts made to initiate contact, to solicit, and to include MBE firms in this project will be reviewed carefully and evaluated based upon the actions taken by them prior to and up to 10 days before the bid or proposal opening. Follow-up actions taken by the bidder or offeror within the 10 days prior to the bid opening will also be considered.
 - 2) Based upon this review and evaluation it will be determined, by the MBE liaison, procurement officer, or a designated person, if a good faith effort was made by the apparent low bidder or apparent successful offeror.
 - 3) In accordance with the Governor's Office of Minority Affairs, a MBE Prime contractor may self-perform up to 50% of the overall MBE contract goal and up to 100% of any one MBE contract subgoal, provided that the certified MBE prime contractor is properly identified on the MBE participation schedule and the firm is NAICS code-certified to do the work.
- e. The bidder or offeror must check one of the three boxes on Attachment A, which relates to the level of MBE participation achieved for the project. The bidder's or offeror's signature indicates that in the event that they did not meet the MBE goal or subgoals, if applicable, that:
 - 1) They are therefore requesting a waiver, and
 - 2) Documentation of their good faith efforts will be provided to the school system staff within 10 days of being notified that they are the apparent low bidder or apparent successful offeror.
- f. The bidder or offeror must submit Attachment B (as and when described above), which lists and provides information related to each certified MBE firm that the bidder or offeror will utilize on this project. A completed and accurate Attachment

B is required. All of the work specified to be performed by each MBE firm, the contact information, MDOT certification number, minority code, the dollar values, and percentages must be correct.

- g. Attachment B should be completed and submitted with all calculations utilizing the base bid or offer only. A revised Attachment B should be submitted by the successful bidder or offeror once a determination is made as to the acceptance and/or rejection of any alternates.
- h. If a request for a waiver has been made, the appropriate box on Attachment A has been checked and the attachment signed, then the LEA should obtain and review the apparent low bidder's or successful offeror's supporting documentation of the good faith efforts to justify the granting of the waiver, prior to submitting the contract award for approval to the board of education.
- i. The following documentation shall be considered as part of the contract, and shall be furnished by the apparent low bidder or successful offeror to the MBE Liaison or designated person, within ten (10) working days from notification that the firm is the apparent low bidder or successful offeror:
 - 1) A completed Attachment D - Minority Business Enterprise Subcontractor Project Participation Statement shall be completed and signed by the prime contractor and each MBE firm listed on Attachment B - MBE Participation Schedule and Attachment C - Outreach Efforts Compliance Statement shall be signed and completed by the bidder or offeror.
 - 2) Notification for purposes of this procedure means the earliest of the following methods of communication: orally in person, orally by telephone, orally by a telephone message, a faxed communication, a letter by date received or an electronic communication.
 - 3) The ten (10) working days do not include the day the notification is received, weekends or holidays (State or Federal), but the material submitted must be received by the close of business on the tenth day.
 - 4) The requirement to submit the above-listed documentation within the time frame specified will be considered by the IAC in its review of the request for contract award for the project. Failure to submit the required documentation within the time frame specified may result in a delay of the approval of the award of the contract, or the materials being returned without the approval of the award of the contract.

4. Waiver Procedures

- a. If the apparent low bidder or successful offeror has determined that they are unable to meet the overall MBE goal or subgoals, if applicable, for the project at the time of submission of a bid or offer, they must check either of the two boxes on Attachment A. The signature recognizes and acknowledges that a request for a waiver is being made. The apparent low bidder or successful offeror will therefore be required to submit information and substantiating documentation that will be reviewed to justify the granting of a waiver.
- b. If the apparent low bidder or successful offeror is unable to achieve the overall MBE contract goal and/or the MBE subgoals, if applicable, from certified African American-owned businesses and/or from certified Asian American-owned businesses, the apparent low bidder or successful offeror shall submit, within 10 working days from notification that the firm is the apparent low bidder or successful offeror, a completed Attachment C - Outreach Efforts Compliance Statement, Attachment E - Minority Subcontractors Unavailability Certificate, and Attachment F - MBE Waiver Documentation which shall include the following:

- 1) A detailed statement of the efforts made by the bidder or offeror to identify and select portions of the work proposed to be performed by subcontractors in order to increase the likelihood of achieving the stated goal;
 - 2) A detailed statement of the efforts made by the bidder or offeror prior to and up to at least ten (10) days before the bid or proposal opening to solicit minority business enterprises through written notices that describe the categories of work for which subcontracting is being solicited, the type of work to be performed and specific instructions on how to submit a bid or proposal;
 - 3) Follow-up actions taken by the bidder or offeror within the 10 days prior to the bid or proposal opening will also be considered.
 - 4) A detailed statement of the bidder's or offeror's efforts to make personal contact with MBE firms identified for item (2) above;
 - 5) A record of the name, address, telephone number and dates contacted for each MBE identified under items (2) and (3) above;
 - 6) A description of the information provided to MBEs regarding the drawings, specifications and the anticipated time schedule for portions of the work to be performed;
 - 7) Information on activities to assist minority business enterprises to fulfill bonding requirements or to obtain a waiver of these requirements;
 - 8) Information on activities to publicize contracting opportunities to minority business enterprises, attendance at pre-bid or pre-proposal meetings or other meetings scheduled by the MBE Liaison or designated representative; and
 - 9) As to each MBE that placed a subcontract quotation or offer which the apparent low bidder or successful offeror considers not to be acceptable, a detailed statement of reasons for this conclusion.
- c. In addition to any waiver documentation the apparent low bidder or successful offeror shall submit one completed Attachment D - Minority Business Enterprise Subcontractor Project Participation statement for each MBE firm that will participate in the project consistent with the information previously provided at the time of the submission of Attachment B or the revised Attachment B.
- d. A waiver of an MBE contract goal or subgoal, if applicable, may be granted by the school system only upon receipt of Attachment C - Outreach Efforts Compliance Statement, Attachment E - Minority Subcontractors Unavailability Certificate, and Attachment F - MBE Waiver Documentation as described above in items 1) through 9)
- 1) The MBE Liaison will review and accept or reject the minority business enterprise material that is submitted, and could obtain legal advice or assistance from their attorney.
 - 2) The MBE waiver request may not be considered unless all of the documentation specified above has been submitted in a timely fashion by the apparent low bidder or successful offerer.
 - 3) Assistance in the review of a request for a waiver (the documentation and justifications) may be requested from the Public School Construction Program and/or the Governor's Office of Minority Affairs.
 - 4) If a determination is made that the apparent low bidder or successful offeror did make a good faith effort, based upon a review of the documentation submitted, then the waiver must be granted. The award of contract shall then be made. The material and information submitted, including the LEA's review and analysis notes and conclusion shall be retained in the project file.
 - 5) If a determination is made that the apparent low bidder or successful offeror did not make a good faith effort, based upon a review of the documentation submitted, then the waiver should not be granted. The material and

information submitted, including the LEA's review and analysis notes and conclusion, shall be retained in the project file. The award of contract shall then be made to the next lowest bidder or offeror, who meets the contractual requirements, including the MBE requirements.

- 6) When a waiver is granted, a copy of Attachment F - MBE Waiver Documentation, accepted and signed by a school system representative and with the reasons for the determination, shall be forwarded to the Governor's Office of Minority Affairs and the Public School Construction Program within ten (10) days after approval of the contract award by the board of education. Failure to submit the required documentation within the time frame specified may result in delayed approval of the award of contract by the IAC.

5. All Contracts Shall Include The Following:

- a. "The contractor shall perform the contract in accordance with the representations made in Attachment A - Certified Minority Business Enterprise Utilization and Fair Solicitation Affidavit and Attachment B - MBE Participation Schedule, submitted as part of the bid or proposal".
- b. "Failure to perform the contract as specified and presented in the bid or proposal submission without prior written consent of the owner shall constitute a violation of a material term of the contract".
 - 1) The contractor shall structure his/her operations for the performance of the contract to attempt to achieve the MBE goals as stated in the solicitation document.
 - 2) The contractor agrees to use his/her best efforts to carry out these requirements consistent with the efficient and effective performance of the contract.
 - 3) The contractor must ensure that all certified MBEs shall have the maximum practical opportunity to compete for additional subcontract work under the contract, even after the award of the contract.
 - 4) The contractor shall submit monthly to the MBE Liaison or the school system's designated representative a report listing any unpaid invoices, over 30 days old, received from any certified MBE subcontractor, the amount of each invoice and the reason payment has not been made.
 - 5) The contractor shall included in its agreements with its certified MBE subcontractors, a requirement that those subcontractors submit monthly to the MBE Liaison or appropriate representative a report that identifies the prime contract and lists all payments received from the contractor in the preceding 30 days, as well as any outstanding invoices, and the amount of those invoices.
 - 6) The contractor shall cooperate in any reviews of the contractor's procedures and practices with respect to minority business enterprises, which the MBE Liaison, the Public School Construction Program, and/or the Governor's Office of Minority Affairs may, from time to time, conduct.
 - 7) The contractor shall maintain such records as are necessary to confirm compliance with its MBE participation obligations. These records must indicate the identity of certified minority and non-minority subcontractors employed on the contract, the type of work performed by each, and the actual dollar value of work performed. Subcontract agreements documenting the work performed by all MBE participants must be retained by the contractor and furnished to the MBE Liaison and or appropriate representative on request.
 - 8) All records concerning MBE participation must be retained by the contractor for a period of five years after final completion of the contract, and will be

available for inspection by the MBE Liaison, representatives from the Public School Construction Program and/or other designated official entities.

- 9) At the option of the MBE Liaison or appropriate agency representative, upon completion of the contract and before final payment and/or release of retainage, the contractor shall submit a final report in affidavit form and under penalty of perjury, of all payments made to, or withheld from MBE subcontractors.
- 10) If at any time after submission of a bid or proposal and before execution of a contract, the apparent successful bidder or offeror determines that a certified MBE listed on Attachment B - MBE Participation Schedule has become or will become unavailable, then the apparent successful bidder or offeror shall immediately notify the procurement officer and provide such officer with a reason(s) why the change has occurred. Any desired change in Attachment B - MBE Participation Schedule shall be approved in advance by the procurement officer and shall indicate the contractor's efforts to substitute another certified MBE subcontractor to perform the work. Desired changes occurring after the date of contract execution may occur only upon written approval by the LEA.
- 11) A business that presents itself as a minority business may participate in a project but the contract value may not be counted toward the MBE goal or subgoals, if applicable, until the business is certified by MDOT. If it is not certified at the time of contract award it may not be counted toward the goal or subgoals, if applicable, at that time. Only the funds paid after MDOT certification can be counted toward meeting the MBE goal or subgoals, if applicable. If a certified MBE fails to meet the standards specified in State Finance and Procurement Article.14-301, Annotated Code of Maryland, the payments made to the MBE can be recorded and counted under a contract entered into when the MBE was eligible and certified. Ineligibility of an MBE to participate in the MBE program may not be the sole cause of the termination of the MBE contractual relationship for the remainder of the term of the contract.
- 12) Contractors are encouraged to seek additional MBE participation in their contracts during the life of the project. Any additional MBE participation from certified MBEs should be reported to the MBE liaison and should be included in subsequent monthly requisitions for payment.
- 13) The contractor shall complete the Standard Monthly Contractor's Requisition for Payment (IAC/PSCP Form 306.4), specifically page 3 of 16, *Minority Business Enterprise Participation*, with each requisition submitted for payment. This submittal should accurately reflect the payments to be made that month to MBEs, and the cumulative total for the period specified. Any and all MBE firms that are identified on Attachment B – MBE Participation Schedule should be included on page 3 of the first and all subsequent requisitions for payment. Any MBEs identified during the life of the project should be added as soon as the contractor engages them.
- 14) At the completion of the project the contractor shall prepare a written summary of the final certified MBE participation in the contract as compared to the proposed participation at the time of contract award. This should include the name of each certified MBE, the amount that was anticipated to be paid at the time of contract award, the amount actually paid, and an explanation of any differences that have occurred. Special attention should be given to any situations where the final payments to any MBE was below the level of commitment at the time of contract award.

6. Projects Utilizing a Construction Manager Delivery Method

This section of the procedure has been prepared based upon the utilization of Construction Manager Agency method of delivery. If another alternative method of project delivery is being considered, then these procedures would need to be adapted in consultation with the PSCP before proceeding.

- a. For projects that are being designed and solicited utilizing a Construction Manager Agency delivery method with multiple prime contracts, the school system can structure its procedures to attain the overall MBE goal and subgoals, if applicable, for the project as presented below:
- b. The MBE liaison and other school system staff should work with the project's construction manager, cost estimator, and architect, along with any other individuals who could provide assistance, to determine the overall MBE utilization strategy for the work required, appropriate bid packages, and an appropriate overall MBE goal and subgoals, if applicable, for each specific bid or proposal package.
- c. The overall MBE goal and subgoals, if applicable, for the project shall represent the aggregate of the individual goals and subgoals, if applicable, set for each bid or proposal package.
- d. In setting the specific goals and subgoals, if applicable, for each solicitation package consideration should be given to the potential for MBE participation to the maximum extent possible. The information and procedures provided in section 4.0 MBE Goal Setting Procedures should be consulted and followed for these types of projects.
- e. Prior to submitting the construction documents for State review and authorization to solicit bids or proposals, the school system's representative will prepare a complete list of the individual solicitation packages and indicate the MBE goal and subgoals, if applicable, for each solicitation package. This would include the overall MBE goal and subgoals, if applicable, established in the solicitation documents, the estimated cost for each solicitation package, and the estimated MBE dollar amounts for each solicitation package. A copy of this list should be submitted with the construction documents. The list should be retained as a record by the school system for comparison to the actual contracts awarded with MBE participation, and the final actual MBE participation at the completion of the project.
- f. Contractors submitting bids or proposals for solicitation packages that do not include a MBE goal and subgoals, if applicable, would not be required to submit any of the MBE attachments that are otherwise required nor would they be required to indicate that they are requesting a waiver. The school system representative would, however, request information from the contractor at the completion of the project to determine if any certified MBE firms had participated in the contract.
- g. All other submittals of MBE materials and reporting requirements are applicable for the project, including the submittal of attachments a and b as described above in section 6.0. this includes the documentation for a request for a waiver, if applicable and appropriate.

6.0 RECORDS AND REPORTS

1. The MBE Liaison shall maintain such records as are necessary to confirm compliance with its Minority Business Enterprise Procedures and activities. The records shall be maintained until the project is audited by the Public School Construction Program. These records shall include by project:
 - a. The contractor report submitted at the completion of the project;
 - b. The identity of the minority contractors employed on the project;
 - c. The type of work performed;

- d. The actual dollar value of the work, services, supplies or equipment; and
 - e. The MBE percentage of the total contract.
2. The MBE Liaison will maintain a record of all waivers approved for each project or solicitation package where the prime contractor was unable to achieve the established overall goal or subgoals, if applicable. The MBE Liaison will, however, report to the PSCP all MBE participation by MDOT certified firms who are prime contractors, subcontractors, suppliers, or otherwise making an economically viable contribution to each project. This information shall be reported to PSCP within ten (10) days after approval of the award of the contract by the board of education.
 3. The LEA shall submit the "Certified Minority Business Enterprise Participation Standard Monthly Contractor's Requisition for Payment" (IAC/PSCP Form 306.4 page 3 of 16, located in the Administrative Procedures Guide), which is Attachment G in this procedure, to the PSCP Director of Fiscal Services as part of the regular monthly request for payment for the project.
 4. The LEA shall submit the "Close-Out Cost Summary" (IAC/PSCP Form 306.6 located in the Administrative Procedures Guide), which is Attachment H of this procedure, along with the "Certified Minority Business Enterprise Participation Standard Monthly Contractor's Requisition for Payment" (IAC/PSCP Form 306.4) to the PSCP Director of Fiscal Services within 180 days of completion of the project.
 5. Each fiscal year end, PSCP Fiscal Services will create a report "Payments Made To Contractors during The Fiscal Year" and maintain such records as are necessary to confirm compliance with its minority business enterprise procedures and activities.
 6. Each fiscal year end, PSCP Fiscal Services will create a report "Projects Completed During the Fiscal Year" and maintain such records as are necessary to confirm compliance with its Minority Business Enterprise Procedures and activities. This report will compare the overall MBE goal and subgoals, if applicable, for each specific project with the MBE participation anticipated at the time of contract award and the actual MBE participation at the completion of the project.

7.0 MONITORING

1. The LEA's procurement personnel or project staff shall verify that the certified MBE's listed in the MBE participation schedule are actually performing the work.
2. The LEA's procurement personnel shall ensure that MBE subcontractors are receiving compensation as set forth in the MBE participation schedule by ensuring that the contractor submits monthly reports, listing any unpaid invoices over 30 days old received from any certified MBE subcontractor, the amount of each invoice, and the reason payment has not been made.
3. The MBE Liaison and/or the Public School Construction Program will conduct reviews as deemed necessary to confirm compliance with the minority business enterprise participation requirements.
4. The MBE Liaison will maintain appropriate records, and shall assist the Public School Construction Program in on-site or post-audit reviews upon request.
5. Auditors from the Public School Construction Program will have access to and the ability to audit MBE participation for specific projects, information retained by the LEA, and/or submitted to the IAC in reports/forms filed by the LEA as referenced above.

8.0 Liquidated Damages – Minority Business Enterprise Program

This contract requires the contractor to make good faith efforts to comply with the Minority Business Enterprise (“MBE”) Program and contract provisions. The State and the Contractor acknowledge and agree that the State will incur damages, including but not limited to loss of goodwill, detrimental impact on economic development, and diversion of internal staff resources, if the Contractor does not make good faith efforts to comply with the requirements of the MBE Program and MBE contract provisions. The parties further acknowledge and agree that the damages the State might reasonably be anticipated to accrue as a result of such lack of compliance are difficult to ascertain with precision.

Therefore, upon a determination by the State that the Contractor failed to make good faith efforts to comply with one or more of the specified MBE Program requirements or contract provisions, the Contractor agrees to pay liquidated damages to the State at the rates set forth below. The Contractor expressly agrees that the State may withhold payment on any invoices as a set-off against liquidated damages owed. The Contractor further agrees that for each specified violation, the agreed upon liquidated damages are reasonably proximate to the loss the State is anticipated to incur as a result of such violation.

- a. Failure to submit each monthly payment report in full compliance with COMAR 21.11.03.13B (3): \$225.00 per day until the monthly report is submitted as required.
- b. Failure to include in its agreements with MBE subcontractors a provision requiring submission of payment reports in full compliance with COMAR 21.11.03.13B (4): \$ 100.00 per MBE subcontractor.
- c. Failure to comply with COMAR 21.11.03.12 in terminating, canceling, or changing the scope of work/value of a contract with an MBE subcontractor and/or amendment of the MBE participation schedule: the difference between the dollar value of the MBE participation commitment on the MBE participation schedule for that specific MBE firm and the dollar value of the work performed by that MBE firm for the contract.
- d. Failure to meet the Contractor’s total MBE participation goal and sub goal commitments: the difference between the dollar value of the total MBE participation commitment on the MBE participation schedule and the MBE participation actually achieved.
- e. Failure to promptly pay all undisputed amounts to an MBE subcontractor in full compliance with the prompt payment provisions of this contract: \$225.00 per day until the undisputed amount due to the MBE subcontractor is paid.

Notwithstanding the use of liquidated damages, the State reserves the right to terminate the contract and exercise all other rights and remedies provided in the contract by law.

PROJECT: _____

PSC#: _____

Attachment A (page 1 of 2)

**CERTIFIED MINORITY BUSINESS ENTERPRISE
UTILIZATION AND FAIR SOLICITATION AFFIDAVIT**

NOTE: You must include this document with your bid or offer. If you do not submit the form with your bid or offer, the procurement officer shall deem your bid non-responsive or your offer not reasonably susceptible of being selected for award.

* * * * *

Part I.

I acknowledge the:

- Overall certified MBE subcontract participation goal of ____ % and
- The subgoals, if applicable, of:
 - ____ % for certified African American-owned businesses and
 - ____ % for certified Asian American-owned businesses.

I have made a good-faith effort to achieve this goal. If awarded the contract, I will continue to attempt to increase MBE participation during the project.

Part II.

Check ONE Box

NOTE: FAILURE TO CHECK ONE OF BOXES 1, 2, or 3 BELOW WILL RENDER A BID NON-RESPONSIVE OR AN OFFER NOT REASONABLY SUSCEPTIBLE OF BEING SELECTED FOR AWARD

NOTE: INCONSISTENCY BETWEEN THE ASSERTIONS ON THIS FORM AND THE INFORMATION PROVIDED ON THE *MBE PARTICIPATION SCHEDULE* (ATTACHMENT B) MAY RENDER A BID NON-RESPONSIVE OR AN OFFER NOT REASONABLY SUSCEPTIBLE OF BEING SELECTED FOR AWARD

1 ☐ I have met the overall MBE goal and MBE subgoals for this project. I submit with this Affidavit [Attachment A] the *MBE Participation Schedule* [Attachment B], which details how I will reach that goal.

or

2 ☐ After having made a good-faith effort to achieve the overall MBE goal and MBE subgoals for this project, I can achieve partial success only. I submit with this Affidavit [Attachment A] the *MBE Participation Schedule* [Attachment B], which details the MBE participation I have achieved.

I request a partial waiver as follows:

- Waiver of overall MBE subcontract participation goal: ____ %
- Waiver of MBE subcontract participation subgoals, if applicable:
 - ____ % for certified African American-owned businesses and
 - ____ % for certified Asian American-owned businesses.

Within 10 days of being informed that I am the apparent awardee, I will submit *MBE Waiver Documentation* [Attachment F] (with supporting documentation).

or

- 3 ☐ After having made a good faith effort to achieve the overall MBE goal and MBE subgoals for this project, I am unable to achieve any portion of the goal or subgoals. I submit with this Affidavit [Attachment A] the *MBE Participation Schedule* [Attachment B].

I request a full waiver.

Within 10 days of being informed that I am the apparent awardee, I will submit *MBE Waiver Documentation* [Attachment F] (with supporting documentation).

Part III.

I understand that if I am the apparent awardee or conditional awardee, I must submit **within 10 working days** after receiving notice of the potential award or within 10 days after the date of conditional award – whichever is earlier – the:

- *Outreach Efforts Compliance Statement* (Attachment C)
- *Subcontractor Project Participation Statement* (Attachment D)
- *Minority Subcontractors Unavailability Certificate* (Attachment E) (if applicable)
- Any other documentation the Procurement Officer requires to ascertain my responsibility in connection with the MBE participation goal and subgoals

I acknowledge that if I fail to timely return complete documents, the Procurement Officer may determine that I am not responsible and therefore not eligible for contract award. If the contract has been awarded, the award is voidable.

I acknowledge that the MBE subcontractors/suppliers listed in the *MBE Participation Schedule* and any additional MBE subcontractor/suppliers identified in the *Subcontractor Project Participation Statement* will be used to accomplish the percentage of MBE participation that I intend to achieve.

In the solicitation of subcontract quotations or offers, MBE subcontractors were provided the same information and amount of time to respond as were non-MBE subcontractors.

The solicitation process was conducted in such a manner so as to not place MBE subcontractors at a competitive disadvantage to non-MBE subcontractors.

I solemnly affirm under the penalties of perjury that this Affidavit is true to the best of my knowledge, information, and belief.

Bidder/Offeror Name

Address

Address (continued)

Affiant Signature

Printed Name & Title

Date

**ATTACHMENT B
MBE PARTICIPATION SCHEDULE**

ORIGINAL

This document must be included with the bid or offer. If the bidder or offeror fails to submit this form with the bid or offer as required, the procurement officer shall deem the bid non-responsive or shall determine that the offer is not reasonably susceptible of being selected for award.

1. Prime Contractor's Name			2. Prime Contractor's Address/Telephone Number		
3. Project/School Name			4. Project/School Location		
5. LEA Name: _____ PSC Number: _____			6. Base Bid Amount \$ _____ Acceptance Alternates \$ _____ Total \$ _____		
7a. Minority Firm Name: _____ Minority Firm Address: _____ MDOT Firm Certification Number: _____ <input type="checkbox"/> African American <input type="checkbox"/> Asian American <input type="checkbox"/> Native American <input type="checkbox"/> Women <input type="checkbox"/> Hispanic <input type="checkbox"/> Disabled <div style="float: right; text-align: right;"> Telephone Number: _____ NAICS Code: _____ </div>					
Subcontractor Firm (Select One)	Allowable Percentage	Percentage of Total Contract	Subcontractor Dollar Amount	Participation Amount	
MDOT Certified Firm	100%		\$ _____	\$ _____	
MDOT Certified Prime Contractor	50% of established goal OR		\$ _____	\$ _____	
	100% of one subgroup contract subgoal				
MDOT Certified Supplier, Wholesaler and Regular Dealer	60%		\$ _____	\$ _____	
7b. Minority Firm Name: _____ Minority Firm Address: _____ MDOT Firm Certification Number: _____ <input type="checkbox"/> African American <input type="checkbox"/> Asian American <input type="checkbox"/> Native American <input type="checkbox"/> Women <input type="checkbox"/> Hispanic <input type="checkbox"/> Disabled <div style="float: right; text-align: right;"> Telephone Number: _____ NAICS Code: _____ </div>					
Subcontractor Firm (Select One)	Allowable Percentage	Percentage of Total Contract	Subcontractor Dollar Amount	Participation Amount	
MDOT Certified Firm	100%		\$ _____	\$ _____	
MDOT Certified Prime Contractor	50% of established goal OR		\$ _____	\$ _____	
	100% of one subgroup contract subgoal				
MDOT Certified Supplier, Wholesaler and Regular Dealer	60%		\$ _____	\$ _____	
7c. Minority Firm Name: _____ Minority Firm Address: _____ MDOT Firm Certification Number: _____ <input type="checkbox"/> African American <input type="checkbox"/> Asian American <input type="checkbox"/> Native American <input type="checkbox"/> Women <input type="checkbox"/> Hispanic <input type="checkbox"/> Disabled <div style="float: right; text-align: right;"> Telephone Number: _____ NAICS Code: _____ </div>					
Subcontractor Firm (Select One)	Allowable Percentage	Percentage of Total Contract	Subcontractor Dollar Amount	Participation Amount	
MDOT Certified Firm	100%		\$ _____	\$ _____	
MDOT Certified Prime Contractor	50% of established goal OR		\$ _____	\$ _____	
	100% of one subgroup contract subgoal				
MDOT Certified Supplier, Wholesaler and Regular Dealer	60%		\$ _____	\$ _____	
8. MBE Total Amount			9. Total MBE Percent of Entire Contract		
10. Form Prepared by: Name: _____ Title: _____ Date: _____			11. Reviewed and Accepted by Board of Edu. MBE Liaison Name: _____ Title: _____ Date: _____		

Total MBE Participation:	\$ _____	_____ %	
Total African-American Participation:	\$ _____	_____ %	
Total Asian-American MBE Participation:	\$ _____	_____ %	
Total Other Participation:	\$ _____	_____ %	

Outreach Efforts Compliance Statement

****Complete and submit this form within 10 business days of notification of apparent award

In conjunction with the bid or offer submitted in response to the solicitation # _____
for Howard County Public Schools for the project, PSC # _____, I affirm the following:

1. Bidder/Offeror identified opportunities to subcontract in these specific work categories (extend list as needed):
 - a. _____
 - b. _____
 - c. _____
 - d. _____
 - e. _____
 - f. _____
2. Attached to this form are copies of written solicitations (with bidding instructions) used to solicit certified MBEs for these subcontract opportunities.
3. Bidder/Offeror made the following attempts to contact personally the solicited certified MBEs (extend list as needed):
 - a. _____
 - b. _____
 - c. _____
4. Select ONE of the following:
 - a. ☐ This contract does not involve bonding requirements.**OR**
 - b. ☐ Bidder/Offeror assisted certified MBEs to fulfill or seek waiver of bonding requirements (*describe efforts*).
5. Select ONE of the following:
 - a. ☐ Bidder/Offeror did/did not attend the pre-bid/proposal conference.**OR**
 - b. ☐ No pre-bid/proposal conference was held.

_____	By: _____
Bidder/Offeror Printed Name	Signature: _____
	Title: _____
	Date: _____
Address: _____	

MINORITY BUSINESS ENTERPRISES SUBCONTRACTOR PROJECT PARTICIPATION STATEMENT

PROJECT/ SCHOOL NAME: _____

PROJECT/ SCHOOL LOCATION: _____

LEA: _____

NAME OF PRIME CONTRACTOR: _____

NAME OF MBE SUBCONTRACTOR: _____

MDOT Certification Number

NAICS Code

1. Work/Services to be performed by MBE Subcontractor: _____

2. Subcontract Amount: \$ _____ Participation Amount \$ _____

3. Bonds - Amount and type required of Subcontractor if any: _____

4. MBE Anticipated or Actual Commencement Date: _____ Completion Date: _____

5. This MBE subcontract represents the following percentage of the total contract cost: _____

6. This is an African American Firm: Yes _____ No _____

7. This is an Asian American Firm: Yes _____ No _____

8. This is a Native American, Hispanic or Disabled Firm: Yes _____ No _____

(Circle One)

The undersigned subcontractor and prime contractor will enter into a contract for the work/service indicated above upon the prime contractor's execution of a contract for the above referenced project with the Board of Education. The undersigned subcontractor is a MDOT certified Minority Business Enterprise. The terms and conditions stated above are consistent with our agreements.

Signature of Subcontractor: _____

Date: _____

The term and conditions stated above are consistent with our agreements.

Signature of Prime Contractor: _____

Date: _____

MINORITY SUBCONTRACTOR UNAVAILABILITY CERTIFICATE

1. It is hereby certified that the firm of _____
(Name of Minority firm)
located at _____
(Number) (Street)

(City) (State) (Zip)
was offered an opportunity to bid on the _____ school project
in _____ County by _____
(Name of Prime Contractor's Firm)

2. _____ (Minority Firm), is either unavailable for the
work/service or unable to prepare a bid for this project for the following reason(s):

Signature of Minority Firm's MBE Representative

Title

Date

MDOT Certification #

Telephone #

3. To be completed by the prime contractor if Section 2 of this form is not completed by the minority firm.

To the best of my knowledge and belief, said Certified Minority Business Enterprise is either unavailable for the work/service for this project, is unable to prepare a bid, or did not respond to a request for a price proposal and has not completed the above portion of this submittal.

Signature of Prime Contractor

Title

Date

Attachment F

MBE WAIVER DOCUMENTATION

Project Name: _____ PSC No. _____

Base Contract Amount \$ _____

Plus Accepted Alternates \$ _____

Equals Total Contract Amount \$ _____

I have previously requested that a waiver be granted to the overall MBE goal for this project of ____ percent, with a minimum of ____ percent from certified African American-owned businesses, a minimum of ____ percent from certified Asian American-owned businesses, and the balance from all certified minority business enterprises, if applicable. This would include the total dollar value of all materials, supplies, equipment, and services, including construction services directly or indirectly, from Minority Business Enterprises (MBE) which are currently certified by the Maryland Department of Transportation (MDOT).

I _____, hereby certify that my position is
(Name of Company Representative)

_____, and I am the duly authorized representative of
(Position Title)

_____.
(Company Name)

I further certify that I have submitted a *Schedule for Participation of Certified Minority Business Enterprises* which reflects the percentage and dollar value of certified Minority Business Enterprise participation which my company expects to achieve for this contract. Therefore, the request for the waiver is as follows:

Summary MBE Participation Schedule from Attachment B

Minority Group	MBE GOAL		Actual MBE Participation		Request For Waiver	
	Dollar Value of Total Contract*	Percent of Total Contract	Dollar Value	Percent of Total Contract	Dollar Value	Percent of Total Contract
a. Sub Goal African American						
b. Sub Goal Asian American						
c. Other * in Sub Goal group a/b above						
TOTALS						

* with accepted/rejected alternates

To support this request for a waiver, I include the following information as attachments which I certify to be true to the best of my knowledge.

1. A detailed statement of the efforts made by the contractor to identify and select portions of the work proposed to be performed by subcontractors in order to increase the likelihood of achieving the stated goal;
2. A detailed statement of the efforts made by the contractor prior to and up to 10 days before the bid opening to solicit minority business enterprises through written notices that describe the categories of work for which subcontracting is being solicited, the type of work to be performed, and specific instructions on how to submit a bid;
3. A detailed statement of the contractor's efforts to make personal contact with MBE firms identified for Item 2. above;
4. A record of the name, address, telephone number, and dates contacted for each MBE identified under items 2. and 3. above;
5. A description of the information provided to MBE's regarding the plans, specifications and the anticipated time schedule for portions of the work to be performed;
6. Information on activities to assist minority business enterprises to fulfill bonding requirements, or to obtain a waiver of these requirements;
7. Information on activities to publicize contracting opportunities to minority business enterprises, attendance at pre-bid meetings, or other meetings scheduled by the MBE Liaison or designated representative;
8. As to each MBE that placed a subcontract quotation or offer which the apparent low bidder or successful offeror considers not to be acceptable, a detailed statement of reasons for this conclusion; and
9. A list of minority subcontractors found to be unavailable. This shall be accompanied by a Minority Subcontractor Unavailability Certificate signed by the minority business enterprise or from the apparent low bidder or successful offeror indicating that the minority business did not provide the written certification.

Signature _____
(Company Representative Name)

Date _____

Sworn and subscribed before me this _____ day.

of _____ in the year _____ Notary Public _____

Reviewed and accepted by the _____ County Board of Education MBE
Liaison.

(County Name)

Signature _____
(County Representative Name)

Date _____

MBE Request For Waiver Master Form (July 2002)

CERTIFIED MINORITY BUSINESS ENTERPRISE PARTICIPATION STANDARD MONTHLY CONTRACTOR'S REQUISITION FOR PAYMENT

IAC/PSCP Form 306.4

IAC/PSCP FORM 306.4

ATTACHMENT G

LEA: _____
FACILITY NAME: _____
SCOPE OF WORK: _____

DATE: _____
PSC NO: _____
REQ NO: _____

Name of MBE Sub-Contractor	MDOT Certification Number and Classification	TOTAL MBE Contract Amount	Amount to be Paid THIS Requisition	TOTAL Paid to Date	MBE has Received FINAL Payment?	If amount paid is LESS than TOTAL MBE Contract Amount, EXPLAIN VARIANCE
TOTAL:		\$ -	\$ -	\$ -		

MDOT Certification Number and Classification can be located at <http://mbe.state.mdot.state.md.us/directory/>

MBE Classification:

African American = AA
Hispanic American = H
Native American = N
Asian American = A
Women = W

African American/Women = AAW
Hispanic American/Women = HW
Native American/Women = NW
Asian American/Women = AW

I certify that the figures and information presented above represent accurate and true statements, that timely payments have been and will be made to suppliers and subcontractors on this project as requisitioned payments are received, and in accordance with our contracts.

Name of Contractor Firm

Authorized Contractor Signature/Date

Contractor Federal Tax ID #

Contractor MBE Classification # (if applicable)

Name of LEA MBE Liaison (Printed)

Signature of LEA MBE Liaison/Date

CERTIFIED MINORITY BUSINESS ENTERPRISE PARTICIPATION STANDARD MONTHLY CONTRACTOR'S REQUISITION FOR PAYMENT

IAC/PSCP Form 306.4

ATTACHMENT G

Instructions for Completion of IAC/PSCP Form 306.4 Page 3

THIS FORM TO BE COMPLETED BY PRIME CONTRACTOR ONLY

1. LEA – Enter full name of LEA.
2. Facility Name – Enter full name of school/facility.
3. Scope of Work – Enter type of work being performed (i.e. New, Renovation, Roof, HVAC, ASP – Flooring, QZAB – Media Center, etc.).
4. Date – Date of Requisition.
5. PSC NO – Enter full PSC Number as assigned by PSCP.
6. REQ NO – Enter the number of the corresponding Requisition for Payment.
7. Name of MBE Sub-Contractor – Enter full name of MBE Sub-Contractor.
8. MDOT Certification Number & Classification – Enter the 5 digit MDOT Certification number and corresponding MDOT Classification for each MBE Sub-Contractor. MDOT Classifications and the MDOT website are listed at the bottom of this form.
9. TOTAL MBE Contract Amount – Enter ORIGINAL Total MBE Contract Amount as stated on MBE Attachments B and D. This amount should NOT be altered with change order amounts, changes to scope of work, etc. which may affect contract amount.
10. Amount to be Paid This Requisition – Enter the amount to be paid to the MBE Sub-Contractor for work applicable to this requisition.
11. TOTAL Paid to Date – Enter the TOTAL amount paid to date to the MBE Sub-Contractor – this amount should NOT include the amount being paid on this requisition, only the total of prior payments.
12. MBE has Received FINAL Payment – Enter “YES” if the MBE Sub-Contractor has been paid in full. Enter “NO” if the MBE Sub-Contractor has NOT been paid in full.
13. If amount paid is LESS than TOTAL MBE Contract Amount, EXPLAIN VARIANCE – Enter a brief reason for the MBE Sub-Contractor NOT being paid equal to or greater than the ORIGINAL Total MBE Contract Amount as stated on this form and MBE Attachments B & D. Additional documentation may be required to be submitted for variance explanations.
14. Name of Contractor Firm – Enter full name of Prime Contractor.
15. Authorized Contractor Signature/Date – The authorized individual employed by the Prime Contractor who filled this form out should date and sign here.
16. Contractor Federal Tax ID # – Enter the Federal Tax ID Number of the Prime Contractor.
17. Contractor MBE Classification # - Enter the MDOT MBE Classification Number if the Prime Contractor is a MDOT certified MBE Company.
18. Name of LEA MBE Liaison – PRINT the name of the LEA MBE Liaison (or other LEA authorized employee) responsible for VERIFYING ALL INFORMATION filled out by the Prime Contractor on this form.
19. Signature of LEA MBE Liaison/Date – Signature of the person VERIFYING ALL INFORMATION filled out by the Prime Contractor on this form (signature of person stated in Step #18.)

CERTIFIED MINORITY BUSINESS ENTERPRISE PARTICIPATION STANDARD MONTHLY CONTRACTOR'S REQUISITION FOR PAYMENT

IAC/PSCP Form 306.4

ATTACHMENT G

Procedures for Request for Payment/Reimbursement for ALL PSCP Funded Programs

1. Use IAC/PSCP Form 306.4 Page 3.
2. The Prime Contractor must complete this Form and submit it with each Monthly Requisition/Invoice for Payment for each project in which they are seeking payment from either the Local Education Agency (LEA) or State of Maryland Public School Construction Program. If no MBE Sub-Contractors were utilized on a project (i.e., no MBE goals were set for the project and/or a full waiver was granted), this Form must still be submitted by the Prime Contractor.
 - a. IAC/PSCP Form 306.4 Page 3 must be PROJECT specific – If one bid/contract covers multiple projects (either different schools or scopes of work), this Form must be calculated and submitted by the Prime Contractor on an individual project basis.
 - b. IAC/PSCP Form 306.4 Page 3 must be Prime Contractor/Trade Package specific – If the IAC recognized multiple Prime Contractors and/or Trade Packages, this Form must be completed by each Prime/Trade Contractor recognized by the IAC and submitted.
3. All ORIGINAL MBE Sub-Contractors must be listed on this Form with their full company name, MDOT Certification Number, MDOT Classification and ORIGINAL Contract Amount as stated on MBE Attachments B & D. (ONLY MDOT Certified companies should be listed on this Form.)
4. Any additional MBE Sub-Contractors utilized on a project must be listed on this Form with their full company name, MDOT Certification Number, MDOT Classification and total contract amount. (ONLY MDOT Certified companies should be listed on this Form.)
5. The Prime Contractor should fill in the amount they intend to pay each MBE Sub-Contractor for the current requisition as well as all money paid to date. By signing this Form, the Prime Contractor is certifying their intent to pay the "Amount to be Paid This Requisition". They are also certifying the distribution of money listed under the "Total Paid to Date" column.
6. The LEA MBE Liaison shall verify each month with the MBE Sub-Contractors that all money listed under the "Total Paid to Date" column has been received from the Prime Contractor. By signing this Form, the LEA MBE Liaison is certifying all MBE Sub-Contractors have been paid all money due to them by the Prime Contractor.
7. The MBE Liaison should also be comparing the current Form with the prior month(s) to make sure information is not being duplicated and/or repeated. Payments to MBE Sub-Contractors should be progressive and recorded.
8. If for any reason, an amount the Prime Contractor listed on the Form as intending to pay the MBE Sub-Contractor was not made, or if the payment amount changed, the LEA MBE Liaison should be inquiring about the change in payment or non-payment to the MBE Sub-Contractor.
9. NO REQUESTS FOR PAYMENT/REIMBURSEMENT SHOULD BE SUBMITTED TO PSCP UNTIL THE PROCEDURES ABOVE HAVE BEEN COMPLETED.

Additional Submission Requirements Applicable to All State Funded Projects

1. If an ORIGINAL MBE Sub-Contractor listed on MBE Attachments B and D is not paid in full and/or not utilized on a project, the Prime Contractor shall submit in writing an explanation for either the reduction in contract amount/payment or why the MBE Sub-Contractor was not utilized.
2. It is the responsibility of the LEA MBE Liaison to contact the MBE Sub-Contractor to verify the explanation provided by the Prime Contractor. Any correspondence between the LEA MBE Liaison and both the Prime Contractor and MBE Sub-Contractors should be kept by the LEA and be made available to PSCP upon request or audit.
3. If an MBE Sub-Contractor originally listed on MBE Attachment B & D becomes unavailable and/or is not going to be utilized, this information should be communicated to the PSCP MBE Program Manager and the PSCP Finance Department by the LEA immediately.
4. If additional MBE Sub-Contractors are hired after the MBE Attachments B & D have been submitted to PSCP, the LEA MBE Liaison must submit this information to the PSCP MBE Program Manager and the PSCP Finance Department immediately.

Attachment - I

Application to Request Substitution or Removal of MBE Subcontractor(s)

Prime Contractor: _____ Date: _____

Project Name: _____

Reason for MBE Subcontractor Change(s): _____

List MBE Subcontractor(s) to be Removed:

Name of MBE Subcontractor	MDOT Certification Number	Total Original MBE Contract Amount	MBE % of Total Contract

List Replacement MBE Subcontractor(s) – if applicable*:

Name of MBE Subcontractor	MDOT Certification Number	Total MBE Contract Amount	MBE % of Total Contract

*If MBE Subcontractor(s) NOT Replaced, Please Provide “Good Faith” Effort Log:

Name of MBE Subcontractor	MDOT Certification Number	MBE Telephone #	Reason Unavailable

Note: “good faith” effort must comply with the standards set forth at the time of bid and referenced in the bid documents.

A change in subcontractor is a material change to the contract. The following is a minimal list of documents **required** to complete the change(s). Please complete and submit the items below with this application:

1. A supporting letter on prime contractor's letter head explaining the removal and replacement (if applicable) of the original subcontractor(s). A copy of this letter must also be sent to the removed subcontractor.
2. Documentation from the MBE subcontractor(s) being removed explaining the reason.
3. A revised Attachment B - MBE Participation Schedule recording changes in MBE participation.
4. A new Attachment D – Minority Business Enterprises Subcontractor Project Participation Statement for *each* new MBE subcontractor.
5. If removed MBE subcontractor(s) is NOT replaced, an Attachment E – Minority Subcontractor Unavailability Certificate should be included for *each* subcontractor contacted during "good faith" effort to replace MBE subcontractor(s).
6. If the removed MBE subcontractor(s) is NOT replaced, an Attachment F – MBE Waiver Documentation must be included in addition to "good faith" documentation.

Person Completing this Form

Name: _____

Signature: _____

Date: _____

HCPSS Purchasing Office - ONLY

Date Form Received: _____

Date Supporting Document(s) Received:	_____	Supporting Letter (Prime)
	_____	Documentation (Sub)
	_____	Revised Attachment B
	_____	New Attachment D
	_____	Attachment E (multiple)
	_____	Attachment F

APPROVED: _____ NOT APPROVED: _____

Purchasing Office Signature: _____ Date: _____

Comments: _____

EXHIBIT C

CONTRACTOR PERFORMANCE/EVALUATION SCORECARD

Upon completion of a project or at any time during the project, the awarded contractor may receive a performance evaluation scorecard rating the contractor's performance on the project. The evaluation scorecard will be completed by the project manager and become part of the contractor's permanent file. A sample Contractor Performance/Evaluation Scorecard is included with the bid documents.

The evaluation scorecard shall include the following performance indicators; Quality of Work, Responsiveness, Professionalism, Resources, Schedule Management, Quality Control, Deficiency Resolution, Submittal Management, Training, Appearance, Security, Safety, Utility Conservation, Disruptions, Quality of Materials, Emergency Response, Hazardous Materials, Innovation, Teamwork, Cost Management, Billing, Compliance.

A contractor shall have up to 3 weeks after notification to appeal, challenge or otherwise dispute the scorecard results. After the 3-week period, the scorecard shall be considered final and accepted by the contractor.

A contractor receiving a 70% or less overall evaluation scorecard rating for a project may be disqualified for bidding on any future projects with the HCPSS for a period of three (3) years and/or for the remaining contract term including renewal options.

Name of Contractor: _____

Name of Project: _____ Contract/Bid Number: _____

Reviewed by: _____ Department: _____

Please take a moment to tell us about this contractor's performance. We will summarize all the information we obtain about each contractor and provide it to them. Supporting documentation shall be required to support any scores noted on the performance evaluation scorecard.

HOW SATISFIED. Please tell us **how satisfied** you are with the **performance** of the contractor named above. Circle a 10 if you are highly satisfied with their performance on a measure. Circle a 1 if you are highly dissatisfied with their performance on a measure. Circle a number in between to show different degrees of satisfaction. Circle **N/A** for any performance indicators that do not apply to the project. There are no right or wrong answers; just tell us how you feel.

A contractor receiving a 70% or less overall evaluation scorecard rating for a project may be disqualified for bidding on any future projects with the HCPSS for a period of three (3) years and/or for the remaining contract term including renewal options. The contractor shall be notified of their performance status after each project.

Satisfaction with the contractor's performance:

Highly
Dissatisfied

Highly
Satisfied

1. **Quality of Work.** The contractor's ability to do the job right the first time.

1 2 3 4 5 6 7 8 9 10 N/A

2. **Responsiveness.** The contractor's ability to adapt to changes and meet unusual needs.

1 2 3 4 5 6 7 8 9 10 N/A

3. **Professionalism.** The courtesy and standards of conduct maintained by the contractor and his or her employees.

1 2 3 4 5 6 7 8 9 10 N/A

4. **Resources.** The contractor's ability to provide his or her employees with the tools, parts, and supplies needed to do the job.

1 2 3 4 5 6 7 8 9 10 N/A

5. **Schedule Management.** The contractor's ability to show up when scheduled and complete the work on time.

1 2 3 4 5 6 7 8 9 10 N/A

6. **Quality Control.** The contractor's ability to identify problems and

CONTRACTOR PERFORMANCE/EVALUATION SCORECARD

deficiencies before you do.	1	2	3	4	5	6	7	8	9	10	N/A
7. Deficiency Resolution. The contractor's ability to rapidly correct deficiencies in his or her work.	1	2	3	4	5	6	7	8	9	10	N/A
8. Submittal Management. The contractor's ability to provide submittals in a timely and efficient manner.	1	2	3	4	5	6	7	8	9	10	N/A
9. Training. The contractor's ability to provide employees well-trained in all aspects of their jobs.	1	2	3	4	5	6	7	8	9	10	N/A
10. Appearance. The contractor's ability to keep uniforms, tools, and vehicles clean so as to portray a positive image.	1	2	3	4	5	6	7	8	9	10	N/A
11. Security. The contractor's ability to safeguard your facilities and assets.	1	2	3	4	5	6	7	8	9	10	N/A
12. Safety. The contractor's ability to keep the workplace safe and comply with OSHA requirements.	1	2	3	4	5	6	7	8	9	10	N/A
13. Utility Conservation. The contractor's ability to use only the water, gas, electricity, and air conditioning needed to do the job.	1	2	3	4	5	6	7	8	9	10	N/A
14. Disruptions. The contractor's ability to keep interruptions to the operations of your firm or agency to a minimum.	1	2	3	4	5	6	7	8	9	10	N/A
16. Quality of Materials. The contractor's ability to use high quality parts and supplies.	1	2	3	4	5	6	7	8	9	10	N/A
17. Emergency Response. The contractor's ability to rapidly restore normal operations after an emergency, power outage, or severe weather.	1	2	3	4	5	6	7	8	9	10	N/A
18. Hazardous Materials. The contractor's ability to properly handle hazardous materials.	1	2	3	4	5	6	7	8	9	10	N/A
19. Innovation. The contractor's ability to use new materials and adopt new methods to increase effectiveness.	1	2	3	4	5	6	7	8	9	10	N/A
20. Teamwork. The contractor's ability to be a team player in order to assist in accomplishing the objectives of your firm or agency.	1	2	3	4	5	6	7	8	9	10	N/A
21. Cost Management. The reasonableness of the contractor's costs, especially for contract changes.	1	2	3	4	5	6	7	8	9	10	N/A
22. Billing. The contractor's ability to present correct and properly documented invoices.	1	2	3	4	5	6	7	8	9	10	N/A
23. Compliance. The contractor complied with all rules, requests, regulations And requirements. This includes compliance with instructions Regarding interactions with students, staff and others.	1	2	3	4	5	6	7	8	9	10	N/A

CONTRACTOR PERFORMANCE/EVALUATION SCORECARD

Please summarize the contractor's overall performance based on the scores for the performance indicators noted above:

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Please return the completed survey by email to: robert_gill@hcpss.org

Thank you for your prompt assistance.

Wilde Lake HS Theatrical House Lighting and Controls

Table of Contents

DIVISION 01 - GENERAL REQUIREMENTS

SECTION	PAGES
01 1100 Summary of Work	01 1100 - 1-2
01 1200 Alteration Project Procedures	01 1200 - 1-3
01 3100 Coordination	01 3100 - 1-3
01 3119 Project Meetings	01 3119 - 1-1
01 3300 Submittal Procedures	01 3300 - 1-5
01 4100 Regulatory Requirements	01 4100 - 1-10
01 4500 Quality Control	01 4500 - 1-3
01 5000 Temporary Facilities and Controls	01 5000 - 1-4
01 6000 Product Requirements	01 6000 - 1-3
01 7329 Cutting and Patching	01 7329 - 1-3
01 7700 Closeout Procedures	01 7700 - 1-4

DIVISION 02 - EXISTING CONDITIONS

SECTION	PAGES
02 4119 Selective Demolition	02 4119 - 1-5

DIVISION 07 - THERMAL AND MOISTURE PROTECTION

SECTION	PAGES
07 8400 Firestopping	07 8400 - 1-5

DIVISION 26 - ELECTRICAL

SECTION	PAGES
26 0101 Electrical General Provisions	26 0101 - 1-10
26 0500 Common Work Results for Electrical	26 0500 - 1-4
26 0503 Access Doors for Electrical Systems	26 0503 - 1-2
26 0504 Electrical Demolition	26 0504 - 1-3
26 0519 Wires and Cables	26 0519 - 1-7
26 0526 Grounding and Bonding	26 0526 - 1-2
26 0533 Conduits	26 0533 - 1-6
26 0534 Boxes	26 0534 - 1-2
26 0553 Identification for Electrical Systems	26 0553 - 1-6
26 0923 Lighting Control Systems	26 0923 - 1-39
26 5100 Interior Lighting	26 5100 - 1-5
28 3100 Fire Detection and Alarm System	28 3100 - 1-3

SECTION 01 1100

SUMMARY OF WORK

PART 1 - GENERAL

1.1 ENGINEER

- A. Throughout the Bidding and Contract Documents, General Requirements (Division 01), and technical sections, all references to the Engineer or to the Architect shall mean James Posey Associates, Inc.

1.2 SECTION INCLUDES

- A. Brief project description.
- B. Contractor use of site and premises.
- C. Owner occupancy.

1.3 DEFINITIONS

- A. Project correction period: A period after Substantial Completion of the work during which the Contractor shall correct every part of the work found to be not in accordance with the requirements of the contract documents, promptly after receipt of written notice.

1.4 BRIEF PROJECT DESCRIPTION

- A. The scope of this project includes correcting control issues with the auditorium house lighting, in addition to placing the house lighting on its own new lighting controls system.
 - 1. There are currently intermittent control issues with the auditorium house lighting, with selected house lights flashing at times, unable to be controlled from the console, unable to be dimmed, or dimming randomly. The theatrical lighting control system equipment is located in the catwalk above the auditorium and is manufactured by Entertainment Technology (ET), which is now defunct, making it difficult to find replacement parts.
 - 2. Additionally, the auditorium house lighting is currently directly connected to the theatrical dimming system. In other words, dimming equipment controlling house lighting is not separate from the theatrical performance / rehearsal stage lighting.
- B. House lighting, which includes ceiling lights and wall sconces in the auditorium, shall be disconnected from the theatrical dimming system and placed on its own lighting controls system, which will be interconnected with the existing theatrical dimming system. The existing theatrical dimming system will remain and be reused.

1.5 CONTRACTOR USE OF SITE AND PREMISES

- A. Access to site: Limited to areas of work indicated on drawings and to paved areas.
- B. Emergency building exits during construction: Keep existing exits clear.
- C. Construction operations: Limited areas noted on Drawings.

- D. Time restrictions for performing interior and exterior Work: See "Instruction to Bidders" for restrictions for on-site work hours.
- E. Utility outages and shutdown: Shall be arranged with Owner in writing no less than 10 days in advance.

1.6 OWNER OCCUPANCY

- A. The Owner will occupy the site and premises during entire period of construction for the conduct of normal operations.
- B. Cooperate with Owner to minimize conflict, and to facilitate Owner's operations.
- C. Schedule the work to accommodate this requirement.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01 1200

ALTERATION PROJECT PROCEDURES

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Coordinate work of trades and schedule elements of alterations and renovation work by procedures and methods to expedite completion of the Work.
- B. In addition to demolition specified in Division 02, and other sections and that specifically shown, cut, move or remove items as necessary to provide access or to allow alterations and new work to proceed. Include such items as:
 - 1. Repair or removal of hazardous or unsanitary conditions.
 - 2. Removal of abandoned items and items serving no useful purpose, such as abandoned piping, conduit and wiring.
 - 3. Removal of unsuitable or extraneous materials not marked for salvage, such as abandoned furnishings and equipment, and debris such as rotted wood, rusted metals and deteriorated concrete.
 - 4. Cleaning of surfaces and removal of surface finishes as needed to install new work and finishes.
- C. Patch, repair and refinish existing items to remain, to the specified condition for each material, with a workmanlike transition to adjacent new items of construction.
- D. Coordinate work to assure that required means of egress are open and clearly identified during the work. If temporary structures should be required to maintain egress, obtain required permits and provide structures as part of the work of this Contract.

1.2 RELATED SECTIONS

- A. Partial Owner occupancy: Section 01 1000.
- B. Cutting and patching: Section 01 7329.
- C. Construction schedules: Section 01 3300.
- D. Use of existing utilities: Section 01 5000.
- E. Cleaning during construction: Section 01 7700.

1.3 ALTERATIONS, CUTTING AND PROTECTION

- A. Assign the work of moving, removal, cutting and patching, to trades qualified to perform the work in a manner to cause least damage to each type of work, and provide means of returning surfaces to appearance of new work.
- B. Perform cutting and removal work to remove minimum necessary, and in a manner to avoid damage to adjacent work.

1. Cut finish surfaces such as masonry, tile, plaster or metals, by methods to terminate surfaces in a straight line at a natural point of division.
- C. Perform cutting and patching as specified in Section 01 7329.
- D. Protect existing finishes, equipment, and adjacent work which are scheduled to remain, from damage.
 1. Protect existing and new work from weather and extremes of temperature.
 - a. Maintain existing interior work above 60 degrees F.
 - b. Provide weather protection, waterproofing, heat and humidity control as needed to prevent damage to remaining existing work and to new work.
- E. Provide temporary enclosures to separate work areas from existing building and from areas occupied by Owner, and to provide weather protection.

PART 2 - PRODUCTS

2.1 PRODUCTS FOR PATCHING, EXTENDING AND MATCHING

- A. Provide same products or types of construction as that in existing structure, as needed to patch, extend or match existing work.
 1. Generally Contract Documents will not define products or standards of workmanship present in existing construction; determine products by inspection and any necessary testing and workmanship by use of the existing as a sample of comparison.
- B. Presence of a product, finish, or type of construction, requires that patching, extending or matching shall be performed as necessary to make Work complete and consistent to identical standards of quality.

PART 3 - EXECUTION

3.1 SPECIAL TECHNIQUES

- A. Patch and extend existing work using skilled mechanics that are capable of matching existing quality of workmanship. Quality of patches or extended work shall be not less than that specified for new work.

3.2 ADJUSTMENTS

- A. Where partitions are removed, patch floors, walls, and ceilings, with finish materials to match existing.
 1. Where removal of partitions results in adjacent spaces becoming one, rework walls, floors and ceiling to provide smooth planes without breaks, steps, or bulkheads.
 2. Where planes change, request instructions from Engineer as to method of making transition.

3.3 DAMAGED SURFACES

- A. Patch and replace any portion of an existing finished surface which is found to be damaged, lifted, or discolored, or shows other imperfections, with matching material.

1. Provide adequate support of substrate prior to patching the finish.
2. Refinish patched portions of painted or coated surfaces in a manner to produce uniform color and texture over entire surface.
3. When existing surface finish cannot be matched, refinish entire surface to nearest intersections, using the same finish used in comparable new work. Obtain approval before beginning the work.

3.4 TRANSITION FROM EXISTING TO NEW WORK

- A. When new work abuts or finishes flush with existing work, make a smooth transition. Patched work shall match existing adjacent work in texture and appearance so that the patch or transition is invisible at a distance of five feet.
 1. When finished surfaces are cut in such a way that a smooth transition with new work is not possible, terminate existing surface in a neat manner along a straight line at a natural line of division, and provide trim appropriate to finished surface. Obtain approval of proposed trim before beginning the work.

3.5 CLEANING

- A. Perform periodic and final cleaning as specified in Section 01 7700.
 1. Clean Owner-occupied areas daily.
 2. Clean spillage, overspray, and heavy collection of dust in Owner-occupied areas immediately.
- B. At completion of work of each trade, clean area and make surfaces ready for work of successive trades.
- C. At completion of alterations work in each area, provide final cleaning and return space to a condition suitable for use by Owner.

END OF SECTION

SECTION 01 3100

COORDINATION

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Administrative and supervisory requirements for coordinating construction.
- B. Procedures for review of documents and coordination of construction activity, including preparation of coordination drawings.
- C. Coordination with Owner's requirements.
- D. Coordination of work of various trades, suppliers, and subcontractors.

1.2 COORDINATION PROCEDURES

- A. In accordance with requirements of the General Conditions, before starting each portion of the work, study and compare the various drawings and other contract documents relative to that portion of the work, as well as other information and field measurements and drawings.
- B. Examples of items which may require particular field adjustment and coordination include, but are not limited to:
 - 1. Reflected ceiling plans, which require coordination with mechanical and electrical equipment installed in and above ceilings.
 - 2. Specifications and drawings for equipment and furnishings which require connections to and coordination with associated mechanical and electrical systems and devices.
 - 3. Installation of systems typically shown on contract drawings as diagrams and therefore subject to field adjustment.
 - a. Areas where two or more such systems are required to be installed in limited space.
 - 4. Areas subject to several simultaneously applied requirements of mechanical, electrical, and building codes.
- C. Immediately report as required by the General Conditions and by procedural and administrative specifications:
 - 1. If, during the coordination review or later during the progress of the work, errors, inconsistencies, or omissions are discovered.
 - 2. If a situation should develop which prevents the proper installation of any equipment or item, or compliance with the contract documents.
- D. Coordinate scheduling, submittals and work of the various sections of Specifications to assure efficient, timely, and orderly sequence of installation of construction elements. Provide for accommodating items to be installed later. Coordinate work so that each trade will have completed installations prior to construction which could obstruct their work.
- E. Dimensions: Coordinate sizing of various components to assure proper fit and location. Verify dimensions of existing work and of new construction and equipment.

- F. Drawings: Various products and systems have been indicated schematically or diagrammatically. Coordinate actual layout and dimensions, and prevent interference between components or trades.
- G. Substitution or Change: Determine and coordinate the effects. Upon approval of substitution or Change in the Work, accommodate all the consequent ramifications and costs.
- H. Sequence: Coordinate to provide normal progression of the Work in a timely manner without delays. Determine long-lead items and the requirements for items on which each sequence is dependent.
- I. Individual Inspection: Every subcontractor or trade is responsible for reviewing contract documents, and inspecting surfaces, substrates and areas related to the execution of their work.
- J. Coordinate trades to insure that proper clearances and access are provided for items which require operation and maintenance.
- K. Work under this contract is to be done during regular working hours. Cooperate with the Owner in setting up the schedule of work during the entire course of the project so as not to interfere with normal operations of Owner.
 - 1. All passageways and means of egress from the building shall be kept open during normal hours except where special arrangements are made in advance with Owner and authorities having jurisdiction.
 - 2. Do not schedule work within the existing building unless a custodian is on duty.
 - 3. Do not shut down domestic water, heating, air conditioning, electric, fire alarm, or waste systems, or Owner's equipment without consent of the Owner. Coordinate and schedule shutdowns with the Owner, giving the maximum notice time possible with a minimum of three working days in advance.
 - 4. Fire alarm system shall always be in operation when Contractor's personnel leave the project.

1.3 COORDINATION MEETINGS

- A. In addition to progress meetings specified in Section 01 3119, hold coordination meetings and preinstallation conferences with personnel and subcontractors to assure coordination of work.

1.4 COORDINATION OF SUBMITTALS

- A. Schedule and coordinate submittals. See requirements of the Section specifying submittal procedures.
- B. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, equipment.
- C. Coordinate requests for substitutions to assure compatibility of space, of operating elements and effect on work of other sections.

1.5 COORDINATION SUBMITTALS

- A. Coordination drawings: Prepare coordination drawings where careful and detailed coordination is needed, as required for situations described in "Coordination Procedures" above, and where required in other sections of specifications.
 - 1. Show relationships of components shown on separate shop drawings.

2. Show proposed field coordination of systems shown schematically or diagrammatically on contract drawings.
3. Indicate installation sequences.

1.6 COORDINATION OF SPACE

- A. Coordinate use of Project space and sequence of installation of mechanical and electrical work which is indicated diagrammatically on drawings. Follow route shown for pipes, ducts and conduits as closely as practicable, with due allowance for available physical space; make runs parallel with lines of building. Use space efficiently to provide access for other installations, for maintenance, and for repairs.
- B. In finished areas conceal pipes, ducts, and wiring in the construction. Coordinate locations of fixtures and outlets with finish elements.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Review of Work: Prior to the commencement of Work of each section of the specifications, carefully examine previously executed work performed under other sections or by other trades, which might affect execution of work of a section.
- B. Acceptance: Commencement of work of a Section will indicate acceptance by the Contractor of previously executed surfaces, substrates and areas of work. The commencement indicates that previous work has been inspected and meets the Contractor's requirements for warranty.

3.2 FIELD QUALITY CONTROL

- A. A competent superintendent shall be on the premises at all times to check, lay out, coordinate, and superintend the installation of work. Superintendent shall establish grades and lines relative to the work before starting, and be responsible for their accuracy.
- B. Coordinate completion and clean-up of work of separate sections in preparation for Substantial Completion.
- C. Coordinate access to site by various trades and subcontractors for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.
- D. Assemble and coordinate closeout submittals specified in Section 01 7700.

END OF SECTION

SECTION 01 3119
PROJECT MEETINGS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Preconstruction conference
- B. Progress meetings

1.2 RELATED SECTIONS

- A. Coordination: Section 01 3100.

PART 2 - PRODUCTS

Not used

PART 3 - EXECUTION

3.1 PRECONSTRUCTION CONFERENCE

- A. Owner will conduct conference for execution of Owner-Contractor Agreement.
- B. Owner will conduct conference for clarification of Owner and Contractor responsibilities in use of site and review of administration procedures.

3.2 PROGRESS MEETINGS

- A. Progress meetings shall be held at the job site no less than two weeks apart, and also when and if the Contractor or Engineer finds them necessary or advantageous to progress of work.
- B. Contractor, those subcontractors and those material suppliers concerned with current progress or with the scheduling of future progress, Engineer and Owner shall each be represented at these meetings by persons familiar with the details of work and authorized to conclude matters relating to work progress.
- C. Contractor shall conduct each progress meeting and prepare agenda of meeting with a copy for each attendee. Contractor shall keep accurate minutes of Progress Meetings, wording of which shall be approved by Engineer and shall promptly within two days distribute a sufficient number of copies to all parties.
- D. Contractor shall provide tables and chairs for meetings and a set of drawings and specifications shall be available for use.

END OF SECTION

SECTION 01 3300
SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 SUMMARY

- A. Submittal procedures.
- B. Manufacturer and subcontractor list.
- C. Product data.
- D. Shop drawings.
- E. Manufacturers' instructions.
- F. Schedule of values.
- G. Manufacturers' certificates.
- H. Project schedules.

1.2 RELATED SECTIONS

- A. Section 01 4500, Quality Control: Manufacturers' field services and reports.
- B. Section 01 7700, Closeout Procedures: Operation and maintenance manuals; certificates and special warranties; closeout submittals.

1.3 DEFINITIONS

- A. Coordination drawings show the relationship and integration of different construction elements that require careful coordination during fabrication or installation to fit in the space provided or to function as intended.
 - 1. Preparation of coordination drawings is specified in Division 01 Section "Coordination" and may include components previously shown in detail on Shop Drawings or Product Data.

1.4 SUBMITTAL PROCEDURES

- A. Transmit each submittal with a form or letter of transmittal acceptable to the Engineer.
- B. Sequentially number the transmittal forms. Resubmittals to have original number with an alphabetic suffix.
- C. Identify Project, Contractor, Subcontractor or supplier; pertinent Drawing sheet and detail number(s), and specification Section number, and paragraph, as appropriate. Identify specific service or location for which the item is to be used.

- D. 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.
- E. Schedule submittals to expedite the Project, and deliver to Engineer and Owner at business address. Coordinate submission of related items.
- F. Identify variations from Contract Documents and Product or system limitations which may be detrimental to successful performance of the completed work.
- G. Provide space for Contractor and Engineer review stamps.
- H. Revise and resubmit submittals as required, identify all changes made since previous submittal.
- I. Contractor's failure to make submittals in time for review and resubmittals shall not be allowed as a reason for extending contract time.
- J. Product data and shop drawings will not be reviewed until the manufacturer and subcontractor list has been accepted. Do not order, fabricate, or install any item until it has been reviewed and accepted.
- K. Distribute copies of reviewed submittals to concerned parties. Instruct parties to promptly report any inability to comply with provisions.

1.5 MANUFACTURER AND SUBCONTRACTOR LIST

- A. Within 7 days after date of Owner-Contractor Agreement, submit complete list of manufacturers and subcontractors proposed for use, with name of manufacturer, trade name, and model number of each product. A partial or incomplete list will not be accepted.
- B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.

1.6 PRODUCT DATA

- A. Submit submittal in electronic format to the Engineer and Owner.
- B. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information unique to this Project.
- C. The approval of a Shop Drawing or Product Data does not guarantee the measurements or the building conditions or that the Shop Drawings or Product Data have been checked to see that item submitted properly fits the building conditions. Approval shall not relieve the Contractor of the responsibility for furnishing material and performing work as required by the specifications and contract drawings; or the responsibility for verifying correctness of dimensions and quantities, and proper coordination of details and interface among trades.
- D. All exclusively electrical items furnished as associated items with mechanical items but not specifically described in the mechanical item submission, shall be submitted as a separate Shop Drawing but shall be clearly marked as associated with the mechanical item by specification paragraph.

- E. After review, distribute in accordance with Article on Procedures above and provide copies for Record Documents described in Section 01 7700, Closeout Procedures.

1.7 SHOP DRAWINGS

- A. Submit in electronic PDF format.
- B. Available space for equipment is indicated by the size of equipment shown on the drawings. Suppliers shall ascertain that their equipment will fit the available space. Include with shop drawings of equipment, drawings showing necessary deviations and changes required in materials and appurtenances made necessary by the units proposed to be furnished. Contractor shall be responsible for required changes without any additional cost.
- C. After review, distribute in accordance with Article on Procedures above and for Record Documents described in Section 01 7700, Closeout Procedures.

1.8 MANUFACTURER'S INSTRUCTIONS

- A. When specified in individual specification Sections, submit manufacturers' printed instructions for delivery, storage, assembly, installation, startup, adjusting, and finishing, in quantities specified for Product Data.
- B. Identify conflicts between manufacturers' instructions and Contract Documents.

1.9 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of Schedule of Values with preparation of the Contractor's Construction Schedule.
 - 1. Correlate line items in the Schedule of Values with other required administrative schedules and forms, including:
 - a. Contractor's Construction Schedule.
 - b. Application for Payment forms, including Continuation Sheets.
 - c. List of subcontractors.
 - d. Schedule of alternates.
 - e. List of products.
 - f. List of principal suppliers and fabricators.
 - g. Schedule of submittals.
 - 2. Submit the Schedule of Values at the earliest possible date but no later than 7 days before the date scheduled for submittal of the initial Applications for Payment.
- B. Format and content: Use the Project Manual table of contents as a guide to establish the format for the Schedule of Values. Provide at least one line item for each Specification Section.
 - 1. Identification: Include the following project identification on the Schedule of Values:
 - a. Project name and location.
 - b. Name of the Engineer.
 - c. Project number.
 - d. Contractor's name and address.
 - e. Date of submittal.

2. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:
 - a. Related specification section or division.
 - b. Description of work.
 - c. Name of subcontractor.
 - d. Name of manufacturer or fabricator.
 - e. Name of supplier.
 - f. Change Orders (numbers) that affect value.
 - g. Dollar value.
 - h. Percentage of Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.
3. Provide a breakdown of the Contract Sum in sufficient detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Break principal subcontract amounts down into several line items.
4. Round amounts to nearest whole dollar; the total shall equal the Contract Sum.
5. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment, purchased or fabricated and stored, but not yet installed.
 - a. Differentiate between items stored on-site and items stored off-site. Include requirements for insurance and bonded warehousing, if required.
6. Provide separate line items on the Schedule of Values for initial cost of the materials, for each subsequent stage of completion, and for total installed value of that part of the work.
7. Margins of cost: Show line items for indirect costs and margins on actual costs only when such items are listed individually in Applications for Payment. Each item in the Schedule of Values and Applications for Payment shall be complete. Include the total cost and proportionate share of general overhead and profit margin for each item.
 - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense, at the Contractor's option.
- C. Schedule updating: Update and resubmit the Schedule of Values prior to the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.10 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 whether material or product conforms to or exceeds specified requirements. Submit supporting reference date, affidavits, and certifications as appropriate.
- C. Certificates may be recent or previous test results on material or Product, but must be acceptable to Engineer.

1.11 CONSTRUCTION PROGRESS SCHEDULES

- A. Submit initial progress schedule in duplicate within 20 days after date of Owner-Contractor Agreement for Engineer review.
- B. Revise and resubmit as required.
- C. Submit revised schedules with each Application for Payment, identifying changes since previous version.
- D. Submit computer generated network analysis diagram using the critical path method, generally as outlined in Associated General Contractors of America (AGC) publication "The Use of CPM in Construction - A Manual for General Contractors and the Construction Industry".
- E. Show complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities. Indicate the early and late start, early and late finish, float dates, and duration.
- F. Indicate estimated percentage of completion for each item of Work at each submission.
- G. Indicate submittal dates required for shop drawings, product data, samples, and product delivery dates, including those furnished by Owner and under Allowances.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not used

END OF SECTION

SECTION 01 4100

REGULATORY REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. As a convenience to users of the contract documents, listings of organizations and their common acronyms or abbreviations which are referred to in the documents or which are among the authorities having jurisdiction.
- B. Description of submittals required for conformance to regulatory requirements.

1.2 DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requires, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.
- C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."
- D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. "Install": Unload, temporarily store, unpack, assemble, erect, place, anchor, apply, work to dimension, finish, cure, protect, clean, and similar operations at Project site.
- H. "Provide": Furnish and install, complete and ready for the intended use.
- I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.3 SUBMITTALS

- A. Secure certificates of approval from specified or other approved testing agencies, inspection agencies, and authorities having jurisdiction. Certificates shall cover all work, including, but not limited to, plumbing, ductwork, fire protection, and electrical. Submit certificates of approval prior to final acceptance of the work.

- B. Obtain, including the expediting of all necessary signatures and paperwork, permits, fees, and inspections required by city, county, state, or federal authorities having jurisdiction, and utility connections or extension charges. Pay for all certificates, permits, fees, inspections and connections. Include these costs in Applications for Payment only after copies of the certificates, permits, receipts, or reports have been transmitted to the Owner.
- C. Before starting construction, obtain necessary forms, completely fill them out, and file to obtain the permit and register the burners and boilers with the Maryland Department of the Environment, Bureau of Air Quality Control, local office as required by State regulations.

1.4 QUALITY ASSURANCE

- A. When these specifications call for materials or construction of a better quality or larger sizes than required by the codes and standards of the regulatory authorities or industry organizations, the provisions of the specifications shall take precedence.
- B. Provide without extra charge, additional materials and labor which may be required for compliance with these codes and standards even though the work is not mentioned in these specifications or shown on the contract drawings.
- C. Materials, equipment or workmanship specified by reference to number, symbol, or title of any industry or government agency standard shall comply with the applicable provisions of such standard, except as limited to type, class, or grade, or modified in contract specifications. Standards referred to in the specifications, except as modified, shall have full force and effect as though printed in detail in specifications.
- D. Regulatory authorities: The work covered under these specifications shall be performed in accordance with the applicable requirements of the authorities having jurisdiction. The applicable edition of a regulatory code is as defined by the authority. Where standards are referred to, comply with standards and revisions in effect as of the date of the contract documents. The applicable regulatory authorities include, but are not limited to:
 - 1. The State Department of Health.
 - 2. The National Electric Code (NEC, NFPA 70).
 - 3. The National Fire Protection Association (NFPA).
 - 4. Insurance Service Office of Maryland.
 - 5. International Building Code (IBC).
 - 6. International Energy Conservation, Fire, Fuel Gas, Mechanical, and Plumbing Codes (ICC).
- E. Trade associations and standards: The following abbreviations and acronyms, when referred to in the contract documents, mean the organizations identified below. Names and addresses are subject to change and are believed, but not assured, to be correct as of the date of the contract documents.

AA	Aluminum Association 900 19th St., NW, Suite 300 Washington, DC 20006 www.aluminum.org	(202) 862-5100
AABC	Associated Air Balance Council 1518 K St., NW, Suite 503 Washington, DC 20005 www.aabchq.com	(202) 737-0202

AAMA	American Architectural Manufacturers Association 1827 Walden Office Sq., Suite 104 Schaumburg, IL 60173-4268 www.aamanet.org	(847) 303-5664
AAN	American Association of Nurserymen (See ANLA)	
AASHTO	American Association of State Highway and Transportation Officials 444 North Capitol St., NW, Suite 249 Washington, DC 20001 www.aashto.org	(202) 624-5800
ABMA	American Boiler Manufacturers Association 950 North Glebe Rd., Suite 160 Arlington, VA 22203-1824 www.abma.com	(703) 522-7350
ACI	American Concrete Institute P.O. Box 9094 Farmington Hills, MI 48333-9094 www.aci-int.org	(248) 848-3700
ACIL	ACIL: The Association of Independent Scientific, Engineering, and Testing Firms 1629 K St., NW, Suite 400 Washington, DC 20006 www.acil.org	(202) 887-5872
ACPA	American Concrete Pipe Association 222 West Las Colinas Blvd., Suite 641 Irving, TX 75039-5423 www.concrete-pipe.org	(972) 506-7216
ADC	Air Diffusion Council 11 South LaSalle St., Suite 1400 Chicago, IL 60603	(312) 201-0101
AEIC	Association of Edison Illuminating Companies 600 N. 18th St. P.O. Box 2641 Birmingham, AL 35291-0992	(205) 250-2530
AFPA	American Forest and Paper Association (Formerly: National Forest Products Association) 1111 19th St., NW, Suite 800 Washington, DC 20036	(800) 878-8878 (202) 463-2700
AGA	American Gas Association 1515 Wilson Blvd. Arlington, VA 22209 www.aga.com	(703) 841-8400

AGMA	American Gear Manufacturers Association (AGMA) 1500 King Street, Suite 201 Alexandria, VA 22314-2730	(703) 684-0211
	Order Publications From: Global Engineering Documents 15 Inverness Lane East Englewood, CO 80112	(800) 854-7179
AISC	American Institute of Steel Construction One East Wacker Dr., Suite 3100 Chicago, IL 60601-2001	(800) 644-2400 (312) 670-2400
AISI	American Iron and Steel Institute 1101 17th St., NW Washington, DC 20036-4700 www.steel.org	(202) 452-7100
AMCA	Air Movement and Control Association International, Inc. 30 W. University Dr. Arlington Heights, IL 60004-1893 www.amca.org	(847) 394-0150
ANSI	American National Standards Institute 11 West 42nd St., 13th Floor New York, NY 10036-8002 www.ansi.org	(212) 642-4900
APA	Architectural Precast Association P.O. Box 08669 Fort Myers, FL 33908-0669	(941) 454-6989
API	American Petroleum Institute 1220 L St., NW, Suite 900 Washington, DC 20005-8029	(202) 682-8000
AREA	American Railway Engineering Association 50 F Street, N.W., Suite 5200 Washington, D.C. 20001	(202) 639-2190
ARI	Air-Conditioning and Refrigeration Institute 4301 Fairfax Dr., Suite 425 Arlington, VA 22203 www.ari.org	(703) 524-8800
ASHRAE	American Society of Heating, Refrigerating and Air- Conditioning Engineers 1791 Tullie Circle, NE Atlanta, GA 30329-2305 www.ashrae.org	(800) 527-4723 (404) 636-8400
ASME	American Society of Mechanical Engineers 345 East 47th St. New York, NY 10017-2392 www.asme.org	(800) 434-2763 (212) 705-7722

ASPE	American Society of Plumbing Engineers 8614 W. Catalpa Ave., Ste 1007-1009 Chicago, IL 60656-116	(805) 495-7120
ASSE	American Society of Sanitary Engineering 28901 Clemens Rd. Westlake, OH 44145 www.asse-plumbing.org	(216) 835-3040
ASTM	American Society for Testing and Materials 100 Barr Harbor Dr. West Conshohocken, PA 19428-2959 www.astm.org	(610) 832-9500
AWI	Architectural Woodwork Institute 1952 Isaac Newton Sq. Reston, VA 20190 www.awinet.org	(703) 733-0600
AWS	American Welding Society 550 NW LeJeune Rd. Miami, FL 33126 www.amweld.org	(800) 443-9353 (305) 443-9353
AWWA	American Water Works Association 6666 W. Quincy Ave. Denver, CO 80235 www.awwa.org	(800) 926-7337 (303) 794-7711
BIA	Brick Institute of America 11490 Commerce Park Dr. Reston, VA 22091-1525 www.bia.org	(703) 620-0010
CAGI	Compressed Air and Gas Institute c/o Thomas Associates, Inc. 1300 Sumner Ave. Cleveland, OH 44115-2851 www.taol.com/cagi	(216) 241-7333
CBM	Certified Ballast Manufacturers Association 1422 Euclid Ave., Suite 402 Cleveland, OH 44115-2094	(216) 241-0711
CDA	Copper Development Association, Inc. 260 Madison Ave., 16th Floor New York, NY 10016-2401 www.copper.org	(800) 232-3282 (212) 251-7200
CISPI	Cast Iron Soil Pipe Institute 5959 Shallowford Rd., Suite 419 Chattanooga, TN 37421	(423) 892-0137

CTI	Cooling Tower Institute P.O. Box 73383 Houston, TX 77273	(281) 583-4087
DEMA	Diesel Engine Manufacturers Association (DEMA) 2130 Keith Building, Cleveland, OH 44115	
EEI	Edison Electric Institute (EEI) 90 Park Avenue New York, NY 10016	
EIA	Electronic Industries Association 2500 Wilson Blvd. Arlington, VA 22201	(703) 907-7500
ETL	ETL Testing Laboratories, Inc. (Now part of ITS)	
FGMA	Flat Glass Marketing Association (See GANA)	
FM	Factory Mutual System 1151 Boston-Providence Tnpk. P.O. Box 9102 Norwood, MA 02062-9102 www.factorymutual.com	(781) 762-4300
FTI	Facing Tile Institute c/o Stark Ceramics P.O. Box 8880 Canton, OH 44711	(330) 488-1211
HI	Hydraulic Institute 9 Sylvan Way Parsippany, NJ 07054-3802	(201) 267-9700
IEEE	Institute of Electrical and Electronics Engineers 345 E. 47th St. New York, NY 10017-2394 www.ieee.org	(800) 678-4333 (212) 705-7900
IRI	Industrial Risk Insurers P.O. Box 5010 85 Woodland St. Hartford, CT 06102-5010	(860) 520-7300
ITS	Intertek Testing Services (Formerly: Inchcape Testing Services) P.O. Box 2040 3933 US Route 11 Cortland, NY 13045-7902 www.itsglobal.com	(800) 345-3851 (607) 753-6711

LPI	Lightning Protection Institute 3335 N. Arlington Heights Rd., Suite E Arlington Heights, IL 60004-7700	(800) 488-6864 (847) 577-7200
MIA	Marble Institute of America 30 Eden Alley, Suite 301 Columbus, OH 43215 www.marble-institute.com	(614) 228-6194
MSS	Manufacturers Standardization Society of the Valve and Fittings Industry 127 Park St., NE Vienna, VA 22180-4602	(703) 281-6613
NAAMM	National Association of Architectural Metal Manufacturers 8 South Michigan Ave., Suite 1000 Chicago, IL 60603 www.gss.net/naamm	(312) 456-5590
NAIMA	North American Insulation Manufacturers Association (Formerly: Thermal Insulation Manufacturers Association) 44 Canal Center Plaza, Suite 310 Alexandria, VA 22314 www.naima.org	(703) 684-0084
NCRPM	National Council on Radiation Protection and Measurements 7910 Woodmont Ave., Suite 800 Bethesda, MD 20814-3095 www.ncrp.com	(800) 229-2652 (301) 657-2652
NEBB	National Environmental Balancing Bureau 8575 Grovemont Circle Gaithersburg, MD 20877-4121	(301) 977-3698
NEMA	National Electrical Manufacturers Association 1300 N 17th St., Suite 1847 Rosslyn, VA 22209 www.nema.org	(703) 841-3200
NETA	InterNational Electrical Testing Association P.O. Box 687 106 Stone St. Morrison, CO 80465-1526 www.electricnet.com/neta	(303) 697-8441
NFPA	National Fire Protection Association One Batterymarch Park P.O. Box 9101 Quincy, MA 02269-9101 www.nfpa.org	(800) 344-3555 (617) 770-3000

NRCA	National Roofing Contractors Association O'Hare International Center 10255 W. Higgins Rd., Suite 600 Rosemont, IL 60018-5607 www.roofonline.org	(800) 323-9545 (847) 299-9070
NSF	NSF International (Formerly: National Sanitation Foundation) P.O. Box 130140 Ann Arbor, MI 48113-0140 www.nsf.org	(313) 769-8010
PDI	Plumbing and Drainage Institute 45 Bristol Dr., Suite 101 South Easton, MA 02375	(800) 589-8956 (508) 230-3516
PEI	Porcelain Enamel Institute 4004 Hillsboro Pike, Suite 224-B Nashville, TN 37215 www.porcelainenamel.com	(615) 385-5357
PPI	Plastic Pipe Institute (The Society of the Plastics Industry, Inc.) 1801 K St., NW, Suite 600L Washington, DC 20006 www.plasticpipe.org	(202) 974-5306
RFCI	Resilient Floor Covering Institute 966 Hungerford Dr., Suite 12-B Rockville, MD 20850-1714	(301) 340-8580
RMA	Rubber Manufacturers Association 1400 K St., NW, Suite 900 Washington, DC 20005 www.rma.org	(800) 220-7620 (202) 682-4800
SJI	Steel Joist Institute 3127 10th Ave., North Ext. Myrtle Beach, SC 29577-6760	(803) 626-1995
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association, Inc. 4201 Lafayette Center Dr. P.O. Box 221230 Chantilly, VA 20151-1209 www.smacna.org	(703) 803-2980
SSPC	Steel Structures Painting Council 40 24th St., 6th Floor Pittsburgh, PA 15222-4643	(412) 281-2331
SSPMA	Sump and Sewage Pump Manufacturers Association P.O. Box 647 Northbrook, IL 60065-0647	(847) 559-9233

STI	Steel Tank Institute 570 Oakwood Rd. Lake Zurich, IL 60047-1559	(847) 438-8265
TCA	Tile Council of America 100 Clemson Research Blvd. Anderson, SC 29625	(864) 646-8453
TIMA	Thermal Insulation Manufacturers Association (See NAIMA)	
UL	Underwriters Laboratories, Inc. 333 Pfingsten Rd. Northbrook, IL 60062 www.ul.com	(800) 704-4050 (847) 272-8800

- F. Federal Government Agencies: Names and titles of Federal Government standards- or specification-producing agencies are often abbreviated. The following abbreviations and acronyms referred to in the Contract Documents indicate names of standards- or specification-producing agencies of the Federal Government. Names and addresses are subject to change and are believed, but are not assured, to be accurate and up-to-date as of the date of the Contract Documents.

CFR	Code of Federal Regulations (Available from the Government Printing Office) Washington, DC 20401 (Material is usually published first in the "Federal Register.") www.access.gpo.gov	(202) 512-0000
EPA	Environmental Protection Agency 401 M St., SW Washington, DC 20460	(202) 260-2090
FCC	Federal Communications Commission 1919 M St., NW Washington, DC 20554	(202) 418-0126
FS	Federal Specification Unit (Available from GSA) 470 East L'Enfant Plaza, SW, Suite 8100 Washington, DC 20407	(202) 619-8925
OSHA	Occupational Safety and Health Administration (U.S. Department of Labor) 200 Constitution Ave., NW Washington, DC 20210	(202) 219-8148

1.5 OTHER REFERENCES

- A. International Code Council (ICC)
500 New Jersey Avenue, NW, 6th Floor
Washington, DC 20001
- B. Maryland Occupational Safety and Health Act (MOSHA)
State of Maryland Department of Health and Mental Hygiene
201 W. Preston Street, Baltimore, MD 21201
- C. Standardized Plant Names, Published by J. Horace McFarland, Harrisburg, PA, for the American Joint Committee on Horticultural Nomenclature.
- D. Applicable State, City and County Standard Details and Design Manuals for Water Mains, Sanitary Standards, and Storm Details.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION

SECTION 01 4500

QUALITY CONTROL

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Quality assurance and control of installation.
- B. References.
- C. Inspection and testing laboratory services.
- D. Tests of mechanical and electrical systems and equipment.
- E. Manufacturers' field services and reports.

1.2 RELATED SECTIONS

- A. Submittals: Section 01 3300.
- B. Requirements for material and product quality: Section 01 6000.

1.3 REFERENCES

- A. Conform to reference standard by date of issue current on date of Contract Documents.
- B. Obtain copies of standards when required by Contract Documents.
- C. Should specified reference standards conflict with Contract Documents, request clarification from Engineer before proceeding.
- D. The contractual relationship of the parties to the Contract shall not be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.4 QUALITY ASSURANCE

- A. The Specifications and Drawings are intended to define the minimum requirements, as to quality of materials, construction, finish and overall workmanship.
- B. In case of discrepancies between the specifications and drawings, the specifications should be followed as to the general methods and principles and the drawings followed as to sizes, capacities and specifics for corresponding parts. If sizes are omitted, the Engineer will determine sizes to be used.
- C. In all cases of doubt, uncertainty or conflict as to the true meaning of the specifications or drawings it is the responsibility of the Contractor to notify the Engineer and obtain a decision as to the intent, before initiating any work which may be affected by this decision.

1.5 SPECIALIST

- A. The term “specialist” as used in the specification shall mean an individual or firm of established reputation (or, if newly organized, whose personnel have previously established a reputation in the same field,) which is regularly engaged in, and which maintains a regular force of workers skilled in either (as applicable) manufacturing or fabricating items required by the contract, installing items required by the contract, or otherwise performing work required by the Contract. Where the contract specification requires installation by a specialist, the term shall also be deemed to mean either the manufacturer of the item, an individual or firm licensed by the manufacturer, or an individual or firm who will perform the work under the manufacturer’s direct supervision.
- B. Specialist shall submit a list of a minimum of three projects of similar type, size and duty, which have been performed for not less than five years.
- C. List shall include project name, address, name and phone number of Owner’s Representative, project size and type.

1.6 CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, Products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply fully with manufacturers’ instructions, including each step in sequence.
- C. Should manufacturers’ instructions conflict with Contract Documents, request clarification from Engineer before proceeding.
- D. Comply with specified standards as a minimum quality for the Work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Perform work by persons qualified to produce workmanship of specified quality.
- F. Secure Products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion or disfigurement.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TESTS

- A. Furnish all labor, specialties, equipment, services, and appurtenances required for the tests, and pay any other expenses incurred, including necessary changes to the systems as required to produce the specified results.
- B. Conduct all tests before any equipment is connected that would be subject to damage from the test pressure and voltage.
- C. Notify all parties whose presence is necessary for the test. Notify Engineer at least two days prior to the actual test.

- D. Perform specific tests on the systems and equipment installed as work of Division 23 for HVAC; and Division 26 for Electrical; and specified in technical sections.
- E. Tests shall be performed in accordance with the requirements of the applicable codes and as herein specified. The entire installation shall be proven complete and in readiness for regular and satisfactory use.
- F. Equipment, materials and workmanship found at fault during tests shall be replaced, repaired or made good to satisfaction of the Engineer, and test repeated.

3.2 INSPECTION AND TESTING LABORATORY SERVICES

- A. Contractor shall employ and pay for services of an independent testing laboratory to perform specified inspection and testing.
- B. The independent firm will perform inspections, tests, and other services specified in individual Specification Sections and as required by the Engineer.
- C. Reports will be submitted by the independent firm to the Engineer and Owner, indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.
- D. Cooperate with independent firm; furnish samples of materials, design mix, equipment, tools, storage and assistance as requested.
 - 1. Notify Engineer and independent firm 24 hours prior to expected time for operations requiring services.
 - 2. Make arrangements with independent firm and pay for additional samples and tests required for Contractor's use.
- E. Retesting required because of non-conformance to specified requirements shall be performed by the same independent firm on instructions by the Engineer. Payment for retesting will be charged to the Contractor by the Testing Laboratory.

3.3 MANUFACTURERS' FIELD SERVICES AND REPORTS

- A. Submit qualifications of observer to Engineer 30 days in advance of required observations. Observer subject to approval of Engineer and Owner.
- B. When specified in individual specification Sections, require material or Product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust, and balance of equipment as applicable, and to initiate instructions when necessary.
- C. Individuals to report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.
- D. Submit report in duplicate within 30 days of observation to Engineer for review.

END OF SECTION

SECTION 01 5000

TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Temporary Utilities: Electricity, ventilation, telephone service, water, and sanitary facilities.
- B. Temporary Controls: Barriers, fencing, and protection of the Work.
- C. Construction Facilities: Access roads, parking, and progress cleaning.

1.2 RELATED SECTIONS

- A. Project Meetings: Section 01 3119.
- B. Project Closeout: Section 01 7700.

PART 2 - PRODUCTS

- 2.1 Products shall comply with applicable sections of Division 2 through 33 and shall be commercial grade.

PART 3 - EXECUTION

3.1 TEMPORARY ELECTRICITY

- A. Connect to existing power service. Power consumption for construction shall not disrupt Owner's continuous service.
- B. Owner will pay cost of energy used. Exercise measures to conserve energy.
- C. Permanent convenience receptacles may be utilized during construction.

3.2 TEMPORARY VENTILATION

- A. Use existing ventilation equipment. Extend and supplement equipment with temporary fan units as required to maintain clean air for construction operations.
- B. Prevent dust or fumes from construction work from entering building ventilation systems.

3.3 TELEPHONE SERVICE

- A. Provide, maintain and pay for telephone service to field office at time of project mobilization.

3.4 TEMPORARY WATER SERVICE

- A. Connect to existing water source for construction operations.
- B. Owner will pay cost of water used. Exercise measures to conserve water.

3.5 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required facilities and enclosures. Existing facilities shall not be used.

3.6 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas to allow for Owner's use of site, and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
- B. Provide access, staging, and protection as necessary for proper handling of work.
- C. Provide protection for plant life designated to remain. Replace damaged plant life.
- D. Protect non-owned vehicular traffic, stored materials, site and structures from damage.

3.7 FENCING

- A. Construction: Commercial grade chain link fence.
- B. Provide 6 foot high fence around construction site; equip with vehicular gates with locks.

3.8 PROTECTION OF INSTALLED WORK

- A. Protect installed Work and provide special protection where specified in individual specification Sections.
- B. Provide temporary and removable protection for installed Products. Control activity in immediate work area to minimize damage.
- C. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- D. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- E. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- F. Prohibit traffic from landscaped areas.
- G. Each trade and subcontractor is responsible for preventing damage and soiling of work performed by other trades or subcontractors. Each trade and subcontractor is responsible for providing temporary protection of its own work.
 - 1. Protect Work from spills, splatters, dippings, adhesives, bitumens, mortars, paints, plasters, welding or burning.
 - 2. Protect finished Work from damage, defacement, staining, or scratching.
 - 3. Protect finish Work from cleaning agents, or grinding and finishing equipment.
 - 4. Protect adjacent and finished Work from damage, using tape, masking, covers or coatings and protective enclosures.
 - 5. Coordinate installations and temporarily remove items to avoid damage from finishing Work.

- H. Repair damage and soiling to the complete satisfaction of the Engineer; replace any materials or Work damaged to such an extent that they cannot be restored to their original condition, at no addition to the Contract Sum.

3.9 FIRE PROTECTION

- A. As a minimum, provide hand-carried, portable, UL-rated extinguishers with each work crew working inside the building.
- B. Select extinguishers in accordance with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.

3.10 SCAFFOLDING, TARPAULINS

- A. Wood Scaffolding: Do not use wood scaffolding, except for deck planking. All supporting members shall be of metal.
- B. Tarpaulins: Certified flame retardant in accordance with NFPA 701.

3.11 SAFETY

- A. Safety requirements of the Maryland Occupational Safety Authority supersede the following safety suggestions and shall govern all work on this project.
 - 1. Contact Owner's representative before starting any work.
 - 2. Make sure all objects attached to walls or ceilings are securely fastened.
 - 3. Do not work overhead of Owner's personnel.
 - 4. When cutting or chipping concrete, protect against spalling below and against flying chips.
 - 5. Do not block doors with ladders; if blocking is necessary, place a "Caution" sign on other side of door.
 - 6. Keep the work area clear of debris or other items over which people might trip.

3.12 HEAVY EQUIPMENT

- A. Provide, either through own organization or through Subcontractors, all construction cranes, and other rigging, concrete lifts, chutes, and the like required for completion of work.
- B. All such construction shall be carried out in conformance with local codes and subject to the approval of Engineer. Do not locate or move cranes, chutes or other heavy equipment in such a manner as to damage or strain the framework of any building. Contractor shall be responsible for the integrity of the site and shall replace any and all construction damaged by the use of equipment.
- C. Contractor and its Subcontractors shall be entirely responsible for the proper handling and safety of all equipment used.

3.13 SECURITY

- A. Provide security and facilities to protect Work, and existing facilities, and Owner's operations from unauthorized entry, vandalism, or theft.
- B. Coordinate with Owner's security program.

3.14 ACCESS ROADS

- A. Construct and maintain temporary roads accessing public thoroughfares to serve construction area.
- B. Extend and relocate as Work progress requires. Provide detours necessary for unimpeded traffic flow.
- C. Provide and maintain access to fire hydrants, free of obstructions.
- D. Existing on-site roads may be used for construction traffic.
- E. Use of sidewalks or roads outside the property lines shall be with permission and approval of the authorities having jurisdiction.

3.15 PARKING

- A. When site space is not adequate, provide additional off-site parking.

3.16 PROGRESS CLEANING

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
- C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
- D. Remove waste materials, debris, and rubbish from site daily and dispose off-site.

3.17 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary above grade or buried utilities, equipment, facilities, materials, prior to Substantial Completion inspection.
- B. Remove underground installations to a minimum depth of 2 feet.
- C. Clean and repair damage caused by installation or use of temporary work.
- D. Restore existing facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

END OF SECTION

SECTION 01 6000
PRODUCT REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Products.
- B. Product Options.
- C. Substitutions.
- D. Delivery, Storage, and Handling.

1.2 PRODUCTS

- A. Products: Means new material, 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.
- B. Labeling and Testing Electrical Components and Equipment: As specified in Mechanical and Electrical Basic Materials and Methods.
- C. Do not use materials and equipment removed from existing premises, except as specifically permitted by the Contract Documents.
- D. Provide interchangeable components of the same manufacturer, for similar components.
- E. All products and materials shall be of the specified level of quality, suitable for the conditions and expected performance of the project, and of standard manufacture.
- F. All equipment, construction and installation must meet requirements of Local, State and Federal Governing Codes.
- G. Singular Number: In cases where material, a device, or part of the equipment is referred to in the singular number in the specifications, it is intended that such reference shall apply to as many items of material, devices, or parts of the equipment as are required to complete the installation as shown on the drawings or required for proper operation of the system.

1.3 PRODUCT OPTIONS

- A. General: Where Contractor is permitted to use a product other than the specific item and model named as the basis of design, Contractor is responsible for all coordination and additional costs as specified in article 1.5 for substitutions.
- B. Products Specified by Reference Standards or by Description Only: Any product meeting those standards or description.

- C. Products specified by naming one or more manufacturers, or model name or catalog reference number: Products specified establish a standard of quality, options to be included, and performance.
 - 1. Where other acceptable manufacturers are named, Contractor may provide products only of those manufacturers, which meet the specifications.
 - 2. Where specification permits "equal" products, without naming other acceptable manufacturers, Contractor may use products of any manufacturer, which meet the specifications.
- D. Products Specified by Naming One Manufacturer or particular product, with no provision for other options: No options or substitutions allowed.

1.4 SUBSTITUTIONS

- A. Engineer will consider requests for Substitutions only within 30 days after date of Owner-Contractor Agreement.
- B. Instructions to Bidders specify time restrictions for submitting requests for Substitutions during the bidding period, in accordance with requirements specified in this Section.
- C. Substitutions may be considered when a product becomes unavailable through no fault of the Contractor.
- D. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.
- E. A request constitutes a representation that the Contractor:
 - 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
 - 2. Will provide the same warranty for the Substitution as for the specified product.
 - 3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.
 - 4. Waives claims for additional costs or time extension which may subsequently become apparent.
 - 5. Will reimburse Owner for review or redesign services associated with re-approval by authorities.
- F. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Transport and handle products in accordance with manufacturer's instructions.
- B. Promptly inspect shipments to assure that products comply with requirements, quantities are correct, and products are undamaged.
- C. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

- D. Store and protect products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weather-tight, climate controlled enclosures.
- E. For exterior storage of fabricated products, place on sloped supports, above ground.
- F. Provide off-site storage and protection when site does not permit on-site storage or protection.
- G. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation.
- H. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
- I. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- J. Arrange storage of products to permit access for inspection. Periodically inspect to assure products are undamaged and are maintained under specified conditions.
- K. Ship equipment in sections of suitable size for entering the building. Make all necessary arrangements for bringing equipment into the building and installing it in its ultimate location.
- L. Deliver all package products to the job site in manufacturer's unopened, original, standard containers with grade seals unbroken and labels intact.
- M. All materials received on the site shall be clean or be cleaned upon arrival.
- N. Consult the Engineer before placing building materials or supplies on the building structure, so as not to overload the structure.
- O. Laterally brace stacks and piles of materials.
- P. Metals shall be free of mud, ice, frost, rust or foreign materials which will damage the finish.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.1 FIELD QUALITY CONTROL

- A. All materials and equipment shall be installed and completed in a first class and workmanlike manner and in accordance with the best modern methods, practice and manufacturer's instructions. Any work which does not present an orderly and neat or workmanlike appearance shall be removed and replaced when so directed in writing by the Engineer.

END OF SECTION

SECTION 01 7329

CUTTING AND PATCHING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Requirements and limitations for cutting and patching of Work.

1.2 RELATED SECTIONS

- A. Work by Owner or by separate contractors: Section 01 1000
- B. Submittal procedures: Section 01 3300.
- C. Product options and substitutions: Section 01 6000.
- D. Individual product specification sections:
 - 1. Cutting and patching incidental to work of the Section.
 - 2. Advance notification to other Sections of openings required in work of those Sections.
 - 3. Limitations on cutting structural members.

1.3 SUBMITTALS

- A. Submit written request in advance of cutting or alteration which affects:
 - 1. Structural integrity of any element of Project.
 - 2. Integrity of fire rating of any fire-rated assembly.
 - 3. Integrity of weather-exposed or moisture-resistant element.
 - 4. Efficiency, maintenance, or safety of any operational element.
 - 5. Visual qualities of sight exposed elements.
 - 6. Work of Owner or separate contractor.
- B. Include in request:
 - 1. Identification of Project.
 - 2. Location and description of affected work.
 - 3. Necessity for cutting or alteration.
 - 4. Description of proposed work, and products to be used.
 - 5. Alternatives to cutting and patching.
 - 6. Effect on work of Owner or separate contractor.
 - 7. Written permission of affected separate contractor.
 - 8. Date and time work will be executed.
- C. Submit evidence of Specialist's experience.

1.4 PROJECT CONDITIONS

- A. If, in the course of the work, workers encounter a material they suspect to be asbestos, to contain lead or PCBs, or to present some other hazard:

1. Promptly notify the Owner and Engineer in writing.
 2. Do not perform any work which would disturb the suspected material until written instructions have been received.
- B. Drawings showing utilities in concealed locations are based on the best information available but are not represented as being precisely correct. Work of the contract includes digging, cutting, drilling, using nondestructive methods, and other methods of locating concealed utilities in the field.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Primary products: Those required for original installation. Comply with contract requirements.
- B. Product substitution: For any proposed change in materials, submit request for substitution as required in Section 01 6000.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Inspect existing conditions prior to commencing Work, including elements subject to damage or movement during cutting and patching.
- B. After uncovering existing work, inspect conditions affecting performance of work.
- C. Report unsatisfactory or questionable conditions to Engineer in writing; do not proceed with work until Engineer has provided further instructions.
- D. Beginning of cutting or patching means acceptance of existing conditions.

3.2 PREPARATION

- A. Provide temporary supports to ensure structural integrity of the Work. Provide devices and methods to protect other portions of Project from damage.
- B. Provide protection from elements for areas which may be exposed by uncovering work.

3.3 CUTTING AND PATCHING

- A. Execute cutting, fitting, and patching to complete work.
- B. Fit products together, to integrate with other work.
- C. Uncover work to install ill-timed work.
- D. Remove and replace defective or non-conforming work.
- E. Provide openings in the work for penetration of mechanical and electrical work.

3.4 PERFORMANCE

- A. Execute work by methods to avoid damage to other work, and which will provide appropriate surfaces to receive patching and finishing.
- B. Where possible, employ original installer to perform cutting and patching for weather exposed and moisture resistant elements, and sight-exposed surfaces.
- C. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval. Neatly cut holes and slots to size required, with minimum disturbance to adjacent work; cut holes in concrete slabs for pipes and conduit with core drills of proper sizes. Openings shall be covered temporarily when not in use and patched as soon as work is installed.
 - 1. Do not cut or core drill floor slab until reinforcing steel in the area to be cut has been located, and penetration has been designed so that it will not damage reinforcing.
 - 2. Method for location: Non-destructive testing using a calibrated metal detector (R-meter type).
- D. Restore work with new products in accordance with requirements of Contract Documents.
- E. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- F. Where patching fire-rated assemblies, restore each assembly with materials and methods to maintain its fire rating.
- G. At penetrations of fire-rated walls, partitions, ceilings, or floors, completely seal voids with firestopping material in accordance with Section 07 8400, to full thickness of the penetrated element.
- H. Refinish surfaces to match adjacent finish. For continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.

END OF SECTION

SECTION 01 7700
CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Closeout procedures.
- B. Final cleaning.
- C. Adjusting.
- D. Project record documents.
- E. Operation and maintenance data.
- F. Warranties.
- G. Spare parts and maintenance materials.

1.2 RELATED SECTIONS

- A. Submittals: Section 01 3300.
- B. Cleaning: Section 01 5000.
- C. Special project warranties: Individual technical sections, Divisions 02-33.

1.3 SUBMITTALS

A. Closeout Procedures:

- 1. 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 inspection.
- 2. Provide submittals to Engineer that is required by governing or other authorities.
- 3. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.
 - a. Owner will occupy all of the building as specified in Section 01 1000.

B. Project Record Documents:

- 1. Maintain on site, one set of the following record documents; record actual revisions to the Work:
 - a. Contract Drawings.
 - b. Specifications.
 - c. Addenda.
 - d. Change Orders and other Modifications to the Contract.
 - e. Reviewed shop drawings, product data, and samples.

2. Maintain Record Documents separate from documents used for construction.
3. Record information concurrent with construction progress.
4. Specifications: Legibly mark and record at each Product section description of actual Products installed, including the following:
 - a. Manufacturer's name and product model and number.
 - b. Product substitutions or alternates utilized.
 - c. Changes made by Addenda and Modifications.
5. Record Documents and Shop Drawings: Legibly mark each item to record actual construction including:
 - a. Measured depths of foundations in relation to finish first floor datum.
 - b. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - c. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
 - d. Field changes of dimension and detail.
 - e. Details not on original Contract Drawings.
6. Submit documents to Engineer with final Application for Payment.

C. Operation and maintenance data:

1. Prepare covers with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS", and title of project.
2. Internally subdivide the contents with permanent page dividers, logically organized as described below; with tab titling clearly printed under reinforced laminated plastic tabs.
3. Contents: Prepare a Table of Contents, with each product or system description identified.
4. Part 1: Directory, listing names, addresses, and telephone numbers of Electrical Engineer; Contractor; Subcontractors; and major equipment suppliers.
5. Part 2: Operation and maintenance instructions, arranged by specification section. For each category, identify names, addresses, and telephone numbers of subcontractors and suppliers. Identify the following:
 - a. Significant design criteria.
 - b. List of equipment, including operating weights.
 - c. Parts list for each component, including recommended spare parts list.
 - d. Operating instructions.
 - e. Maintenance instructions for equipment and systems.
 - f. Maintenance instructions for finishes, including recommended cleaning methods and materials and special precautions identifying detrimental agents.
6. Part 3: Project documents and certificates, including the following:
 - a. Shop drawings and product data.
 - b. Photocopies of certificates.
 - c. Photocopies of warranties, guarantees, and bonds.
 - d. Test Reports: Copies of the results of all tests required under all sections of specifications.
7. Submit one copy in final form 15 days prior to final inspection. This copy will be returned

after final inspection, with Engineer comments. Revise content of documents as required prior to final submittal.

8. Submit final copy revised, within ten days after final inspection.

1.4 WARRANTIES

- A. Work and equipment provided as work of the Contract shall be fully warranted under the general project warranty. In addition, provide added special warranties as specified in individual sections.
- B. During the correction period, the Contractor shall promptly correct any work found to be defective, or otherwise not in accordance with the requirements of the Contract Documents, on receipt of written notice from the Owner. Except as otherwise required in General Conditions, the correction period is two years after the date of substantial completion of the work. Work requiring correction shall promptly be repaired or completely replaced at no addition to the Contract Sum.
- C. When use of the permanent equipment has been permitted for temporary heating or ventilation of the building, the warranty and correction periods shall nevertheless begin at the time of substantial completion, unless another date of acceptance has been agreed to in writing by the Owner.
- D. Special warranties are warranties required by individual specification sections, incidental product warranties, manufacturers' standard warranties, installer or subcontractor service agreements, and other individual warranties in addition to the general project warranty.
- E. Provide duplicate notarized copies.
- F. Execute and assemble documents from Subcontractors, suppliers, and manufacturers.
- G. Submit to Owner prior to final Application for Payment.
- H. For items of Work delayed beyond date of Substantial Completion, provide updated submittal within ten days after acceptance, listing date of acceptance as start of warranty period.

1.5 SPARE PARTS AND MAINTENANCE MATERIALS

- A. Provide products, spare parts, maintenance and extra materials in quantities specified in individual specification Sections.
- B. Deliver to Project site and place in location as directed by Owner; obtain receipt prior to final payment.

PART 2 - PRODUCTS

Not used

PART 3 - EXECUTION

3.1 ADJUSTING

- A. Adjust operating products and equipment to ensure smooth and unhindered operation.

3.2 FINAL CLEANING

- A. Execute final cleaning prior to final inspection.
- B. Clean interior and exterior glass and surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
- C. Clean equipment and fixtures to a sanitary condition.
- D. Clean site; sweep paved areas, rake clean landscaped surfaces.
- E. Remove waste and surplus materials, rubbish, and construction facilities from the site.

3.3 OPERATING INSTRUCTIONS

- A. Provide operating instructions as specified in Sections 26 0500.

END OF SECTION

SECTION 02 4119

SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. This section includes the following:

1. Demolition and removal of selected portions of a building or structure.
2. Demolition and removal of selected site elements.
3. Repair procedures for selective demolition operations.

B. Related sections include the following:

1. Cutting and Patching for cutting and patching procedures for selective demolition operations Division 01.
2. Demolishing, cutting, patching, or relocating mechanical items: Division 23.
3. Demolishing, cutting, patching, or relocating electrical items: Division 26.

1.2 REFERENCES

- A. ANSI A10.6: Safety Requirements for Demolition.
- B. NFPA 241: Safeguarding Construction, Alteration, and Demolition Operations.

1.3 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.
- B. Remove and salvage: Detach items from existing construction and deliver them to Owner.
- C. Remove and reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.
- D. Existing to remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.4 MATERIALS OWNERSHIP

- A. Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, demolished materials shall become Contractor's property and shall be removed from Project site.

1.5 SUBMITTALS

- A. Qualification data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- B. Inventory: After selective demolition is complete, submit a list of items that have been removed and salvaged.

- C. Landfill records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous or regulated wastes.

1.6 QUALITY ASSURANCE

- A. Demolition firm qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this project.
- B. Regulatory requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- C. Standards: Comply with ANSI A10.6 and NFPA 241.

1.7 PROJECT CONDITIONS

- A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted. Provide not less than 72 hours' notice to Owner of activities that will affect Owner's operations.
- B. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.
 - 1. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from authorities having jurisdiction.
- C. Owner assumes no responsibility for condition of areas to be selectively demolished.
 - 1. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- D. Hazardous materials: It is not expected that hazardous materials will be encountered in the work.
 - 1. Hazardous materials will be removed by Owner before start of the work.
 - 2. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Engineer and Owner. Hazardous materials will be removed by Owner under a separate contract.
- E. Storage or sale of removed items or materials on-site will not be permitted.
- F. Utility service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
- G. Maintain fire-protection facilities in service during selective demolition operations.

1.8 WARRANTY

- A. Existing warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.
 - 1. If possible, retain original Installer or fabricator to patch the exposed Work listed below that is damaged during selective demolition. If it is impossible to engage a Specialist as specified in Section 01 4500, Quality Control.

PART 2 - PRODUCTS

2.1 REPAIR MATERIALS

- A. Use repair materials identical to existing materials.
 - 1. If identical materials are unavailable or cannot be used for exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
 - 2. Use materials whose installed performance equal or surpasses that of existing materials.
- B. Comply with material and installation requirements specified in individual specification sections.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped.
- B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- C. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Engineer.
- D. Perform surveys as the work progresses to detect hazards resulting from selective demolition activities.

3.2 UTILITY SERVICES

- A. Existing utilities: Maintain services indicated to remain and protect them against damage during selective demolition operations.
- B. Do not interrupt existing utilities serving occupied or operating facilities unless authorized in writing by Owner and authorities having jurisdiction. Provide temporary services during interruptions to existing utilities, as acceptable to Owner and to authorities having jurisdiction.
 - 1. Provide at least 72 hours' notice to Owner if shutdown of service is required during changeover.
- C. Utility requirements: Refer to Divisions 23 and 26 Sections for shutting off, disconnecting, removing, and sealing or capping utilities. Do not start selective demolition work until utility disconnecting and sealing have been completed and verified in writing.

3.3 PREPARATION

- A. Dangerous materials: Drain, purge, or otherwise remove, collect, and dispose of chemicals, gases, explosives, acids, flammables, or other dangerous materials before proceeding with selective demolition operations.
- B. Site access and temporary controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Maintain streets and walkways, erect temporary protection, and protect existing site improvements as required in Section 01 5000, Temporary Facilities and Controls.
2. Erect a plainly visible fence around drip line of individual trees or around perimeter drip line of groups of trees to remain.

3.4 POLLUTION CONTROLS

- A. Dust control: Use temporary enclosures, and other suitable methods to limit spread of dust and dirt. Comply with governing environmental-protection regulations.
 1. Do not use water when it may damage existing construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.
 2. Wet mop floors to eliminate trackable dirt and wipe down walls and doors of demolition enclosure. Vacuum carpeted areas.
- B. Disposal: Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- C. Cleaning: Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

3.5 SELECTIVE DEMOLITION

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the work within limitations of governing regulations and as follows:
 1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
 2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
 3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
 5. Maintain adequate ventilation when using cutting torches.
 6. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
 7. Remove large objects and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
 8. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 9. Dispose of demolished items and materials promptly.
 10. Return elements of construction and surfaces that are to remain to condition existing before selective demolition operations began.
- B. Existing facilities: Comply with building manager's requirements for using and protecting elevators, stairs, walkways, loading docks, building entries, and other building facilities during selective demolition operations.

- C. Existing Items to remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Engineer, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.
- D. Concrete: Demolish in small sections. Cut concrete to a depth of at least 3/4 inch (19 mm) at junctures with construction to remain, using power-driven saw. Dislodge concrete from reinforcement at perimeter of areas being demolished, cut reinforcement, and then remove remainder of concrete indicated for selective demolition. Neatly trim openings to dimensions indicated.
- E. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, then remove masonry between saw cuts.
- F. Concrete slabs-on-grade: Saw-cut perimeter of area to be demolished, then break up and remove.

3.6 PATCHING AND REPAIRS

- A. General: Promptly repair damage to adjacent construction caused by selective demolition operations.
- B. Patching: Comply with Section 01 7329, Cutting and Patching.

3.7 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.
- B. Burning: Do not burn demolished materials.
- C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

END OF SECTION

SECTION 07 8400

FIRESTOPPING

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Through-penetration firestopping in fire-rated construction.
- B. Through-penetration smoke-stopping in smoke partitions.

1.2 RELATED SECTIONS

- A. Conduit: Section 26 0533.

1.3 REFERENCES

- A. Underwriters Laboratories
 - 1. UL Fire Resistance Directory
 - 2. UL 1479: Through Penetration Firestops.
- B. American Society for Testing and Materials Standards:
 - 1. ASTM E 814: Standard Test Method for Fire Tests of Through-Penetration Firestops.

1.4 DEFINITIONS

- A. Assembly: Particular arrangement of materials specific to given type of construction described in referenced documents.
- B. Barriers: Time-rated fire walls, smoke barrier walls, time-rated ceiling/floor assemblies and structural floors.
- C. Firestopping: Methods and materials applied in penetrations and unprotected openings to limit spread of heat, fire, gasses and smoke.
- D. Penetration: Opening or foreign materials passing through or into barrier or structural floor such that full thickness of rated materials is not obtained.
- E. Sleeve: Metal fabrication or pipe section extending through thickness of barrier and used to permanently guard penetration. Sleeves are described as part of penetrating system in other sections and may or may not be required.
- F. System: Specific products and applications, classified and numbered by the rating agency to close specific barrier penetrations.

1.5 SYSTEM DESCRIPTION

- A. Design requirements:
 - 1. Fire-rated construction: Maintain barrier and structural floor fire resistant ratings including resistance to cold smoke at all penetrations.

2. Smoke barrier construction: Maintain barrier and structural floor resistance to cold smoke at all penetrations.

1.6 SUBMITTALS

- A. Product data: Manufacturer's specifications and technical data including the following:
 1. Detailed specification of construction and fabrication.
 2. Manufacturer's installation instructions.
- B. Shop drawings: Submit firestop assemblies and devices for all openings and through penetrations in fire-rated construction. Indicate dimensions, description of materials and finishes, general construction, specific modifications, component connections, anchorage methods, hardware, and installation procedures, plus the following specific requirements.
 1. Details of each proposed assembly identifying intended products and applicable rating agency classification.
 2. Manufacturer or manufacturer's representative shall provide qualified engineering judgments and drawings relating to conditions where rated assemblies do not exist.
- C. Quality control submittals:
 1. Statement of qualifications.
- D. Certifications: Letters or forms showing acceptance by local authorities for systems without acceptance by a rating agency.

1.7 QUALITY ASSURANCE

- A. Products and assemblies shall be tested and labeled by an independent, nationally recognized testing and labeling authority.
- B. Installer's qualification: Firm experienced in installation or application of systems similar in complexity to those required for this project, plus the following:
 1. Acceptable to or licensed by manufacturer, state, or local authority where applicable.
 2. At least 2 years' experience with systems.
 3. Successfully completed at least 5 projects of comparable scale, using these systems.
- C. Local and state regulatory requirements: Obtain acceptance for proposed assemblies not conforming to specific rating agency classifications or rated assemblies.
- D. Materials shall have been tested to provide fire rating at least equal to that of the construction in which they are to be installed.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Packing and shipping:
 1. Deliver products in original unopened packaging with legible manufacturer's identification.
 2. Coordinate delivery with scheduled installation date, allow minimum storage at site.
- B. Storage and protection: Store materials in a clean, dry, ventilated location. Protect from soiling, abuse, moisture and freezing when required. Follow manufacturer's instructions.

1.9 PROJECT CONDITIONS

A. Existing conditions:

1. Verify existing conditions and substrates before starting work. Correct unsatisfactory conditions before proceeding.
2. Proceed with installation only after penetrations of the substrate and supporting brackets have been installed.

B. Environmental requirements:

1. Furnish adequate ventilation if using solvent.
2. Furnish forced-air ventilation during installation if required by manufacturer.
3. Keep flammable materials away from sparks or flame.
4. Provide masking and drop cloths to prevent contamination of adjacent surfaces by firestopping materials.
5. Comply with manufacturing recommendations for temperature and humidity conditions before, during and after installation of firestopping.

1.10 WARRANTY

- A. General project warranty and correction period, as required in general conditions and Division 01, requires repair or replacement of materials or systems which fail in joint adhesion, co-adhesion, abrasion resistance, weather resistance, extrusion resistance, migration resistance, stain resistance, or general durability or appear to deteriorate in any other manner not clearly specified by submitted manufacturer's data as an inherent quality of the material for the exposure indicated.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Acceptable manufacturers and products: Those listed in the UL Fire Resistance Directory for the UL System involved, or rated for the application by Warnock Hersey or by another acceptable rating agency.

2.2 THROUGH-PENETRATION FIRESTOPPING OF FIRE-RATED CONSTRUCTION

- A. Provide systems or devices listed and labeled by a rating agency, and conforming to the construction type, penetrant type, annular space requirements and fire rating involved in each separate instance. The system shall be symmetrical for wall applications. Systems or devices shall be asbestos-free.
1. Additional requirements: Withstand the passage of cold smoke either as an inherent property of the system, or by the use of a separate product included as a part of the rated system or device, and designed to perform this function.

2.3 SMOKE-STOPPING AT SMOKE PARTITIONS

- A. Through-penetration smoke-stopping: Any system complying with the requirements for through-penetration firestopping in fire-rated construction is acceptable, provided that the system includes the specified smoke seal or will provide a smoke seal. The length of time of the fire resistance may be disregarded.

2.4 ACCESSORIES

- A. Fill, void or cavity materials and forming materials: Classified for firestopping use, or included in a rated firestopping assembly, by a rating agency.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verification of conditions: Examine areas and conditions under which work is to be performed and identify conditions detrimental to proper or timely completion.
 - 1. Verify barrier penetrations are properly sized and in suitable condition for application of materials.
 - 2. Do not proceed until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean surfaces to be in contact with penetration seal materials, of dirt, grease, oil, loose materials, rust, or other substances that may affect proper fitting, adhesion, or the required fire resistance.

3.3 INSTALLATION

- A. Provide firestop devices or assemblies for every opening and penetration in floors or fire-rated construction.
- B. Install penetration seal materials in accordance with printed instructions of the rating agency and in accordance with manufacturer's instruction.
- C. Ensure an effective smoke barrier in each sealed penetration. Install smoke stopping as specified for firestopping.
- D. Protect materials from damage on surfaces subject to traffic.
- E. Where large openings are created in walls or floors to permit installation of pipes, conduits, cables, or other items, close unused portions of opening with firestopping material tested for the application.
- F. Where rated walls are constructed with horizontally continuous air space, double-width masonry, or double-stud frame construction, provide vertical, 12-inch-wide fiber dams for full thickness and height of air cavity at maximum 15 foot intervals.

3.4 FIELD QUALITY CONTROL

- A. Examine penetration seals to ensure proper installation before concealing or enclosing them.
- B. Keep areas of work accessible until inspection and acceptance by applicable authorities.
- C. Before substantial completion, patch and repair firestopping cut or penetrated by other construction work.

3.5 ADJUSTING AND CLEANING

- A. Clean up spills of liquid components.

- B. Neatly cut and trim materials as required.
- C. Remove equipment, materials and debris, leaving area in undamaged, clean condition.

END OF SECTION

SECTION 26 0101

ELECTRICAL GENERAL PROVISIONS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. General provisions and requirements for electrical work.

1.2 RELATED SECTIONS

- A. Requirements of this section generally supplement requirements of Division 01.
- B. Commissioning requirements: Division 01.

1.3 REFERENCES

- A. NFPA 10: Portable Fire Extinguishers.
- B. NFPA 241: Safeguarding Construction, Alteration, and Demolition Operations.

1.4 SYSTEM DESCRIPTION

- A. The full set of Contract Documents applies to work of Division 26.
- B. Visit the site and study aspects of the project and working conditions, as required by General and Supplementary Conditions, Bidding and Contracting Requirements, Drawings, and Specifications. Verify field dimensions.
- C. The work covered in technical sections includes the furnishing of labor, equipment and materials, and the performance of operations pertinent to the work described.
- D. Except as required otherwise in Division 01, promptly obtain and pay for, necessary signatures and paperwork, permits, fees and inspections required for work of this division by authorities having jurisdiction, including any utility connection or extension charge. No payment will be made until a copy of the permit is forwarded to the Owner.
- E. Electrical work of this project includes, as a brief general description, the following:
 - 1. Replacement of auditorium house lighting fixtures and controls.
 - 2. Modifications to existing fire detection and alarm system.
- F. See Division 01 for requirements related to Owner's occupancy of the premises, limits on use of site, time restrictions on work, limits on utility outages or shutdowns, and phasing (sequencing) and scheduling.

1.5 PRODUCT OPTIONS

- A. Except as modified by provisions of Bidding and Contracting Requirements and Division 01, these options apply to Division 26 specifications.
- B. General: Where Contractor is permitted to use a product other than the specified item and model named as the basis of design, Contractor is responsible for coordination and additional costs as specified in article "Substitutions" below for substitutions.

- C. Products specified by reference standards or by description only: Any product meeting those standards or description.
- D. Products specified by naming one or more manufacturers, or model name or catalog reference number: Products specified establish a standard of quality, options to be included, and performance.
 - 1. Where other acceptable manufacturers are named, Contractor may provide products of those named manufacturers only, which meet the specifications.
 - 2. Where specification permits "equal" products, without naming other acceptable manufacturers, Contractor may use products of any manufacturer, which meet the specifications.
- E. Products specified by naming one manufacturer and particular product, with no provision for other options: No options or substitutions allowed.

1.6 SUBSTITUTIONS

- A. Substitutions will be considered only as permitted or required by the Bidding and Contracting Requirements and Division 01. Except as modified by those requirements, the requirements below apply to Division 26 specifications.
- B. Substitutions may be considered when a product becomes unavailable through no fault of the Contractor.
- C. Document each request with complete data substantiating compliance of proposed substitution with contract documents.
- D. A request constitutes a representation that the Bidder or Contractor:
 - 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
 - 2. Will provide the same warranty for the substitution as for the specified product.
 - 3. Will coordinate installation and make changes to other work which may be required for the work to be complete with no additional cost to Owner.
 - 4. Waives claims for additional costs or time extension which may subsequently become apparent.
 - 5. Will reimburse Owner for review or redesign services associated with re-approval by authorities.
- E. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.
- F. Substitution submittal procedure is specified in Bidding and Contracting Requirements and Division 01.

1.7 MATERIALS AND EQUIPMENT

- A. Materials and equipment shall be new and the best of their respective kinds, suitable for the conditions and duties imposed on them by the project, and of representative manufacturer. The description, characteristics and requirements of the materials to be used shall be in accordance with the specifications.

- B. Equipment, construction and installation must meet requirements of local, state and federal governing codes.
- C. Singular number: In cases where material, a device, or part of the equipment is referred to in the singular number in the specifications, it is intended that such reference shall apply to as many items of material, devices, or parts of the equipment as are required to complete the installation as shown on the drawings or required for proper operation of the system.
- D. Terms have the following meanings:
 - 1. Furnish: Supply item
 - 2. Install: Mount and connect item
 - 3. Provide: Furnish and install
- E. Materials and equipment shall be installed and completed in a first class and workmanlike manner and in accordance with the best modern methods, practice and manufacturers' instructions. Any work which shall not present an orderly and neat or workmanlike appearance shall be removed and replaced with satisfactory work when so directed in writing by the Architect.
- F. The specifications and drawings are intended to define the minimum requirements, as to quality of materials, construction, finish and overall workmanship.
- G. General Conditions describe the correlation and intent of the Contract Documents. In case of discrepancies between the specifications and drawings, the specifications should be followed as to the general methods and principles and the drawings followed as to sizes, capacities and specifics for corresponding parts. If sizes are omitted, the Architect will determine sizes to be utilized.
- H. In cases of doubt, uncertainty, or conflict as to the true meaning of the specifications or drawings, it is the responsibility of the Contractor to notify the Architect of said uncertainty, doubt, or conflict and obtain a decision as to the intent prior to initiating any work which may be affected by this decision.

1.8 COORDINATION

- A. Should a situation develop during construction to prevent the proper installation of any equipment or item where shown on the drawings, call the situation to the attention of the Architect and await a written decision.
- B. Plan and coordinate work to proceed in an orderly and continuous manner without undue delay, and in conformance with the project schedule. Submit samples, shop drawings, schedules, insurance policies and certificates, and the like in time to avoid delays in actual construction. Coordinate electrical work so that work of each trade is completed before other construction begins which would obstruct it.
- C. Coordinate trades to ensure that proper clearances between work of the various trades allow access to items which require operation and maintenance.
- D. Coordinate location and elevation of conduit, light fixtures, equipment, and appurtenances in such a manner that the finished installation is as indicated on drawings. In the event difficulties are encountered which prevent this, it is the Contractor's responsibility to bring this to the attention of the Architect prior to initiation of work. Correct improperly coordinated installation at no additional cost.

- E. The Contractors' assistants shall include a competent electrical foreman, who shall be on the premises at all times to check, layout, coordinate and superintend the installation of work. The foreman shall establish basic requirements relative to the work before starting, and be responsible for the accuracy thereof.

1.9 SUBMITTALS

A. Manufacturers' and subcontractors' lists:

- 1. As specified in Division 01, submit a complete list of proposed manufacturers for equipment, materials and subcontractors used for the work of this division. Lists shall follow the sequence of the specifications. No considerations will be given for partial or incomplete lists. After review of lists, submit shop drawings and product data.

B. Shop drawings and product data:

- 1. Submit in accordance with the requirements of Division 01 or as established at the preconstruction conference, the required number of copies of Shop Drawings and Product Data for every item of equipment. Shop drawings or product data will not be considered until Manufacturers' Lists have been approved. Shop drawings and product data shall be submitted, as required by the General Conditions, with sufficient time for checking, return to Contractor, and resubmission as required before Contractor shall install any item.
- 2. Each item submitted shall be properly labeled, indicating the specific service for which the equipment or material is to be used, section and paragraph number of specification or drawing number to which it applies, Contractor's name and project name and number. Data submitted shall be specific and shall include product data and printed information in sufficient detail and scope to verify compliance with requirements of the contract documents. Clearly identify each item within the data. Data of a general nature will not be accepted. Each sheet must clearly show the project name and number.
- 3. The review of a shop drawing or product data shall not be considered as a guarantee of the measurements or building conditions or that the shop drawings or product data have been checked to see that item submitted properly fits the building conditions. This review shall not relieve the Contractor of the responsibility for furnishing material or performing work as required by the contract documents, for correctness of dimensions and quantities, or for proper coordination of details and interfaces among trades.
- 4. Exclusively electrical items furnished as items associated with mechanical items but not specifically described in the mechanical item submission, shall be submitted as a separate submittal but shall be clearly marked as associated with the mechanical item by identified specification paragraph.
- 5. Product data sheets shall be 8.5-inches by 11-inches cut sheets for operating and maintenance manual.

C. Submit at least three copies of the results of every test required under any section in this division.

D. Specialist shall submit a list of at least three projects similar to this project in type, size, and quality, which have been in place and operating satisfactorily for at least five years.

- 1. Include project name, address, name and phone number of owner's representative, and project type and size.

E. After the work is completed, submit required certificates of approval from approved inspection agencies and authorities having jurisdiction over work of this division. Certificates of approval must be received by the Architect prior to final acceptance of the work.

1.10 SPECIALIST

- A. The term "Specialist" as used in the specification shall mean an individual or firm of established reputation (or, if newly organized, whose personnel have previously established a reputation in the same field,) which is regularly engaged in, and which maintains a regular force of workers skilled in either (as applicable) manufacturing or fabricating items required by the contract, installing items required by the contract, or otherwise performing work required by the contract. Where the specification requires installation by a specialist, the term shall also be deemed to mean the manufacturer of the item, an individual or firm licensed by the manufacturer, or an individual or firm who will perform the work under the manufacturer's direct supervision.

1.11 CONTRACT CLOSEOUT SUBMITTALS

A. Project record documents:

1. Maintain on site one set of the following record documents; record actual revisions to the work of this division:
 - a. Contract Drawings.
 - b. Specifications.
 - c. Addenda.
 - d. Change Orders and other Modifications to the Contract.
 - e. Reviewed shop drawings, product data, and samples.
2. Maintain record documents separate from documents used for construction.
3. Record information concurrent with construction progress.
4. Specifications: Legibly mark and record in each section a description of actual products installed, including the following:
 - a. Manufacturer's name and product model and number.
 - b. Product options, substitutions, or alternates utilized.
 - c. Changes made by addenda and modifications.
5. Record documents and shop drawings: Legibly mark each item to record actual construction, including:
 - a. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - b. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the work.
 - c. Field changes of dimension and detail.
 - d. Details not on original Contract Drawings.
6. Submit documents as specified in Division 01.

B. Operation and maintenance data:

1. Submit sets prior to final inspection as specified in Division 01. Unless otherwise specified in Division 01, submit no fewer than three sets. In addition to requirements specified in Division 01, submit operating and maintenance manuals for the work of this division as specified below.
2. Prepare covers with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS," and title of project.
3. Internally subdivide the contents with permanent page dividers, logically organized as described below.

4. Contents: Prepare a Table of Contents, with each product or system description identified.
5. Part 1: Directory, listing names, addresses, and telephone numbers of electrical engineers; contractor; electrical subcontractors; and major electrical equipment suppliers.
6. Part 2: Operation and maintenance instructions, arranged by specification section. For each category, identify names, addresses, and telephone numbers of subcontractors and suppliers. Identify the following:
 - a. Significant design criteria.
 - b. List of equipment.
 - c. Parts list for each component, including recommended spare parts list.
 - d. Operating instructions.
 - e. Maintenance instructions for equipment and systems.
 - f. Maintenance instructions for special finishes, including recommended cleaning methods and materials and special precautions identifying detrimental agents.
7. Part 3: Project documents and certificates, including the following:
 - a. Shop drawings and product data.
 - b. Photocopies of certificates.
 - c. Photocopies of warranties, guarantees, and bonds.
 - d. Test reports: Copies of the results of tests required under sections of specifications.
 - e. Photocopies of each panelboard circuit directory or directories for each panelboard provided, including panel name, panel location, panel ratings, spare circuit breakers and spaces for additional circuit breakers.
8. Submit one copy in final form 15 days prior to final inspection. This copy will be returned after final inspection, with Engineer comments. Revise content of documents as required prior to final submittal.
9. Submit revised copy within ten days after final inspection.
10. Submit operation and maintenance data in electronic format using USB flash drive storage media.

1.12 REGULATORY REQUIREMENTS

- A. When these specifications call for materials or construction of a better quality or larger sizes than required by the following codes and standards, the provisions of the specifications shall take precedence.
- B. Provide, without extra charge, any additional materials and labor which may be required for compliance with these codes and standards even though the work is not mentioned in these specifications or shown on the contract drawings.
- C. Perform the work of this division in strict accordance with the following authorities. The latest revision of these codes accepted by the authority having jurisdiction as of the date of the contract documents shall apply.
 1. The electrical, building, fire, and safety codes of the state and county or city in which the work is being performed.
 2. The National Electric Code, NFPA 70 (NEC).
 3. The National Fire Protection Association Code (NFPA).
 4. International Building Code (IBC).
 5. International Energy Conservation, Fire, and Electrical Codes (ICC).

1.13 REFERENCE STANDARDS

- A. Perform the work of this division using the standards of the following organizations, as referred to in technical sections, as a minimum requirement for construction and testing. Unless specified otherwise in Bidding and Contract Documents or Division 01, the latest revision current as of the date of the contract documents shall apply.
1. American National Standards Institute (ANSI)
 2. American Society for Testing and Materials (ASTM)
 3. International Code Council (ICC)
 4. Institute of Electrical and Electronics Engineers (IEEE)
 5. National Electrical Code (NEC) (NFPA 70)
 6. National Electrical Manufacturer's Association (NEMA)
 7. National Fire Protection Association (NFPA)
 8. The Occupational Safety and Health Act (OSHA)
 9. Underwriters Laboratory Inc. (UL)
 10. American Association of State Highway and Transportation Officials (AASHTO)
 11. American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE)
 12. Maryland Occupational Safety and Health Act (MOSHA)
 13. Illuminating Engineering Society of North America (IESNA)

1.14 TEMPORARY STORAGE

- A. Maintain upon premises, where directed, a storage area, and be responsible for contents within these areas. Provide security measures necessary for this area.
- B. Area shall be maintained and shall be returned to original condition at the completion of the project.
- C. Store electrical construction materials such as wire, raceways and boxes, devices, and equipment in buildings, enclosed trailers, or portable enclosed warehouses.
1. Materials and products subject to damage from moisture: Store in dry locations. If necessary, protect with protective wraps or covers.
 2. Plastics and other materials and products subject to damage from heat or cold: Store at manufacturer's recommended temperatures.
 3. Plastics and other materials and products subject to damage from sunlight: Protect from sunlight.
- D. Electrical equipment such as motor controllers, panelboards and circuit breakers stored before installation and installed during construction: Provide clean, dry locations at manufacturer's recommended temperatures, and cover or wrap if required to protect from incidental damage.

1.15 PROTECTION

- A. Control dust resulting from construction work to prevent its spread beyond the immediate work area, and to avoid creation of a nuisance.
1. Do not use water to control dust. Use drop cloths or other suitable barriers.
 2. In areas where dirt or dust is produced as a result of the work, sweep daily, or more often as required.
 3. Provide walk-off mats at entries and replace them at regular intervals.
 4. Construct dust partitions, where indicated on the drawings or as required.
 5. Protect areas occupied by Owner's personnel or equipment.
 6. Seal off return air registers and other mechanical systems to prevent dust from entering.

- B. Each trade and subcontractor is responsible for preventing damage and soiling of work performed by other trades or subcontractors. Each trade and subcontractor is responsible for providing temporary protection of its own work.
 - 1. Protect work from spills, splatters, drippings, adhesives, bitumens, mortars, paints, plasters, and damage from welding or burning.
 - 2. Protect finished work from damage, defacement, staining, or scratching.
 - 3. Protect finishes from cleaning agents, or grinding and finishing equipment.
 - 4. Protect adjacent and finished work from damage, using tape, masking, covers or coatings and protective enclosures.
 - 5. Coordinate installations and temporarily remove items to avoid damage from finishing work.
- C. Repair damage or soiling to the complete satisfaction of the Architect; replace any materials or work damaged to such an extent that they cannot be restored to their original condition, at no addition to the Contract sum.
- D. Protect work stored in place and supplies stored in the building.
 - 1. Store materials and products, subject to damage from moisture, in dry locations. If necessary, protect in wraps or covers.
 - 2. Store plastics, other materials, and products subject to damage from heat or cold at manufacturer's recommended temperatures.
- E. Protect electrical materials and products from weather events and accidents of construction.
- F. Use of sidewalk or roadway areas outside of the property lines shall be with permission and approval of the local authorities having jurisdiction.

1.16 FIRE PROTECTION

- A. As a minimum, provide hand-carried, portable, UL-rated extinguishers with each work crew working inside the building.
- B. Select extinguishers in accordance with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.

1.17 PROJECT CONDITIONS

- A. Drawings showing utilities in concealed locations are based on the best information available but are not represented as being precisely correct. Work of the contract includes digging, cutting, drilling, using nondestructive methods, and other methods of locating concealed utilities in the field, as well as patching and repairing as specified in "Cutting and Patching" below.
- B. If, in the course of the work, workers encounter a material they suspect to present some hazard:
 - 1. Promptly notify the Owner and Engineer in writing.
 - 2. Do not perform any work which would disturb the suspected material until written instructions have been received.

1.18 WARRANTY

- A. Work and equipment provided as work of this division shall be fully warranted under the general project warranty. In addition, provide added special warranties as specified in individual sections.

- B. During the correction period, the Contractor shall begin correcting any work found to be not in accordance with the requirements of the Contract Documents within 4-hours of receiving written notice from the Owner. Provide detailed schedule for completion of work within 24-hours of receiving written notice from the Owner and revise schedule based on any Owner comments generated. Except as otherwise required in General Conditions and Division 01, the correction period is one year after the date of substantial completion of the work. Work requiring correction shall promptly be repaired or completely replaced at no addition to the Contract Sum.
 - 1. Service reports for warranty work shall be provided to the Owner.
- C. When use of the permanent equipment has been permitted for temporary services during construction of the building, the warranty and correction periods shall nevertheless begin at the time of substantial completion, unless another date of acceptance has been agreed to by the Owner.
- D. Special warranties are warranties required by individual specification sections, incidental product warranties, manufacturers' standard warranties, installer or subcontractor service agreements, and other individual warranties in addition to the general project warranty.
- E. Provide copies of warranties as required for Operation and Maintenance Manual specified above, and by Division 01.
- F. For items of work delayed beyond date of substantial completion, provide updated submittal within ten days after acceptance, listing date of acceptance as start of warranty period.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

3.1 CUTTING AND PATCHING

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
- B. Cut walls, floors, partitions, roofs, and other appurtenances for the passage or accommodation of conduits. Close superfluous openings and remove debris caused by work of this division.
- C. No cutting of any structure or finish shall be done until the condition requiring such cutting has been examined and approved by the Architect.
- D. New or existing surfaces disturbed as a result of such cutting or otherwise damaged shall be restored to match original work and materials used for any patching or mending shall conform to the class of materials originally installed.
- E. Refinish surfaces to match adjacent finish. For continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.

3.2 TEMPORARY FACILITIES

- A. Temporary water facilities, electricity, telephone, toilet facilities, and temporary heat, shall be provided as specified in Division 01.

3.3 PROGRESS MEETINGS

- A. Progress meetings shall be held as specified in Division 01, and also when and if the Contractor or Engineer finds them necessary or advantageous to progress of work.
- B. Contractor, those subcontractors and those material suppliers concerned with current progress or with the scheduling of future progress, Architect and Owner shall each be represented at these meetings by persons familiar with the details of work and authorized to conclude matters relating to work progress.

END OF SECTION

SECTION 26 0500

COMMON WORK RESULTS FOR ELECTRICAL

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Requirements applicable to work of more than one section of Division 26.
- B. Basic material and equipment required for electrical work.
- C. Date sensitive equipment.
- D. Operating instructions.
- E. Testing wiring systems.

1.2 RELATED SECTIONS

- A. Division 01 includes sections specifying requirements for construction waste management.
- B. Operation and Maintenance Manuals: Division 01 and Section 26 0101.
- C. Painting: Division 09.

1.3 DEFINITIONS

- A. Project correction period: A period after Substantial Completion of the work during which the Contractor shall correct every part of the work found to be not in accordance with the requirements of the contract documents, promptly after receipt of written notice.
- B. Qualified testing agency: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 548; and with additional qualifications specified in individual sections; and where required by authorities having jurisdiction, that is acceptable to authorities.
 - 1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
 - 2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.

1.4 DESIGN REQUIREMENTS

- A. The drawings and system performances have been designed on the basis of using the particular manufacturers' products specified and scheduled on the drawings.
- B. Products of other manufacturers that are listed under the article "Acceptable Manufacturers," or permitted as "equal," are permitted provided:
 - 1. Product shall meet the specifications.
 - 2. Contractor shall make, without addition to the contract sum, all adjustments for deviations so that the final installation is complete and functions as the design basis product is intended.
- C. Do not propose products with dimensions or other characteristics different from the design basis product that make their use impractical or cause functional fit, access, or connection problems.

1.5 SUBMITTALS

- A. Test reports: Show that tests specified in Part 3 below demonstrate the specified results.

1.6 QUALITY ASSURANCE

- A. Provide materials and perform work in accordance with the electrical, building, fire, and safety codes and regulations of the state, county, or city in which the work is performed.
- B. Electrical control panels, equipment, materials and devices provided or installed as work of Division 26 shall bear UL label, or, if UL label is not available, the item shall be tested and labeled by a qualified testing agency, acceptable to authorities having jurisdiction, and in accordance with NFPA 70. Provide testing, if required, without addition to the contract sum.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Techniques, testing, and operating instructions specified in this section apply to products specified in other sections of Division 26.
- B. Equipment that uses or processes date and time data in order to perform its function shall be warranted by the manufacturer to properly function and correctly use or process all time-related data for all dates and times which occur during a reasonable life expectancy of the equipment.

2.2 MATERIALS

- A. Aircraft cable: 0.25-inch (6-mm) steel wire rope, galvanized, construction 7 by 19 strands, minimum 7000 lbs (31138 N) breaking strength.

2.3 DATE-SENSITIVE EQUIPMENT

- A. Date-sensitive equipment: Systems, equipment, or components which use or process date and time data in order to perform their functions.
- B. Each item of date-sensitive equipment used in the project shall be warranted by the manufacturer to properly function and correctly use or process all time-related data for all dates and times which occur during a reasonable life expectancy of the equipment.

PART 3 - EXECUTION

3.1 GENERAL

- A. Manufacturers' instructions: Except as modified by drawings or specifications, install products and equipment in accordance with manufacturers' instructions and recommendations applicable to the project conditions.
 - 1. Immediately notify Engineer if a difference or discrepancy is found between manufacturers' instructions and the drawings or specifications.
- B. The contract drawings are diagrammatic, and do not indicate all fittings or offsets in conduit or all pull boxes, access panels, or other specialties required. Provide required fittings, offsets, access panels, and specialties to coordinate the work.

- C. No conduit shall be run below the head of a window or door.
- D. Equipment and conduits installed in areas without a suspended ceiling shall be as tight to structure as possible, but at least above a height of 6'-8", unless otherwise noted.
- E. Items which require access for operation or maintenance shall be easily accessible. Do not cut or form hand holes for operation or maintenance of appliances through walls or ceilings.

3.2 INSTALLATION OF PRODUCTS AND EQUIPMENT

- A. Install conduit exposed to view parallel with the lines of the building and as close to walls, columns, and ceilings as may be practical, maintaining adequate clearance for access at parts requiring servicing.
- B. Install conduit a sufficient distance from other work to permit a clearance of not less than 0.5 inch (13 mm) between its finished covering and adjacent work.
- C. Pull boxes and other appurtenances which require operation or maintenance shall be easily accessible. Do not cut or form handholes for operation or maintenance of appliances through walls or ceilings.

3.3 OPERATING INSTRUCTIONS (DEMONSTRATION)

- A. Furnish the necessary technicians, skilled workers, and helpers to operate the electrical systems and equipment of the entire project for one 8-hour day.
- B. Where specified in technical sections, provide longer periods required for specialized equipment.
- C. Instruct the Owner or designated personnel in operation, maintenance, and adjustment of systems and equipment.
 - 1. Instructions by manufacturer's technical representative for each type of equipment shall include the performance of the recommended preventive maintenance procedures for that equipment.
- D. The Operating and Maintenance Manual shall be available at the time of the instructions for use by instructors and Owner personnel.
- E. Schedule the general and specialized instruction periods for a time agreed upon by the Owner and Engineer.

3.4 TESTS

- A. During the progress of the work and after completion, test the branch circuits and distribution system, and the low-voltage signal systems.
- B. Results of the tests shall show that the wiring meets the requirements of this specification. Should any test indicate defect in materials or workmanship, immediately repair, or replace with new, the faulty installation, and retest the affected portions of the work.
- C. Furnish equipment and instruments necessary for testing.

D. Tests shall demonstrate the following:

1. Lighting, power, and control circuits are continuous and free from short circuits.
2. Circuits are free from unspecified grounds.
3. The resistance to ground of each non-grounded circuit is not less than one megohm.
4. Circuits are properly connected in accordance with the applicable wiring diagrams.
5. Circuits are operable. Demonstration shall include functioning of each control not less than ten times, and continuous operation of each lighting and power circuit for not less than 0.5 hour.

E. Make voltage built-up tests with a voltage sufficient to determine that no short circuits exist.

F. Immediately repair defects and retest until systems are operating correctly.

G. Submit test reports.

END OF SECTION

SECTION 26 0503

ACCESS DOORS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Access doors for concealed electrical specialties requiring maintenance or manual operation.

1.2 RELATED SECTIONS

- A. Electrical devices: Division 26.
- B. Identification for electrical systems: Section 26 0553.

1.3 SUBMITTALS

- A. Product data: Each type of access door.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Wall and ceiling access doors:

- 1. Acudor Products Inc.
- 2. Cesco Products Company
- 3. Karp Associates, Inc.
- 4. Milcor, Inc.
- 5. Zurn Industries

2.2 WALL AND CEILING ACCESS DOORS

- A. Access doors shall be white powder coated steel doors and frames, unless indicated.
- B. Door types:
 - 1. Type for use in fire-rated walls. UL 1-1/2 hour Class B fire rating and Warnock Hersey label for 3-hour non-combustible floor/ceiling system. Paddle latch with cylinder lock and continuous steel hinge.
 - a. Basis of design: Milcor Style UFR.
 - 2. Type used in acoustical plastered surfaces. Expanded metal casing bead as part of the frame with continuous piano hinge and screwdriver operated cam latch.
 - a. Basis of design: Milcor Style AP.
 - 3. Type used in hard plastered surfaces. Expanded metal casing bead as part of the frame with concealed spring hinge and screwdriver operated cam latch.
 - a. Basis of design: Milcor Style K.

4. Type used in masonry or ceramic tile surfaces. Stainless steel construction with concealed spring hinge and screwdriver operated cam latch.
 - a. Basis of design: Milcor Style MS.
5. Type used in drywall construction. Galvanized steel drywall bead as part of the frame with concealed spring hinge and screwdriver operated cam latch.
 - a. Basis of design: Milcor Style DW.
- C. Sizes: As required for access to the particular device, but no less than 16 by 16 inches (405 by 405 mm).
- D. Recessed door panels for concealed type doors:
 1. Type used in acoustical plastered surfaces applied into recessed door panel for flush finish. Expanded metal casing bead as part of the frame with concealed spring hinge and screwdriver operated cam latch.
 - a. Basis of design: Milcor Style AP.
 2. Type used for acoustical tile ceilings with matching acoustical tile applied into recessed door panel for flush finish. Continuous piano hinge and screwdriver operated cam latch.
 - a. Basis of design: Milcor Style AT.
 3. Type used for acoustical tile ceilings with 2 layers of matching material applied into recessed door panel for flush finish. Continuous piano hinge and screwdriver operated cam latch.
 - a. Basis of design: Milcor Style ATR.
 4. Type used in drywall applications with drywall panel applied into recessed door panel for flush finish. Screwdriver operated cam latches (number of latches varies with door size) with top and bottom hinge pins.
 - a. Basis of design: Milcor Style DWR.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Provide access doors in walls and inaccessible ceilings for concealed specialties and appliances that require manual operation or maintenance.
- B. Select appropriate size door for each particular application.

END OF SECTION

SECTION 26 0504

ELECTRICAL DEMOLITION

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Extent and location of demolition are shown on the drawings.
- B. Removal of items for salvage.
- C. Removal of fluorescent lamps without breaking them, and disposal to a recycler.

1.2 SUBMITTALS

- A. Qualifications of fluorescent lamp recycler as required in the article "Quality Assurance" below.
- B. Project record documents:
 - 1. Record drawings.
 - 2. For fluorescent lamp disposal, records demonstrating that all the fluorescent lamps removed from the site have been received and accepted at the recycling facility. Receipt or bill of sale shall include the typewritten name and signature of the person responsible for receiving and logging in, and shall be dated.

1.3 QUALITY ASSURANCE

- A. Demolition shall be carried out as expeditiously as possible, in accordance with accepted practice and applicable building code provisions.
- B. Fluorescent lamp recycler shall be in compliance with federal and state regulations applicable at its location, including licenses if required, to commercially recycle lamps and mercury-containing materials.

1.4 HANDLING AND STORAGE

- A. Fluorescent lamps:
 - 1. Handle lamps so as not to break them. Store and ship in containers which prevent breakage during storage and shipping.
 - 2. Store lamps in secure location approved by the Engineer, until they are shipped to the recycler.
 - 3. The lamps are not defined as hazardous. If a few lamps should be broken accidentally, treat the debris as general construction debris.

1.5 PROJECT CONDITIONS

- A. If, in the course of the work, workers unexpectedly encounter a material not identified for special removal but which they suspect to be asbestos, to contain lead or PCBs, or to present some other hazard:
 - 1. Promptly notify the Owner and Engineer in writing.
 - 2. Do not perform any work which would disturb the suspected material until written instructions have been received.

- B. Protect adjacent materials indicated to remain. Install and maintain dust and noise barriers to keep dirt, dust, and noise from being transmitted to adjacent areas. Remove protection and barriers after demolition operations are complete.
- C. Locate, identify, and protect mechanical and electrical services passing through demolition area and serving other areas outside the demolition limits. Maintain services to areas outside demolition limits. When services must be interrupted, install temporary services for affected areas.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Coordinate removal and storage of fluorescent lamps. Protect lamps to prevent breaking them during removal.
- B. Protect existing building and equipment that is to remain, particularly to prevent entry of either dust or water. Ensure weathertightness at all times. Keep materials on hand to patch and maintain protection.

3.2 DEMOLITION

- A. Perform removal work neatly with the least possible disturbance to the building.
- B. Provide temporary barriers, danger signals, and appurtenances for protection of personnel and equipment during removal operations.
- C. Demolish, remove, demount, and disconnect inactive and obsolete conduit, fittings and specialties, equipment, and fixtures.
 - 1. Conduit and ducts embedded in floors, walls, and ceilings may be abandoned in place if they do not interfere with new installations. Cut back to at least one inch below finished surface.
 - 2. Remove materials above accessible ceilings.
 - 3. Disconnect and cap items to remain behind finished surfaces.
 - 4. Patch and repair surface materials as required in Division 01 and Section 26 0101 article, "Cutting and Patching."
- D. Remove the anchors, bolts, and fasteners associated with conduit and equipment to be removed.

3.3 ITEMS FOR SALVAGE

- A. The following items shall be salvaged for the Owner:
 - 1. House Lighting Dimming racks
- B. Remove items to be salvaged in a manner to prevent damage. Pack or crate if required to protect the items from damage in storage.
- C. Items to be salvaged: Identify contents of crates. Repair items damaged during removal or replace with new to match existing. Deliver to location where directed.

3.4 REMOVAL OF FLUORESCENT LAMPS

- A. Remove lamps without breaking them and pack in protective containers for shipment to recycler.
- B. Prepare a record of lamps removed and prepared for shipment. This record shall be used to account for disposal of lamps to qualified recycler.

3.5 DISPOSAL

- A. Dispose of equipment and materials removed, and rubbish and waste material, as work progresses. Do not allow demolition debris to accumulate on site. Remove products of demolition from the building daily.
- B. Transport fluorescent lamps without breaking them and deliver to the recycler. Submit records of disposal as required in Part 1 above.

END OF SECTION

SECTION 26 0519
WIRES AND CABLES

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Wire and cable rated 600-volts and less.
- B. Type MC and Type MC luminary cables as permitted in Part 3.
- C. Type AC-HCF and Type NM cables are not permitted.

1.2 RELATED SECTIONS

- A. Conduits: Section 26 0533.
- B. Lighting Control Systems: Section 26 0923.
- C. Lighting: Section 26 5100.

1.3 REFERENCES

- A. ANSI/NEMA WC 70 – Power Cables rated 2000 Volts or Less for Distribution of Electrical Energy.
- B. ASTM B3 – Standard Specification for Soft or Annealed Copper Wire.
- C. ASTM B8 – Standard Specification for Concentric-Lay-Stranded Copper Conductors.
- D. UL 44 – Standard for Thermoset-Insulated Wires and Cables.
- E. UL 83 – Standard for Thermoplastic-Insulated Wires and Cables.
- F. Additional UL Standards as indicated.

1.4 SUBMITTALS

- A. Product data:
 - 1. Each type of wire and cable, including accessories.
 - 2. Include copies of UL certifications showing compliance with requirements in "Quality Assurance" below.

1.5 QUALITY ASSURANCE

- A. Electrical components, devices, and accessories: Listed and labeled as defined in NFPA 70 Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Products and installation shall comply with NFPA 70 and other applicable national, state, and local electrical codes.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. General requirements: Deliver, store, and handle wire and cable in accordance with the manufacturer's instructions.
 - 1. Wire and cable shall be packaged in a manner that protects them during ordinary handling and shipping. Ship from manufacturer with ends temporarily sealed against moisture.
 - 2. Protect wire and cable during storage (both onsite and offsite).
 - a. Store in a clean and dry location. Elevate from surfaces where water can accumulate, and cover cable rolls to protect against weather.
 - 3. Handle wire and cable as recommended by the manufacturer. Do not pull from the center or periphery of the cable reel.
 - 4. Damaged wire and cable shall be removed from the project site.

PART 2 - PRODUCTS

2.1 COPPER BUILDING WIRE (600-Volts Max.)

- A. Conductors: UL listed and NEMA WC 70 compliant; Copper, 98 percent conductivity, suitable for 600-volt duty; rated 90-degree Celsius temperature for wet/dry applications; solid bare annealed copper for No. 10 and smaller complying with ASTM B 3, and stranded for No. 8 and larger complying with ASTM B 8.
- B. Conductor insulation:
 - 1. Type THHN/THWN-2: Comply with UL 83; PVC insulation, nylon jacket.
- C. Conductor identification: Markings along outer braid denoting conductor size, voltage classification, type of insulation, and manufacturer's trade name, and color code. Identification shall extend to branch circuits and outlets. Use the color coding system tabulated below throughout the building's network of feeders and circuits, unless otherwise required by the authority having jurisdiction.
 - 1. Colors on conductors No. 10 and smaller, or No. 6 and smaller for grounded and grounding conductors: Solid colored insulation.
 - 2. Colors on conductors No. 8 and larger, or No. 4 and larger grounded and grounding conductors: Colored tape wrapped a minimum of 6 inches (150 mm) on either end of conductor.

COLOR CODE (600 V Max.)				
VOLTAGE	NEUTRAL	PHASE		
		A	B	C
120-V, 2-wire	White	Black, Red, or Blue depending on phase		
277-V, 2-wire	Gray	Brown, Orange, or Yellow depending on phase		
208/120-V wye, 3-phase, 4-wire	White	Black	Red	Blue

- D. Wires used solely for grounding purposes shall be green, where insulated.
- E. Control wiring shall be coded with colors different from those used to designate phase wires.

2.2 WIRING ACCESSORIES

- A. Factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and service where installed.
- B. Twist-on wire connectors (dry locations):
 - 1. Color-keyed.
 - 2. Basis of design: Ideal Industries, Inc., Wingnut®, 3M Company "Scotchlok", or King Innovation.
- C. Twist-on wire connectors (damp and wet locations):
 - 1. Connectors shall be listed under UL 486D.
 - 2. Basis of design: Ideal Industries, Inc., UnderGround®, models 60, 64, or 66 as appropriate; King Innovation DryConn®; or 3M Company.
- D. Compression connectors:
 - 1. Color-keyed.
 - 2. Basis of design: 3M Company "Scotchlok"™ compressor connectors, "10000" series for copper conductors or Thomas & Betts (Blackburn) or IlSCO.
- E. Compression connectors (damp and wet locations):
 - 1. Protect the connectors with a waterproof system, UL-listed for direct burial and 600 volts.
 - 2. Basis of design: 3M Company 8420 series, Thomas & Betts Model DBSK82, or IlSCO.
- F. Compression taps:
 - 1. Series CT-2 tap with CT-2C cover, or Series 54710 color-keyed compression taps,
 - 2. Basis of design: Burndy Corporation "Versitap" or OZ/Gedney.
- G. Power distribution blocks:
 - 1. Basis of design: Hubbell Burndy "U-Blok."

2.3 PLENUM CABLES

- A. Plenum cable:
 - 1. Insulated with material that is UL classified for low flame and smoke-spread characteristics, for use in plenum areas without conduit in accordance with the requirements of NFPA 70.
 - 2. Communications cable: Type MPP or CMP in accordance with NFPA 70.
 - 3. Insulator basis of design: Dupont "Teflon FEP".

2.4 METAL-CLAD CABLE, TYPE MC

- A. Cable: UL 83 and UL 1569 listed; 600-volt, single- or multi-circuit Type MC Cable, multi-conductor with ground conductor; steel interlocked armor.
- B. Conductors: Solid copper No. 10 and smaller, and stranded copper No. 8 and larger; conforming to ASTM B 3 or B 8.
- C. Conductor Insulation: Type THHN/THWN insulated single conductors including ground conductor.

D. Fittings:

1. UL 514B listed, steel or malleable iron fittings. Zinc die-cast fittings shall not be acceptable.
2. Basis of design: KonKore/Atkore International.

2.5 METAL-CLAD CABLE, TYPE MC LUMINARY CABLE

- A. Cable: UL 66, UL 83, UL 1569, and UL 2556 listed; 600-volt, single- or multi-circuit Type MC luminary cable; multi-conductor with power conductors, control conductors, and ground conductor; steel interlocked armor.

1. Power conductors: Solid copper, Type THHN insulation, No. 10 and No. 12 AWG.
2. Control conductors: Solid copper, Type TFN insulation, twisted pair No. 16 AWG.

B. Fittings:

1. UL 514B listed, steel or malleable iron fittings. Zinc die-cast fittings shall not be acceptable.
2. Basis of design: KonKore/Atkore International.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Provide wire and cable indicated in accordance with national, state, and local electrical codes.
- B. Conceal wire and cable in new construction and in locations with finished walls, ceilings, and floors unless otherwise noted on drawings.
- C. Wire and cable serving systems over 100-volts shall be installed in raceways, except where otherwise noted on drawings.
- D. Wire and cable serving systems rated below 100-volts shall be installed in raceways, except where otherwise noted in individual specification sections. Refer to paragraph "INSTALLING CABLE RATED BELOW 100-VOLTS" below for additional information.

3.2 INSTALLING INTERIOR WIRING

- A. Sizes: Minimum sizes shall be as follows, unless a larger size is indicated on the drawings.

1. 120-volt branch circuits:

- a. Homerun from first outlet to panel: No. 12 when run is 50 feet (15,000 mm) or less; No. 10 when run is between 50 feet (15,000 mm) and 100 feet (30,000 mm); No. 8 when run is more than 100 feet (30,000 mm).
- b. First outlet to other outlets: No. 12.

2. Exit light and emergency lighting circuits: No. 10. Do not install in raceways, outlet boxes, or other locations with non-emergency wiring systems.
3. Other systems (over 100-volts): Minimum No. 12 unless specified or shown on drawings to be smaller.

- B. Wiring methods and locations: Wires and cables shall be installed based on the following requirements, unless otherwise noted.
 - 1. Feeders, exposed: Type THHN/THWN-2, single conductors in raceway.
 - 2. Branch circuits, concealed in ceilings, walls, and partitions:
 - a. Unless otherwise indicated, utilize Type THHN/THWN-2, single conductors in raceway.
 - b. Metal-clad cable, Type MC cable and MC luminary cable - Refer to section "INSTALLING MC CABLE" below for acceptable locations.
 - 3. Branch circuits, exposed: Type THHN/THWN-2, single conductors in raceway.
 - 4. All other applications: Provide Type THHN/THWN-2, single conductors in raceway.
- C. Splicing shall be done in outlet boxes and junction boxes and not in conduit.
 - 1. Conductors No. 8 and larger: Terminated, spliced and taped, wherever practical, with compression connectors or solderless connectors. Use tools recommended by the manufacturer.
 - 2. Splices in conductors No. 10 and smaller, including lighting fixtures: Made with wire connectors.
 - 3. Taps in conductors No. 6 and larger: Made with compression taps or power distribution blocks.
- D. Wiring in high ambient temperature areas shall be of types required by NFPA 70 including over boilers and breechings, and in fixture channels.
- E. Wires shall be neatly shaped in panels, wireways, boxes, and appurtenances.

3.3 COORDINATION WITH DEVICES AND EQUIPMENT

- A. Where conductor size or parallel conductors shown on drawings connect to terminals on devices or equipment which is not sized for the connection:
 - 1. Provide a junction box as near the equipment as possible, but no more than 10 feet (3 m) away. Obtain approval of location before installing.
 - 2. Provide conductor(s) sized to the ampacity of the equipment, from equipment to junction box.
 - 3. In the junction box, splice the conductors from the equipment to the conductors of sizes, or parallel conductors, shown on the drawings.

3.4 INSTALLING CABLE RATED BELOW 100-VOLTS

- A. Install in raceway, unless otherwise indicated in individual specification sections.
- B. Where individual specification sections allow cable to be installed either in raceway or on J-hooks, install as follows:
 - 1. Wiring method:
 - a. Wiring in walls, above inaccessible ceilings, where exposed in finished spaces, exposed on walls, and wherever it may not be accessible or may be subject to physical damage: Install cables in raceway.
 - b. Wiring exposed in ceilings of unfinished spaces: Install cables in raceway.
 - c. Wiring concealed above accessible suspended ceilings: Install cables on J-hooks.

2. Conceal raceway and cables, except in unfinished spaces, in open ceiling spaces, and raceways on existing walls.
 3. Cable not in raceways:
 - a. Do not install in hangers used for pipes, electric conduits, or ceiling hangers, nor support it in any way by attachments to pipes, conduits, or ceiling hangers.
 - b. Install without damaging conductors, shield, or jacket. Cables shall not run through structural members or be in contact with pipes, ducts, or other potentially damaging items.
 - c. Install away from potential EMI sources, including electrical power lines and equipment.
 - d. Install parallel and perpendicular to surfaces or exposed structural members and follow surface contours where possible.
 4. Cable support with J-hooks:
 - a. Install J-hooks at intervals not exceeding 60 inches.
 - b. Secure cables on J-hooks with Velcro cable straps. No plastic cable ties. Avoid cinching cables.
 5. Each cable run shall contain an 'S' loop or other means to accommodate expansion or contraction.
 6. Where ceiling plenums are used for passage of air by heating and air conditioning system, install cable in conduit or use UL listed plenum cable.
- C. For cable installed in conduit, comply with requirements for raceways and boxes specified in Section 26 0533, Conduits, and Section 26 0534, Boxes.
1. Provide separate conduit systems for each low-voltage system.
 2. Pull cables without exceeding cable manufacturer's recommended pulling tensions.
 - a. Pull cables simultaneously if more than one is being installed in same raceway.
 - b. Use pulling compound or lubricant, if necessary. Use compounds that will not damage conductor or insulation.
 - c. Use pulling means, including fish tape, cable, rope, and basket-weave wire or cable grips, that will not damage cables or raceway.
- D. Avoid installing near hot utilities, which might adversely affect system performance or result in damage to the cable. If cable must be placed close to such utilities, keep it separate and protect with insulation.
- E. Cable bends shall have a radius not less than the value recommended by the cable manufacturer.
- F. Tag cables connected to electronic equipment, to show function and the location of other end. Securely fasten labels to the cable.
- ### 3.5 INSTALLING MC CABLE
- A. Install in compliance with NFPA 70.
 - B. Sizes: Cables larger than No. 10 shall not be permitted.

- C. Locations: Type MC cable may be used for branch circuits concealed in accessible ceiling spaces, in drywall partitions, or within casework.
 - 1. Light fixture whips from junction box in ceiling to recess mounted lighting fixtures. Whips shall not exceed 6 feet in length.
 - 2. MC cabling shall not be used between ceiling junction boxes and homeruns back to panelboard. Homeruns shall be wire in raceway.
 - 3. Do not install in masonry partitions or walls.
- D. Connect cable with wiring accessories specified above.
- E. Install in lengths no longer than 12 feet, terminating at junction box or outlet box at each end.

3.6 INSTALLING MC LUMINARY CABLE

- A. Install in compliance with NFPA 70.
- B. Locations: Type MC luminary cable may be used only above ceilings for LED lighting fixtures with dimmable drivers controlled by a Class 2, low-voltage 0-10VDC controller; connections between the controller and lighting fixtures within a space.
- C. Connect cable with wiring accessories specified above.
- D. Cable larger than No. 10 shall not be permitted.
- E. Maximum length: 12 feet.

END OF SECTION

SECTION 26 0526
GROUNDING AND BONDING

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Grounding and bonding electrical systems and equipment.
- B. Ground system test.

1.2 REFERENCES

- A. IEEE STD 142
- B. NFPA 70
- C. ASTM F467 and F468
- D. UL 467

1.3 SUBMITTALS

- A. Certifications: System test.

PART 2 - PRODUCTS

2.1 MANUFACTURED UNITS

- A. Ground conductor, unless specifically noted otherwise, shall be copper, 98 percent conductivity, solid for No. 10 AWG and smaller and stranded for No. 8 AWG and larger.
- B. Mechanical type ground connectors:
 - 1. Connectors:
 - a. IEEE 837 and UL 467 compliant, listed for use for specific types, sizes, and combinations of conductors and connected items.
 - b. Basis of design: FCI Burndy G Series.
 - 2. Nuts, bolts, and washers: Silicon bronze alloy type B per ASTM F467 and F468.
- C. Lugs:
 - 1. Lugs shall be two- or four-hole.
 - 2. Basis of design: Burndy Hylug series.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Provide the complete grounding of conduit systems, electrical equipment, conductor and equipment enclosures, motors, transformers, and neutral conductors in accordance with applicable codes. Grounded phase and neutral conductors shall be continuously identified. Continuity of metal raceways shall be insured by double locknuts.
- B. Bonding straps and jumpers: Install in locations accessible for inspection and maintenance except where routed through short lengths of conduit.
 - 1. Bonding to structure: Bond straps directly to basic structure, taking care not to penetrate any adjacent parts.
 - 2. Bonding to equipment mounted on vibration isolation hangers and supports: Install bonding so vibration is not transmitted to rigidly mounted equipment.

3.2 EQUIPMENT GROUNDING AND BONDING

- A. Provide insulated equipment grounding conductors with feeders and branch circuits.

3.3 GROUNDING SYSTEM TEST

- A. Ensure that grounding system is continuous and that resistance to earth is not more than 10 ohms.
- B. Submit written results of each test including location of rods as well as resistance and soil conditions at time measurements were made.

END OF SECTION

SECTION 26 0533

CONDUITS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Conduit and accessories.

1.2 RELATED SECTIONS

- A. Boxes: Section 26 0534.

1.3 DEFINITIONS

- A. FMC: Flexible metal conduit.

1.4 SUBMITTALS

- A. Product data:
 - 1. Each type of conduit and raceway included in the work, and related fittings.
 - 2. Accessory materials.
 - 3. Hangers and fasteners.

PART 2 - PRODUCTS

2.1 CONDUIT AND FITTINGS

- A. Electrical metallic tubing (EMT): Hot-dip galvanized or sherardized thin-wall steel conduit conforming to UL 797 and ANSI C80.3.
- B. Connectors and couplings for EMT: Concrete- or rain-tight, compression or set screw type, made of zinc- or chromium-plated steel. Connectors shall have nylon insulating throats.
 - 1. Compression connector:
 - a. Basis of design: Thomas & Betts No. 5223.
 - 2. Compression coupling:
 - a. Basis of design: Thomas & Betts No. 5220.
 - 3. Set screw connector:
 - a. Basis of design: Steel City No. TC722A.
 - 4. Set screw coupling:
 - a. Basis of design: Steel City No. TK122A.
- C. Flexible metal conduit (Type FMC): Made of sheet metal strip, interlocked construction, conforming to UL 1.

D. Connectors for flexible metal conduit:

1. Angle wedge with nylon insulated throat.
2. Basis of design: Thomas & Betts "Tite-Bite" connector Series 3110 and 3130.

E. Wireways: Steel wireway with hinged cover, UL listed as wireways and auxiliary gutters.

1. Cover: Opening complete width and length of wireway.
2. Finish: Baked enamel.
3. Basis of design: Square D "Square-Duct."

F. Fittings for wireways: Made with removable covers to permit installation of a complete system with access to wires throughout the system, UL listed with wireways. Connections: Threaded screws at every connector.

G. Weatherproof expansion fittings:

1. With bonding jumpers.
2. Basis of design: O-Z/Gedney Types AX and TX.

2.2 SLEEVES FOR RACEWAYS

A. Steel pipe sleeves: ASTM A 53/A 53M, Type E, Grade B, Schedule 40, galvanized steel, plain ends.

B. Sleeves for rectangular openings: Galvanized sheet steel of length to suit application. Minimum thickness:

1. For sleeve cross-section rectangle perimeter less than 50 inches (1270 mm) and no side more than 16 inches (400 mm): 0.052 inch (1.3 mm).
2. For sleeve cross-section rectangle perimeter equal to or more than 50 inches (1270 mm) and 1 or more sides equal to or more than 16 inches (400 mm): 0.138 inch (3.5 mm).

2.3 ACCESSORY MATERIALS

A. Pull rope:

1. Polypropylene, minimum 0.1875 inch (5 mm) thick, tensile strength 800 pounds (3559 N), work load 130 pounds (578 N).
2. Basis of design: Graybar Electric Co., Inc., "Pro-Pull."

B. Caps and plugs:

1. Basis of design: Thomas & Betts Series 1470.

C. Lubricant:

1. UL approved.
2. Basis of design: Ideal Industries, Inc. "Yellow 77" or "Aqua-Gel II".

D. Bituminous protective coating: Coal tar based, self-priming on steel, applied in a wet film thickness at least 22.0 mils (559 microns) per coat.

E. Rust inhibitive paint:

1. Alkyd based, white, black, or bronzetone; applied in a wet film thickness of at least 2.9 mils.
2. Basis of design: Benjamin Moore Super Spec HP D.T.M. Alkyd Low Lustre P23.

2.4 CONDUIT HANGERS

A. Adjustable hangers:

1. Basis of design: Kindorf C-711 lay-in hanger or C-710 Clevis hanger.

B. Trapeze hangers:

1. Constructed of channels with notched steel straps.
2. Steel strap basis of design: Kindorf C-105.

C. Channels:

1. Steel, 1.5 inches (38 mm) wide with 7/8-inch (22-mm) continuous slot, gauges and weights.
2. Basis of design: Kindorf B-900 series.

D. Beam clamps:

1. Adjustable type for connecting hanger rod to steel beam.
2. Basis of design: Kindorf E-160 or U-569

E. Hangers for conduit 1.0 inch (27 mm) and smaller, through or below bar joists: "Hang-on" hangers attached to joists with Minerallac scissor clips or two-piece stud clips.

F. Finish: For hangers, assemblies, plate washers, rods, locknuts, channels, bolts, and appurtenances:

1. Hot-dip galvanized.

2.5 FASTENERS

A. General: Select fasteners such that load applied does not exceed one-fourth of manufacturer's load capacity in 3500 psi (24000 kPa) concrete.

B. Fasteners to concrete: Self-drilling type expansion anchors, or machine bolt drop in anchors for drilled holes. Fasteners to concrete ceilings shall be vibration- and shock-resistant.

C. Fasteners to drywall or cavity wall: Toggle bolts, hollow-wall drive anchors, or nylon anchors as required.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Provide complete, separate and independent raceway system for each of the various wiring systems including, but not limited to, the following:

1. Lighting
2. Exit Lighting*
3. Emergency Lighting System*

4. Fire Alarm System
5. Low Voltage Control System
6. Control Wiring
7. Voice and Data Systems
8. Sound System

*These wiring systems may be installed in common raceways.

- B. Wire raceway systems completely, except where otherwise indicated, as shown on drawings and as required for satisfactory operation of each system.
 - C. Where wireways are required or used to facilitate the installation, size them to accommodate conductors, in accordance with NFPA 70.
 - D. Do not install conductors or pull rope during installation of conduit.
 - E. Where conduit is connected to a cabinet, junction box, pull box, or auxiliary gutter, protect the conductors with an insulating bushing. Provide locknuts both inside and outside the enclosure. Where conduit is stubbed up to above ceilings for future wiring, close ends with bushings.
 - F. Rust-inhibitive paint: Unfinished metal components.
 - G. Make turns in conduit runs with manufactured elbows or using machines or tools designed to bend conduit. Turns shall be not less than the various radii permitted by NFPA 70.
 - H. Sizes:
 1. Do not use conduit smaller than 0.75 inch (21 mm), except where otherwise indicated.
 2. Feeder conduits shall be as large as indicated, or as required by NFPA 70 (whichever is larger). Do not install more than one feeder in a single conduit.
 3. Conduit sizes shown on drawings are based on Type THHN/THWN-2 wire.
 - I. Make vertical runs plumb and horizontal runs level and parallel with building walls and partitions.
 - J. Ground conduits as required by NFPA 70.
 - K. Where conduits pass through building expansion joints, and wherever relative movement could occur between adjacent slabs, equip with weatherproof expansion fittings and bonding jumpers.
 - L. Run conduits concealed in new construction except where connecting to surface-mounted cabinets and equipment, at auditorium catwalk, and in electrical and mechanical equipment spaces. Install conduit above suspended ceilings and within walls and partitions.
 - M. Immediately after each run of conduit is completed, test it for clearance, smooth the joints, and close at each end with caps or plugs to prevent entrance of moisture or debris.
- 3.2 INSTALLING PULL BOXES, JUNCTION BOXES, OUTLET BOXES
- A. Install as specified in Section 26 0534, Boxes.
 - B. Install pull or junction boxes in long runs of conduits or where necessary to reduce the number of bends in a run.
 1. Select inconspicuous locations. Do not install until locations have been approved by the Engineer.

2. Install boxes flush with wall or ceiling surfaces, with flat covers. Where removable ceiling units are used, locate boxes above ceilings.

C. Verify door swings with door frame installed before locating switch outlets.

3.3 INSTALLING FLEXIBLE CONDUIT

A. Installation shall comply with NFPA 70.

1. Minimum length: Two feet (610 mm).
2. Maximum length: Six feet (1830 mm).

B. Make immediate connections to recessed lighting fixtures and other equipment in suspended ceilings with flexible metal conduit. Include sufficient slack to permit removal of fixture or equipment.

3.4 INSTALLING PULL ROPE AND CONDUCTORS

A. After conduit is installed, fish pull rope. After completion of the work of this project, pull rope shall remain in conduits identified as to be left empty.

B. Do not use a pull rope that has a tensile strength of more than one of the conductors of a two-wire circuit, more than two of the conductors of a three-wire circuit, or more than three of the conductors of a four-wire circuit.

C. Do not pull conductors into the conduits until the system is entirely completed and wet building materials are dry.

D. Use only a lubricant approved for use with conductor materials and pull rope materials.

3.5 INSTALLING CONDUIT HANGERS

A. Single runs of overhead conduits 1.25-inch (35-mm) size and larger shall be supported by adjustable hangers, using 0.375-inch (10-mm) rods for conduits up to 2.0 inch (53-mm) size and 0.5-inch (13-mm) rods for conduits larger than 2.0 inches (53 mm).

B. Support groups of conduits run in parallel on trapeze hangers suspended from 0.5-inch (13-mm) hanger rods.

C. Space hangers not over 5 feet (1.5 m) apart for non-metallic conduits, and not over 10 feet (3 m) apart for metal conduits. Support conduits within 3 feet of each outlet, junction or pull box.

D. Below bar joist construction, support hangers from a length of structural channel, welded to the top chords of at least two joists.

E. Where large numbers of conduits are grouped together, stagger individual hangers so as not to concentrate the load on a few joists.

F. Where hanger rods are attached to structural beams, use adjustable beam clamps.

G. Below precast plank construction, hanger rods shall pass through the precast planks and be secured on top side with nut, locknut and plate washer. Plate washers shall be at least 4 inches (102 mm) square and 0.125 inch (3.2 mm) thick. Top of hanger assembly shall be concealed in the concrete fill which will be placed over the planks.

- H. Attach hanger rods to concrete with expansion bolts and anchors.

3.6 CONDUIT IN EXISTING BUILDING

- A. Remove superfluous electrical equipment and cap outlets not being used, as specified in Section 26 0504, Electrical Demolition.
- B. In existing areas that are being renovated it is the intent to show on the drawings what the finished areas will contain when completed. Except as specified otherwise, existing conduit, and outlet boxes may be reused where they meet specifications and code requirements. Replace existing products or materials which are not suitable for reuse as determined by the Engineer.
- C. Suitably cap superfluous concealed outlets, and remove unused wire. Remove superfluous raceways exposed in finished areas, and abandon superfluous raceways concealed in walls.
- D. Install concealed conduit in existing building wherever possible above ceilings, in new walls, and in existing furred spaces. Install exposed conduit in secondary rooms, such as storage rooms.

END OF SECTION

SECTION 26 0534

BOXES

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Boxes with covers.

1.2 RELATED SECTIONS

- A. Conduits: Section 26 0533.
- B. Access doors: Section 26 0503.

1.3 SUBMITTALS

- A. Product data: Each type of box included in the project.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Outlet, switch, and junction boxes:
 - 1. Sheet metal: NEMA OS 1, sherardized or galvanized stamped.

2.2 BOXES FOR WALLS AND PARTITIONS

- A. Outlet boxes in concrete construction: Octagonal, two-piece type, of sufficient depth to keep conduits not closer than 1 inch (25 mm) to surface.
- B. Switch boxes in masonry partitions and walls: Square cornered tile wall boxes 3.5 inches (90 mm) deep, or four-inch (100-mm) square boxes with raised tile wall device covers. The device covers shall be of extra depths required to suit the block or brick construction in which they are placed.
- C. Switch boxes in metal stud partitions: 4 inches (100 mm) square by 3.5 inches (90 mm) deep boxes with 0.75-inch (19-mm) raised tile wall device covers finishing flush with finished wall surface.
- D. Wall- and partition-mounted outlets for low-voltage systems: Same as specified above for switches.

2.3 JUNCTION AND PULL BOXES

- A. Junction boxes for lighting and branch circuits: Sheet metal, NEMA OS 1, sherardized or galvanized stamped, 4-inch depth minimum.
- B. Junction and pull boxes in feeder conduit runs: Galvanized, of size required for conduit arrangement and not less than the size required by NFPA 70, and furnished with screwed covers.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Provide box at each outlet, switch, and appurtenance. Each box shall be of a type suitable for the duty intended and shall be installed in accordance with the manufacturer's instructions.
- B. Coordinate locations of boxes with installation of conduit as specified in Section 26 0533.
- C. Do not install boxes back-to-back (through the wall) in partitions.
- D. Firmly secure the boxes in place, plumb, level, and with front of device cover even with finished wall surface.
- E. Boxes in metal stud walls or partitions shall be securely supported by metal channels spanning between two studs and attached to same.
- F. Outlet boxes used for supporting lighting fixtures: Furnish with malleable iron fixture studs of "No-Bolt" type, secured by locknut. Provide structural channel supports for boxes occurring in ceilings. Outlets in ceilings directly on bottom of joists shall be supported independent of ceiling construction. Outlets in suspended ceilings shall not be supported from ceiling construction. Special supports for boxes shall be as directed and approved by the Engineer.
- G. Provide a single cover plate where two or more devices are grouped together in one box.
- H. Verify door swings with door frame installed before locating switch outlets.
- I. Outlet boxes in fire-rated assembly:
 - 1. Clearance between boxes and wallboard shall not exceed 0.125 inch (3.2 mm).
 - 2. Surface area of individual outlet box does not exceed 16 square inches (103 sq cm).
 - 3. Entire surface area of boxes shall not exceed 100 square inches (645 sq cm) per 100 square feet (9.3 sq m) of wall surface.

3.2 IDENTIFICATION

- A. Identification on outside covers of pull and junction boxes in ceiling space or exposed on walls: Paint with colored enamel or mark with permanent waterproof black marker, or both, as specified.
 - 1. Power and lighting: Panelboard designation and circuit number(s).

END OF SECTION

SECTION 26 0553

IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

- A. This section includes electrical identification materials and devices required to comply with ANSI, NFPA, and OSHA standards.
- B. This section addresses identification of electrical equipment, raceways, boxes, conductors, and other related electrical system components.

1.2 SECTION INCLUDES

- A. Identification of power conductors and control cables.
- B. Identification of equipment and instructions.
- C. Miscellaneous identification products.

1.3 RELATED SECTIONS

- A. Sections in Division 26.

1.4 REFERENCES

- A. ANSI Z535.4: Standard for Product Safety Signs and Labels.
- B. ANSI/IEEE C2: National Electrical Safety Code.
- C. NFPA 70: National Electrical Code.
- D. NFPA 70E: Standard for Electrical Safety in the Workplace.
- E. OSHA 29 CFR 1910.144: Safety Color Code for Marking Physical Hazards.
- F. OSHA 29 CFR 1910.145: Specifications for Accident Prevention Signs and Tags.
- G. UL 969: Standard for Marking and Labeling Systems.

1.5 SUBMITTALS

- A. Product data: For each type of electrical identification product.

1.6 QUALITY ASSURANCE

- A. Comply with ANSI A13.1 and IEEE C2.
- B. Comply with NFPA 70.
- C. Comply with OSHA standards.
- D. Comply with ANSI Z535.4 for safety signs and labels.

1.7 COORDINATION

- A. Coordinate identification names, abbreviations, colors, and other features with requirements in other sections requiring identification applications, drawings, shop drawings, manufacturer's wiring diagrams, and the operation and maintenance manual; and with those required by codes, standards, and safety regulations. Use consistent designations throughout Project.
- B. Coordinate installation of identification materials and devices with completion of covering and painting of surfaces where devices are to be applied.
- C. Coordinate installation of identification materials and devices with location of access panels and doors.
- D. Install identifying materials and devices before installing acoustical ceilings and similar concealment.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Subject to compliance with requirements, provide products by one of the following manufacturers, or approved equal:
 - 1. Brady USA, Inc.
 - 2. Carlton Industries
 - 3. Graphic Products, Inc.
 - 4. Ideal Industries, Inc.
 - 5. Panduit Corporation
 - 6. Presco
 - 7. Seton Identification Products
 - 8. Thomas & Betts Company
 - 9. Utility Safeguard

2.2 GENERAL PRODUCT REQUIREMENTS

- A. Except where otherwise indicated, provide manufacturer's standard identification products of category and type suitable for each application. Where more than one identification method is specified for an application, the Installer shall select and utilize each material in a consistent manner.

2.3 CONDUCTOR AND CABLING IDENTIFICATION

- A. Color-coded, adhesive tape: Self-adhesive, vinyl tape, in appropriate colors for system voltage and phase.
- B. Marker tapes: Vinyl or vinyl-cloth, self-adhesive, wraparound type with preprinted numbers and letters.

2.4 EQUIPMENT IDENTIFICATION

- A. Engraved plastic nameplates: Laminated plastic, engraved, white letters on black background, except where other color schemes are noted or specified.
 - 1. Size: Minimum 0.75-inch (19 mm) by 2.5-inches (64 mm).

2. Letter size: Minimum height of 0.375-inch (10 mm).
3. Mechanically fastened, except adhesive mounted where necessary due to substrate.
 - a. Mechanical fastener: Punched or drilled, with vandalproof stainless steel or brass screws or rivets.
- B. Baked-enamel signs: Preprinted, aluminum signs, punched or drilled for fasteners with corner grommets; with colors, legend, and size required for application.
- C. Adhesive film label: Machine-printed, black letters on white background, through thermal transfer or equivalent process, with clear weatherproof and UV-resistant covering. Minimum letter size height of 0.375-inch (10 mm).

2.5 MISCELLANEOUS IDENTIFICATION PRODUCTS

- A. Wiring device tape labels:
 1. Adhesive film label: Machine-printed, black letters on clear background, through thermal transfer or equivalent process. Minimum letter size height of 0.25-inch (6 mm).
 - a. Labeling for electrical devices and components such as receptacles, switches, control device stations, manual motor starters, network and phone jacks, junction and pull boxes, etc.
- B. Warning labels and signs:
 1. Self-adhesive warning labels: Factory-printed, multicolor, pressure-sensitive adhesive labels, configures for display on front cover, door, or other access to equipment unless otherwise noted.
 2. Baked-enamel warning signs: Preprinted, aluminum signs, punched or drilled for fasteners with corner grommets; with colors, legend, and size required for application.
 3. Fasteners: Self-tapping, stainless-steel screws or, stainless-steel machine screws with nuts, flat and lock washers.
- C. Cable ties: Fungus-inert, self-extinguishing, one-piece, self-locking, color-coded, nylon cable ties suitable for the application (general purpose, UV-stabilized outdoor, or plenum rated).
- D. Paint: Formulated for the type of surface, location, and intended use.
- E. Stenciling: Nonfading, waterproof, ink or paint. Black or color-coded.
- F. Adhesive: Heavy-duty, thermo-resistant, industrial grade adhesive, for adhesion to any surface without identification curling, peeling, or falling off.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Verify identity of each item before installing identification products.
- B. Location: Install identification products at locations for most convenient viewing without interference with operation and maintenance of equipment.
 1. For finished public spaces, coordinate identification product mounting locations with Owner.

- C. Existing equipment: Apply identification products to unmarked existing equipment where work is being performed.
- D. Apply identification products to surfaces after equipment finish work has been completed.
- E. Clean surfaces before applying identification products, using materials and methods recommended by manufacturer of identification device.
- F. Attach signs and plastic labels that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.
- G. Cable ties: For attaching tags, use general-purpose type, except as listed below:
 - 1. In spaces handling environmental air: Plenum rated.

3.2 APPLICATION

- A. Miscellaneous:
 - 1. Access doors and panels: Apply engraved nameplate labels at access doors identifying concealed electrical item. Do not locate labels in finished, public spaces.
- B. Junction and pull boxes:
 - 1. Label each junction and pull box, identifying circuit designation or type of system.
 - a. Exposed boxes: Place label on coverplate, externally visible.
 - b. Concealed boxes: Place label or tag on inside cover of box.
 - c. Junction boxes concealed above suspended ceilings or exposed in non-occupied spaces may be marked with permanent ink marker in lieu of printed labels.
- C. Wiring and cabling identification:
 - 1. Power circuit conductor identification, 600 V or less: Apply color-coded identification for cables, feeders, and power circuit conductors exposed in accessible vaults, junction and pull boxes, utility structures, and equipment enclosures. Apply color-coding scheme as indicated below throughout the building's network of feeders and circuits, unless otherwise required by the authority having jurisdiction.
 - a. Colors on conductors No. 10 and smaller, or No. 6 and smaller for grounded and grounding conductors: Solid colored insulation.
 - b. Colors on conductors No. 8 and larger, or No. 4 and larger for grounded and grounding conductors: Apply colored tape wrapped a minimum of 6 inches (150 mm) on either end of conductor and in boxes where splices or taps are made.
 - c. Conductors used solely for grounding purposes shall be green, if insulated.
 - d. Where multi-conductor cables are used, use same color coding system for identification of wiring.

COLOR CODE (600 V Max.)				
VOLTAGE	NEUTRAL	PHASE		
		A	B	C
120-V, 2-wire	White	Black, Red, or Blue depending on phase		
277-V, 2-wire	Gray	Brown, Orange, or Yellow depending on phase		
208/120-V wye, 3-phase, 4-wire	White	Black	Red	Blue

2. Conductors for future use: Attach tags with circuit designation for conductors to be extended for future use.
 3. Control and low-voltage system wiring shall be coded with colors and markings different from those used to designate phase wires.
- D. Wiring device labels: For wiring devices such as receptacles, devices installed in surface raceway assemblies, and other wiring devices operating at or greater than 120V.
1. Apply adhesive film labels on outside of wiring device coverplates identifying circuit designation serving device, except apply on the inside cover for the following locations.
 - a. Public lobbies, auditoriums, corridors, and vestibules.
- E. Equipment identification: Install unique designation label consistent with contract documents and shop drawings.
1. Labeling instructions:
 - a. Engraved plastic laminate nameplates, unless otherwise indicated.
 - b. Unless otherwise required, provide a single line of text with 0.5-inch (13 mm) high lettering on 1.5-inch (38 mm) high label. Where two or more lines are required, use single label with increased height.
 - c. For multi-section or multi-compartment equipment, apply labels identifying each compartment or section.
 - d. For fusible equipment, identify fuse type and size on the front cover.
 - e. For enclosed circuit breaker equipment, identify device trip rating where rating is not visible.
 - f. Where equipment has more than one source of power (i.e., transfer switch, separate control power source), the location and circuit designation of each power source shall be clearly identified at the equipment location.
 2. Apply nameplates and labels to equipment according to the below identification schemes:
 - a. Identify equipment designation; voltage rating; phase and number of wires; and designation and location of load served. Apply products to the following equipment:
 - (1) Panelboards
 - (2) Dimming system equipment
- F. Warning and caution labels and signs:
1. Apply warning and caution labels on equipment in accordance with NFPA 70 and 70E, ANSI, and OSHA requirements including arc flash hazard warning labels and special clearance requirements.
 2. Apply warning and caution labels and signs at locations where safe operation and maintenance of electrical system equipment is of concern.
 3. Apply warning signs on electrical room doors in accordance with NFPA 70 and 70E, ANSI, and OSHA requirements. Where doors are located in finished, public areas, located sign on the inside of the door. Coordinate mounting requirements with door type.

G. Operating instruction signs:

1. Apply instruction signs at locations where directions for safe operation and maintenance of electrical system equipment are necessary. Apply approved text where instructions are needed for proper system operation.

- a. Emergency instructions: Provide white text on red background.

3.3 FIELD QUALITY CONTROL

- A. Coordinate names, abbreviations, colors, and other designations with construction documents, submittals, and applicable code and standards requirements. Utilize consistent designations and identification techniques throughout project.
- B. Install identification products at locations that are clearly visible at normal viewing angles and without interference with operation and maintenance of the equipment.
- C. Install identification products in a neat and clean, workmanship-like manner where products are securely attached and oriented parallel to equipment edges.

END OF SECTION

SECTION 26 5100
INTERIOR LIGHTING

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Lighting fixtures, including LED light engines, LED drivers, and accessories.

1.2 RELATED SECTIONS

- A. Lighting Control Systems: Section 26 0923.

1.3 SUBMITTALS

- A. Product data: For each type of lighting fixture indicated, arranged in order of fixture designation. Include data on features, accessories, and the following:
 - 1. Dimensions of fixtures, photometrics and efficiency, wattage, reflectors, glassware, voltage, suspension, and appurtenances.
 - 2. Certified results of laboratory tests for fixtures and lamps for photometric performance.
 - 3. LED drivers
 - 4. Lumen output, rated color temperature, and manufacturer's LED binning procedures.
- B. Maintenance data: For lighting fixtures to include in maintenance manuals specified in Division 01.

1.4 QUALITY ASSURANCE

- A. UL label and local testing (if required): As specified in Section 26 0500, Common Work Results for Electrical.
- B. Fixtures, emergency lighting units, and accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction.
- C. Comply with NFPA 70.
- D. NFPA 101 Compliance: Comply with visibility and luminance requirements for exit signs.

1.5 COORDINATION

- A. Fixtures, mounting hardware, and trim: Coordinate layout and installation of lighting fixtures with ceiling system and other construction.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver glassware and lamps in their original cartons, clearly labeled.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis-of-design products: Fixtures indicated in the Fixture Schedule on the drawings are the basis of design of the project.

1. Subject to compliance with requirements, provide the scheduled products. Unnamed products will only be considered and approved according to Bidding and Contracting requirements and Division 01 requirements for substitutions.
- B. Subject to compliance with requirements, provide products by one of the following:
 1. Drivers:
 - a. Philips/Advance
 - b. Osram Sylvania
 - c. Universal Lighting Technologies
 - d. Lutron
 - e. EldoLED

2.2 FIXTURES, GENERAL

- A. Fixtures shall comply with UL 1598 and be complete with sockets, casings, fittings, holders, shades, glassware, lamps, and appurtenances, wired and completely assembled.
- B. Metal parts: Free from burrs, sharp corners, and edges.
- C. Sheet metal components: Steel, unless otherwise indicated. Form and support to prevent warping and sagging.
- D. Doors, frames, and other internal access: Smoothly operating, free from light leakage under operating conditions, and arranged to permit access without use of tools. Arrange doors, frames, lenses, diffusers, and other pieces to prevent accidental falling during access and when secured in operating position.
- E. Metal finishes: Painted after fixture fabrication.
- F. Reflecting surfaces: Minimum reflectance as follows, unless otherwise indicated:
 1. White surfaces: 85 percent.
 2. Specular surfaces: 83 percent.
 3. Diffusing specular surfaces: 75 percent.
 4. Laminated silver metalized film: 90 percent.
- G. Lenses, diffusers, covers, and globes: 100 percent virgin acrylic plastic or annealed crystal glass, unless otherwise indicated, exactly as scheduled or specified in optical details and lighting characteristics.
 1. Plastic: High resistance to yellowing and other changes due to aging, exposure to heat, and ultraviolet radiation.
 2. Lens thickness: 0.125 inch (3 mm) minimum, unless greater thickness is indicated.

2.3 LED DRIVERS

- A. Driver shall operate from a 120-volt or 277-volt, 60-Hz input power source and be suitable for outputting power to 12-volt or 24-volt LED lamp sources, as required.
- B. Drivers, where specified, shall be capable of being dimmed. Dimmable drivers shall be controlled by a Class 2 low-voltage 0-10VDC controller.

C. Performance Criteria:

1. Driver shall have a Class A sound rating.
2. Driver shall have a power factor (PF) greater than 0.90.
3. Driver shall have Total Harmonic Distortion (THD) of input current equal to or less than 20 percent.

D. Driver shall meet FCC and Title 47 CFR regulations for EMI/RFI.

E. Driver shall comply with ANSI C62.41 Class A requirements for transient protection.

2.4 LED LIGHT ENGINES

A. The LED manufacturer shall provide the quantity and wattage of LEDs required to achieve the defined lighting output set forth by the lighting fixture manufacturer.

B. LED light engines shall be integrated into an engineered package for the specific lighting fixture application, including heat dissipation components.

C. Color temperature: As specified in lighting fixture schedule, with a tolerance of plus or minus 100K and within a range of three macadam ellipses. Noticeable color temperature variation between adjacent lighting fixtures shall be considered a failure to meet these specifications and shall be replaced at no cost to the owner.

D. Minimum performance characteristics:

1. Life: Minimum lumen maintenance of L70 at 50,000 hours, as defined by IES LM-80.
2. Lumen output: Based on absolute photometry, lumens (total luminous flux exiting the physical luminaire), as specified on contract drawings and schedules.
3. Color rendering index: Rated at 80 or higher.

2.5 FIXTURE SUPPORT COMPONENTS

A. Comply with Section 26 0500, Common Work Results for Electrical, for channel- and angle-iron supports and nonmetallic channel and angle supports.

B. Single-stem hangers: 1/2-inch (12-mm) steel tubing with swivel ball fitting and ceiling canopy. Finish same as fixture.

C. Twin-stem hangers: Two, 1/2-inch (12-mm) steel tubes with single canopy arranged to mount a single fixture. Finish same as fixture.

D. Rod hangers: 3/16-inch- (5-mm-) minimum diameter, cadmium-plated, threaded steel rod.

E. Hook hangers: Integrated assembly matched to fixture and line voltage and equipped with threaded attachment, cord, and locking-type plug.

F. Aircraft cable support: Use cable, anchorages, and intermediate supports recommended by fixture manufacturer.

G. Piping, conduit, and light fixtures can be supported from the metal floor deck with cast in place anchors (HCI-MD by HILTI, Bang-it by Powers, Blue Banger Hanger by Simpson Strong-Tie or equal.) Maximum load for these anchors to be 250 pounds and minimum spacing 3'-0" in each direction.

2.6 FINISHES

- A. Fixtures: Manufacturer's standard, unless otherwise indicated.
 - 1. Paint finish: Applied after fabrication over corrosion-resistant treatment or primer, free of defects.
 - 2. Metallic finish: Corrosion-resistant.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Before ordering the light fixtures, consult with the installer of the ceilings to ensure that the correct fixture trim is supplied and installed. Provide the supports and accessories required for installation in each ceiling system.
- B. Before ordering the light fixtures, verify the specified voltage with the voltage shown on the drawings to ensure the correct voltage is supplied.

3.2 INSTALLATION

- A. Furnish and install a complete lighting fixture for every outlet indicated on the drawings so that every outlet shall be properly provided with a suitable fixture of type specified, of wattage indicated.
- B. Fixture wire shall bear UL label. Fixture wiring for fixtures and branch circuit wiring in fixture channels shall be type THHN.
- C. Furnish fixtures in the quantities, sizes, and types indicated on drawings.
- D. Provide recessed fixtures with flexible conduit connector and wire (fixture whip), or a removable wiring access plate, so that they may be wired without removing ballast cover. Plate shall be screwed to fixture housing and conduit shall be securely attached and grounded to fixture to meet NEC requirements.

3.3 FIXTURE SUPPORT

- A. Support from building structure: Provide fasteners appropriate to the supporting substrate, and wire, jack chain, or rods as specified for particular fixture types below.
 - 1. Provide channels bolted or welded between joists where required to obtain proper spacing for lighting supports.
 - 2. Connections to joists or beams: Beam clamps. For wire supports, wrap wire securely around structural member.
 - 3. Connections to concrete: Embedded, as specified in Section 26 0533, Conduits.
- B. In suspended plaster and drywall ceilings, fixtures may be supported from the suspended ceiling construction. Fasten box and fixture supports securely to suspension system. Where fixtures are surface-mounted, cut neat holes in the plaster as required for supports.
- C. Recessed fixtures in suspended acoustical ceilings: Coordinate fixture installation with ceiling installer. Ensure that ceiling supports are located to clear fixtures.
 - 1. Support from building structure: Use fasteners specified in Section 26 0533, Conduits, and No. 10 wire.

- a. Provide 2 supports for each individual fixture, one at each end of fixture. In continuous rows, install additional supports at each joint.
- D. Surface-mounted and stem-suspended fixtures on or below suspended acoustical ceilings:
Supported from the building structure above with 0.25-inch (6-mm) rods.
 - 1. Install double nuts on rods.
 - 2. Provide 2 supports for each individual fixture, 1 at each end of fixture. In continuous rows, install an additional support at each joint.
 - 3. Surface-mounted fixtures mounted on low-density ceilings shall be provided with spacers where required.
- E. Where it is necessary for a fixture to be installed directly below an air duct, install two hanger rods, one on each side of the duct, bolted to a channel or angle suspended from the hangers under the duct, and support the fixtures from the suspended channel or angle.

3.4 ADJUSTMENT PERIOD

- A. Occupancy adjustments: When requested within 3 months of date of Substantial Completion, provide on-site assistance in adjusting fixtures to suit occupied conditions. Provide up to 2 visits to project outside of normal occupancy hours for this purpose. Some work may be required after dark.

3.5 CLEANING

- A. Light fixtures, used for temporary lighting during construction, shall be cleaned free of construction dirt to like-new condition, and re-lamped with the specified lamps.

END OF SECTION

SECTION 28 3100

FIRE DETECTION AND ALARM SYSTEM

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Modifications to existing fire detection and alarm system.
- B. Costs of certification and testing, including tests required by NFPA 72, shall be included in the contract sum.

1.2 DEFINITIONS

- A. Definitions in NFPA 72 apply to fire alarm terms used in this section.

1.3 SYSTEM DESCRIPTION

- A. Control of system: By the existing fire alarm control panel.

1.4 SUBMITTALS

A. General:

1. When approved, no variation will be permitted except with the approval of the Engineer.
2. Submit to the authority having jurisdiction and to the Engineer for review and approval.

B. Shop drawings:

1. Floor plans indicating final equipment and device locations and raceway routes.
2. System operation description: Detailed description for this project, including method of operation and supervision of each type of circuit and sequence of operations for manually and automatically initiated system inputs and outputs. Manufacturer's standard descriptions for generic systems are not acceptable.
3. Wiring diagrams and riser diagrams.

- C. Product data: Schedule and each type of system component, including dimensioned plans and elevations showing minimum clearances and installed features and devices. Include UL listings.

- D. Certifications: UL Certificate of Compliance of system supplier as specified in "Quality Assurance" below.

1.5 QUALITY ASSURANCE

- A. System and equipment shall be UL listed. Each major component shall bear the manufacturer's name and catalog number.
- B. UL labels and local testing (if required): As specified in Section 28 0500, Common Work Results for Electronic Safety and Security.
- C. Single-source responsibility: Obtain system components from a single source who assumes responsibility for their compatibility.

D. Qualifications of system supplier and installer:

1. Staff shall consist of at least one NICET Level III Technician or a professional engineer registered in Maryland.
2. Has installed at least ten systems of the type specified which have performed satisfactorily for not less than two years.
3. Maintains a facility with a sufficient stock of spare parts.
4. Shall respond within 24 hours of notification to correct system failure or malfunction. During the project correction period defined in General Conditions and in Section 28 0500, perform such corrections at no addition to the Contract Sum.

E. Factory-authorized service representative: Trained and certified by the manufacturer of the system, and experienced in the installation and operation of the type of system included in the work.

F. Comply with NFPA 72, applicable local codes, and regulations and requirements of the authorities having jurisdiction. Howard County is the local code authority.

1.6 SEQUENCING AND SCHEDULING

A. Existing fire alarm equipment: Maintain fully operational until new equipment has been tested and accepted.

1. Field verify existing system is fully operational before beginning work on the existing components. If existing system is not fully operational immediately notify the Owner and Engineer in writing, and do not perform any work on the existing system until directed by the Engineer.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Provide equipment and devices compatible and operable with the existing system.

2.2 ADDRESSABLE INTERFACE DEVICE

A. Control module: Microelectronic control relay module listed for use in providing control to external appliances.

1. One Form C (SPDT) dry relay contact rated at 2 amps and 24 volts DC.

B. Non-addressable control relay: Isolation relay, UL 864 Listed.

1. Construction: Sealed, non-removable, with terminations to pressure-type screw terminals.
2. Rating: Use with circuits up to 240 volts AC at 7 amperes inductive.

2.3 WIRE AND WIRING SYSTEM

A. Non-power-limited circuits: Solid-copper conductors with 600-V rated, 75 deg C, color-coded insulation.

1. Low-voltage circuits: No. 16 AWG, minimum.
2. Line-voltage circuits: No. 12 AWG, minimum.

- B. Power-limited circuits: NFPA 70, Types FPL, FPLR, or FPLP, as recommended by manufacturer.
- C. Wiring system: Class B in accordance with NFPA 72.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Factory-authorized service representative, as required in "Quality Assurance" in Part 1 above, shall supervise installation, software documentation, adjustment, preliminary testing, final testing, and certification of the system, and provide the operating instructions.
- B. Provide wiring, conduit, and outlet boxes required for the complete system, in accordance with system manufacturer's instructions and with requirements specified in Division 26 for wiring, conduit, and boxes. Provide 12 inches of slack at each outlet.
 - 1. Install wiring in conduit.
 - 2. Identification: Paint fire alarm junction box covers red.
- C. Wires, cables, conduits, and wiring connections are specified in Division 26, Electrical. Include in the work of this section, wiring, conduits, and equipment connections complying with the requirements of Division 26, so that the fire alarm system will function as specified and indicated on the drawings.
- D. Wiring: Free from grounds or crosses between conductors.
 - 1. Identification: Color code wiring, not duplicating building wiring colors. Tag each wire at each junction point.
- E. Final connections between equipment and the wiring system shall be made under the direction and supervision of the qualified supplier.

3.2 INTERFACE WITH OTHER WORK

- A. Coordinate locations of control modules for connections to lighting control systems.

3.3 INSPECTION, TEST, ADJUSTMENT AND REPORT

- A. Furnish equipment and appliances for testing the complete system during progress of the work and after completion of the installation, including a megger test of wiring. The tests generally shall demonstrate the following:
 - 1. Circuits are continuous and free from short circuits.
 - 2. Circuits are free from unspecified grounds.
 - 3. Resistance to ground of non-grounded circuits is not less than one megohm.
 - 4. Circuits are properly connected in accordance with the applicable wiring diagrams.
- B. Defects or omissions observed during general and system tests shall be repaired as quickly as possible and the tests reconducted.
- C. Submit report as required in Part 1 above.

END OF SECTION

SECTION 26 0923

LIGHTING CONTROL SYSTEMS

PART 1 GENERAL REQUIREMENTS

1.1 GENERAL

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Work of these Specifications is applicable to the Jim Rouse Theatre for the Performing Arts Theatrical House Lighting Controls project.
- C. Work in this section includes a new architectural lighting control system for integrated control of new house lighting fixtures and existing theatrical lighting.

1.2 WORK INCLUDED

- A. Furnish all labor, materials, and equipment to uninstall existing house lighting control systems equipment and install new lighting control systems as shown on the Drawings and described in these Specifications.
 - 1. Provide an Existing Conditions Site Inspection (or Inspections, as necessary) within three (3) weeks of project award to inspect and document existing conditions in the Jim Rouse Theatre.
 - a. All dimensions on the Drawings are to be Contractor-verified in the field.
 - b. Issue a formal request for information (RFI) for any inconsistencies, conflicts, or potential problems discovered during the Existing Conditions Site Inspection(s).
 - 2. Provide labor to carefully uninstall all existing house lighting systems equipment as indicated on the Drawings and in coordination with the Owner.
 - a. Decommission all electronics not intended to be reused in the new house lighting control system;
 - b. Decommission existing house lighting dimmer panels;
 - c. Perform modifications to electrical infrastructure (conduits and boxes) and cabling over 100V (high voltage) as required and as indicated on the Electrical Drawings;
 - d. Unmount existing house lighting dimmer panels, existing control processor (auxiliary control unit), and exposed cabling;
 - e. Uninstall all low voltage house lighting controls and lighting control connector plates;
 - f. Uninstall all cabling below 100V (low voltage);
 - 3. Turn over all decommissioned house lighting systems equipment (e.g., dimmer panels) to the Owner in good working order.
 - a. Note the Owner needs the existing dimmer panels for maintenance and for use as spares elsewhere in the School.
 - 4. Coordinate with the Owner to turn over or dispose of decommissioned lighting equipment as directed.
 - 5. New lighting system equipment provided as part of the renovation shall be new, unused, and of the latest design.
- B. Provide design and engineering as needed to configure the lighting control system to provide the functional features described in these Specifications and as requested by the Owner as part of the final system adjustment and set-up.

C. Coordination:

1. Electrical.

- a. House Lighting: Control of house lighting fixtures (architectural lighting) shall be integrated into the lighting control system by the Contractor.

1) The Contractor is to furnish equipment and program the architectural lighting control processors as per applicable Code requirements, the sequences of operation on the Electrical Drawings, and other Division 26 Specifications (See Related Work, below). See Electrical Drawings and other Division 26 Specifications for additional lighting system programming/commissioning requirements.

b. Theatrical Lighting:

- 1) House lighting fixtures (architectural lighting) shall be controlled only from the Owner's existing theatrical lighting control console during performances, when the lighting control system is in 'Show Mode.'
- 2) Provide time/labor to help the Owner's Technical Personnel configure the existing theatrical lighting control console to communicate with the new lighting control system via Ethernet (sACN).
- 3) The Owner's existing theatrical lighting fixtures shall be controlled from the new architectural lighting control system when the Theatre is not being used for performances, when the lighting control system is NOT in 'Show Mode.'
- 4) Coordinate DMX addresses and control processor programming with the Owner to provide the desired control of theatrical lighting from architectural lighting control stations.

2. Control System Programming:

- a. The lighting control system custom graphical user interface (GUI) is vital to the success of the lighting system and its acceptance by both technical and non-technical End Users that will be using the system.

- b. The Contractor is to schedule a programming meeting with the Owner and the Owner's technical staff within two (2) weeks of Contract Award notification to determine requirements for the lighting control system, to include functions and capabilities, one-button presets, GUI design requirements, and specific operational requirements.

1) The Contractor shall provide an overview of the new architectural control system's features and capabilities so that the Owner can get the most out of the programming meeting and advise on programming requirements to meet their specific needs.

- c. The Contractor is to allot a minimum of forty (40) hours dedicated to software programming time by a specialist certified by the manufacturer for programming and commissioning of the architectural lighting control system being provided. If the Contractor does not have this capability, the Contractor shall sub-contract these Services to a qualified Contractor as part of their Work, identifying the sub-contract organization name and qualifications as part of the Bid document submission.

- D. Provide four (4) site visits during the Warranty period to maintain lighting control systems equipment and to reprogram lighting systems to affect changes in the operational features as requested by the Owner.
- E. Provide two (2) identical training sessions of minimum four (4) hours duration to accommodate Owner and Technical Personnel staff schedules in the operation and maintenance of the lighting control systems.

1.3 DEFINITIONS

- A. The term “furnish” means to supply and deliver to the job site, ready for unloading, unpacking, assembly, installation, and similar operations.
- B. The term “install” is used to describe operations at the job site including the actual anchoring, applying, assembling, cleaning, curing, cutting, erection, finishing, patching, placing, protecting, pulling, terminating, unloading, unpacking, working to dimension, and similar operations that will render the systems complete and ready for the intended use.
- C. DMX: Digital Multiplexing.

1.4 RELATED WORK

- A. Related Sections include the following:
 - 1. 26 0101 “Electrical General Provisions”
 - 2. 26 0500 “Common Work Results for Electrical”
 - 3. 26 0501 “Excavation and Fill for Electrical Work”
 - 4. 26 0504 “Electrical Demolition”
 - 5. 26 0519 “Wires and Cables”
 - 6. 26 0526 “Grounding and Bonding”
 - 7. 26 0533 “Conduits”
 - 8. 26 0534 “Boxes”
 - 9. 26 0553 “Identification for Electrical Systems”
 - 10. 26 5100 “Interior Lighting”

1.5 QUALIFICATIONS

- A. The Installing Contractor for the systems and equipment specified herein must specialize in the installation of theatrical lighting control systems.
- B. The Contractor shall have a minimum five (5) years of experience in engineering, installation, adjustment, and servicing of theatrical and architectural lighting systems similar to those described in these Specifications. The Contractor shall have full-time, skilled technicians who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and best industry practices for the proper installation of the work.
- C. The Contractor shall have been authorized dealers or representatives of the manufacturers of the primary components for a minimum of two (2) years.
- D. Where a manufacturer of a primary component offers factory training in the configuration and use of that component, the Contractor is to have received that training.
- E. The Contractor shall maintain and operate shops for the integration and service of the system components.
- F. No sub-contracting work is permissible unless the Sub-Contractor is named and included as part of the Bid. All terms and requirements as specified herein apply to the Sub-Contractor. The right is reserved to reject the proposed Sub-Contractor based on the terms stated herein.
- G. Network Specialist:
 - 1. The Contractor shall have a network specialist – certified by the manufacturer of the lighting systems equipment to install and configure lighting networks – dedicated to this project during the commissioning phase.

1.6 SUBMITTALS

- A. Contractor Approval: Prior to contract award, the apparent low bidding Contractor shall submit information listed below to verify that the Contractor has the necessary experience and qualifications to perform the specified Work.
 - 1. Descriptive Materials: A detailed brochure describing the firm capabilities in terms of facilities, personnel experience background, examples of similar installations, and financial capability.
 - 2. References: Names and telephone numbers of individuals who may be contacted, showing satisfactory completion of at least two (2) lighting systems installations similar in scope and complexity within the past two (2) years to the lighting systems described in these Specifications.
 - 3. Line Card: A "line card" identifying manufacturers who have approved the Contractor as being factory-authorized to install and service their products.
 - 4. Bonding: Evidence that the Contractor satisfies the project bonding requirements to perform the specified Work.
 - 5. Warranty: Information on how the Contractor shall fulfill the requirements of the Warranty period.
- B. Product Data
 - 1. Prior to installation, submit a complete list, in the same order and format as the equipment listing in these Specifications, of all equipment to be provided. For each equipment item, include Manufacturer's name and equipment model number. Include accessories or auxiliary equipment required or intended to be provided even if not explicitly listed in these specifications.
 - 2. Collect Product Data into a single submittal and organize by element of construction or system. Product Data includes printed information such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams, performance curves, and photometric data. Where Product Data must be specially prepared because standard printed data is not suitable for use, submit as "Shop Drawings."
 - 3. Mark each copy to show applicable choices and options. Where printed Product Data includes information on several products, some of which are not required, mark copies to indicate the applicable information. Include the following information:
 - a. Manufacturer's printed recommendations.
 - b. Compliance with recognized trade association standards.
 - c. Compliance with recognized testing agency standards.
 - d. Application of testing agency labels and seals.
 - e. Notation of dimensions verified by field measurement.
 - f. Notation of coordination requirements.
 - g. Material Safety Data Sheets (MSDS) for each product.
 - h. Catalog or data sheets indicating all component manufacturer's names, model numbers, and performance data, where applicable.
- C. Shop Drawings
 - 1. Provide Submittals in accordance with Division 1.
 - 2. Show information necessary to explain fully the design features, appearance, function, fabrication, installation, and use of the system components in all modes of operation. Include the following at a minimum:
 - a. Signal, control, and power Block Diagrams detailing equipment, faceplates, interconnecting wires with unique identification labels, terminating devices (connectors or terminal strips), and multi-conductor wiring. Describe functional capabilities that are software programmable or configurable within control processors.

- b. Faceplate fabrication Drawings detailing devices, finishes, and engraving.
- c. Mounting details:
 - 1) Plans and elevations showing layout of new and existing lighting systems equipment on the Catwalk and indicating clearances.
 - 2) Details showing mounting of new lighting systems equipment on the Catwalk, including supplemental structure (strut channels, etc.) required to adequately support the equipment.
- d. Programmable Control Panels: Provide the items listed below in a separate submittal after programming meetings with the Owner and Technical End Users have confirmed GUI requirements and the proposed programming has been signed-off on by the Owner.
 - 1) Drawings printed in color showing graphical user interface (GUI) screen images intended to be used for touch screen control panels.
 - 2) Narrative description of how control panel will function for each control panel.
 - 3) Logical control flow (tree) diagram for each control panel.
 - 4) Schedule listing user / login types intended to be provided at each touch screen control panel location and indicating capabilities allowed for each user / login type. A unique access code shall be provided for each user / login type and shall be coordinated with the Owner.
- 3. Do not commence fabrication, installation, and erection until Shop Drawings have been approved by the Engineer.
- 4. Provide uniformly sized sheets in the Submittal.
- 5. Include a title sheet listing sheets in the Submittal.
- 6. Include manufacturer-published information sheets of proposed equipment intended to be provided as part of the project.
- 7. Perform a field survey to confirm proposed infrastructure modifications are adequate to support the installation of theater rigging and lighting systems as described in these specifications and note any areas of concern in a Request for Information.
- 8. Perform a field survey at the project site to confirm all applicable dimensions affecting the installation of lighting systems equipment. Note any possible conflicts to the lighting system installation, or areas of concern in a Request for Information.
- D. Miscellaneous: Prior to installation, submit copies of documentation listed below.
 - 1. Bid Addenda: A written statement acknowledging receipt of all bid addenda.
 - 2. Regulatory Requirements: Copies of licenses, permits, or other local jurisdictional approvals obtained by the Contractor to perform the specified Work.
 - 3. Test Plan: Description of tests to be performed on the lighting systems.
 - 4. Training Plan: Description of lighting systems training and instruction sessions to be provided to the Owner.
- E. As Built Drawings:
 - 1. Include all information submitted in the shop drawings and initial settings.
 - 2. Provide one (1) sets hard copy.
 - 3. Provide one (1) electronic set of As Built Drawings in DWG file format.
 - 4. Provide one (1) electronic set of As Built Drawings in PDF file format.
- F. Operation and maintenance manuals, PDF file format with sectioned tabs, including the information listed below.
 - 1. Table of contents.
 - 2. Equipment Manufacturer's catalog sheets, operating instructions, and service information.
 - 3. Operating instructions prepared by the Contractor for each subsystem describing the functions, operation, and maintenance written in language for comprehension by non-technical people.

4. Troubleshooting guide prepared by the Contractor for lighting systems listing the procedures to follow in the event of equipment failure, written in logical outline form.
5. Illustrative drawings to include lighting systems wiring diagrams, connector and cable location plans, log for tagged system connectors and cables, and as-built record drawings.
6. Copies of lighting systems operational software and documentation.
7. Copies of software files in editable file formats noting software application version required.
8. Results of lighting systems commissioning tests and safety inspections.
9. Equipment Inventory listing every item furnished or provided that includes the following information:
 - a. Item Description (i.e., "Lighting Control Processor")
 - b. Manufacturer
 - c. Model
 - d. Serial Number
 - e. Firmware Version (where applicable)
 - f. Quantity (If not given a serial number, IP, or MAC address)
 - g. Mac Address (if applicable)
 - h. IP Address or "DHCP" (if applicable)
 - i. Computer Name (for Owner Furnished Computers)

1.7 QUALITY ASSURANCE

- A. Manufacturer: A firm who has been continuously engaged in the production of architectural and theatrical lighting control equipment for at least fifteen (15) years and in the manufacture of theatrical dimming systems and dimmers for a minimum of ten (10) years.
- B. Latest Equipment: The Contractor is to provide the latest models or versions of equipment specified at time of Bid.
- C. Equipment Control Software: Adjustment or programming of lighting system control software shall be performed by Contractor personnel who have received factory training in the control software, otherwise adjustment and programming shall be performed by the Manufacturer.

1.8 EQUIPMENT SUBSTITUTION

- A. Basis of Design: Certain items of equipment are specified by manufacturers' model numbers to indicate an acceptable standard of quality and performance ("Basis of Design"). Proposed substitutions for lighting control systems equipment shall be considered as long as such substitutions provide a level of performance and functionality equal to or better than the equipment or items listed as "Basis of Design" described in these Specifications.
- B. Equipment Substitution Documentation: For each proposed "Basis of Design" equipment substitution, the Contractor shall submit for review the materials listed below.
 1. Product Literature: Manufacturer's product literature with a complete listing of the proposed substituted equipment operational characteristics and performance parameters.
 2. Product Differences: A complete listing of the operational and performance differences between the specified and the proposed substituted equipment.
 3. Installation Differences: A complete listing of changes to electrical wiring accompanied by interconnection block diagrams showing the changes required in related equipment or a statement that no changes are required, whichever is applicable.
 4. Pricing: The price differential between the specified and proposed substituted equipment.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver lighting control systems equipment, including equipment racks fabricated in the Contractor's shop, cardboard-wrapped or crated to provide protection during transit and job

storage.

- B. Acceptance at Site: Contractor shall accept and inventory all equipment upon delivery and provide copies of the inventory to the Owner.
- C. Site Storage: Store lighting control systems equipment at the building site under cover and away from sources of moisture. Place boxes on minimum 4-inch-high wood blocking. Provide minimum ¼ inch spacers between stacked boxes to permit air circulation. Avoid using non-vented plastic or canvas shelters that could create a humidity chamber. If packaging becomes wet, immediately remove equipment from cartons.
- D. Thermal Conditions: The temperature and humidity conditions within the storage area shall not be lower than 45°F and 20 percent relative humidity or higher than 90°F and 80 percent relative humidity.

1.10 WARRANTY

- A. General: Warranties specified herein shall not deprive the Owner of other rights covered by other provisions of the Contract Documents and will be in addition to, and run concurrent with, other warranties made by the Contractors under requirements of the Contract Documents.
 - 1. Warranty Terms: The Warranty shall be written and executed by the lighting control systems equipment Manufacturer and Contractor agreeing to adjust, repair, or replace equipment that fail in materials or workmanship (including installation workmanship) within a two-year period from the date of Final Acceptance. Replace items as required above within thirty (30) days after notification. Make replacements without cost to the Owner.
 - 2. Manufacturer's Authorization: The Contractor shall be authorized by the lighting control systems equipment Manufacturer, or have subcontractor arrangements with Others, to execute the Manufacturer's equipment Warranty.
- B. Warranty Period: Manufacturer's standard warranty but not less than 2 years after date of Final Acceptance.

PART 2 PRODUCTS

2.1 INTELLIGENT BREAKER PANEL (RELAY PANEL RP-1)

- A. General
 - 1. Breaker Panels shall be UL508, UL67, and UL924 Listed, and shall be so labeled when delivered.
 - 2. Breakers shall be UL489 listed and shall be labeled when delivered.
 - 3. Breaker Panels shall consist of a main enclosure with 12, 24, or 48 pole breaker subpanels, integral control electronics for low voltage terminations and provision for accessory cards.
 - a. Up to three accessory cards shall be supported per breaker panel
- B. Mechanical
 - 1. The panel shall be constructed of 16-gauge galvanized steel. All panel components shall be properly treated or finished in fine-textured, scratch resistant paint
 - 2. Breaker panels shall be capable of being mounted on the surface of a wall or recessed mounted
 - 3. Breaker panels shall be available in 12, 24, and 48 pole configurations
 - a. 12 pole MLO (No provision for main Breaker)
 - 1) 31 inches high, 14.25" wide and 4" deep (with front panel attached)

- b. 12 pole (with provision to add main breaker)
 - 1) 40.25 inches high, 14.25" wide and 4" deep (with front panel attached)
 - c. 24 pole (with provision to add main breaker)
 - 1) 50.25 inches high, 14.25" wide and 4" deep (with front panel attached)
 - d. 48 pole (with provision to add main breaker)
 - 1) 64 inches high, 20" wide and 5.25" deep (with front panel attached)
 - 4. Choice of panel covers shall be available for surface or recess mount applications. This outer panel shall ship complete with a locking door to limit access to electronics and breakers
 - a. Optional center-pin reject security screws shall be available for all accessible screws
 - b. Optional recess mount doors shall extend 1" beyond all panel edges to hide wall cut-out
 - 5. The unit shall provide interior cover over the control electronics and accessory cards to allow access only to class 2 wiring and prevent direct access to class 1 line voltage components
 - 6. The panel shall support up to twelve, twenty-four, or forty-eight single pole branch circuits
 - a. Branch circuits shall range from 15A to 30A capable of holding full rated load for minimum of three hours continuously.
 - b. Two and three-pole circuits shall be supported at decreased density where each pole constitutes one of the available single-pole circuits. Mixing of circuits in any combination shall be supported.
 - 7. Breakers shall provide manual switching control while power is unavailable to the panel such that critical lighting can be set to an on state, without the need for power to the panel.
 - 8. Breaker output lugs shall accept 10-14 AWG dual conductor wire.
 - 9. Breaker output lug shall support solid or stranded 6-14 AWG class B, C, or K copper wire.
 - 10. Control wiring for DMX, station bus, and Emergency input terminations shall land on removable headers for contractor installation.
- C. User Interface
 - 1. The user interface shall contain an LCD display with button pad to include 0-9 number entry, up, down back arrow navigation and enter
 - 2. Test shortcut button shall be available for local activation of preset, sequence and set level overrides
 - 3. The user interface shall have a power status LED indicator (Blue), a DMX status LED indicator (Green), a network status LED indicator (Green) and an LED indicator (red) for errors
 - 4. Interface shall allow the backlight to timeout and shall provide user editable options to shut off backlight completely as well as adjust screen contrast
 - 5. Ethernet interface (when installed) shall default to automatic IP through link local and DHCP. Upon receiving IP address, the address of the Network Interface Card (NIC) shall display in the about menu. Static address and settings shall also be possible
 - 6. The control interface shall support a USB memory stick interface for uploads of configurations and software updates
- D. Functional
 - 1. Panel setup shall be user programmable. The control interface shall provide the following breaker setup features (per circuit):
 - a. Type (1 pole, 2 pole, or 3 pole)
 - b. Name
 - c. Circuit Number

- d. DMX address
- e. sACN address (network enabled panels only)
- f. Space Number
- g. Circuit Modes
 - 1) Normal (priority and HTP based activation and dimming)
 - 2) Latch-lock
 - 3) Fluorescent
 - 4) DALI
- h. On threshold level
- i. Off threshold level
- j. Include in UL924 emergency activation
- k. Allow Manual
- 2. Breaker panels shall support discrete addressing of each breaker. Panels that are restricted to use of start address with sequential addressing, and cannot assign each 0-10V output control to any internal circuit shall not be acceptable
- 3. The panel shall be capable of switching 6 poles on or off at once, or in a user-selectable delay per breaker using a period of 0.1 to 60 seconds, in 0.1 second increments
- 4. Control electronics shall report the following information per branch circuit:
 - a. Breaker state (On/Off)
 - b. Breaker state (Open/Closed)
 - c. Current draw (In Amps)
 - d. Voltage
 - e. Energy usage
- 5. Built in Control shall include:
 - a. Ability to record up to 16 presets in each space from the control panel, connected control stations, or timed events
 - b. Presets shall be programmable by recording current levels (as set by DMX or connected control stations), by entering levels on the control panel directly, manually selecting breaker state on each breaker, or a combination of these methods. From the control panel, stations, or timed events it shall be possible to record values for up to 16 zones per space
 - c. Up to 8 spaces in a single rack for total of up to 16 spaces shall be supported per system or system subnet
 - d. Indication of an active preset shall be visible on the control panel display
 - e. One 16-step sequence per space for power up and power down routines
 - f. The panel shall have a UL924-listed contact input for use in Emergency Lighting systems. The panel shall respond to the contact input by setting included breakers to "on", while setting non-emergency breakers "off". Each breaker can be selected for activation upon contact input
 - g. Upon Data loss the system shall provide options to hold last look infinitely or hold for a configured time period set by the installing technician then fade/switch to the input of the next available priority
 - h. Control electronics shall respond directly to control stations for zone, preset, and sequence control. Systems that require secondary control systems for this functionality are not acceptable
 - i. After power loss, electronics shall be capable of holding the system in its previous state until new level data (DMX, architectural presets, sequences and zones, or local overrides) is received to make each breaker change state
- 6. The control of lighting and associated systems via timed and Astronomical clock controls
 - a. The breaker panel shall allow the activation of presets, sequence, and zone

- programming of up to 50 time clock events via a built in real and astronomical time clock
- b. System time events shall be programmable via the control panel
 - 1) Time clock events shall be assigned to system day types. Standard day types include: everyday, weekday, weekend, Sunday, Monday, Tuesday, Wednesday, Thursday, Friday and Saturday
 - 2) Time clock events shall be activated based on sunrise, sunset, time of day or periodic event
 - 3) System shall automatically compensate for regions using a fully configurable daylight saving time
 - 4) Presets shall be assigned to events at the time clock
- c. The time clock shall support event override
 - 1) It shall be possible to override the timed event schedule from the face panel of the time clock
- d. The time clock shall support timed event hold
 - 1) It shall be possible to hold a timed event from the face panel of the processor
 - 2) Timed event hold shall meet California Title 24 requirements
- 7. The panel shall receive ESTA DMX512-A control protocol. Addressing shall be set via the user interface button keypad with any circuit patched to any DMX control address
 - a. 2,500V of optical isolation shall be provided between the DMX512 inputs and the control electronics as well as between control and power components
 - b. The breakers shall respond to control changes (DMX or Stations) in less than 25 milliseconds. DMX512 update speed shall be 40Hz
 - c. Setting changes shall be able to be made across all, some, or just one selected breaker in a single action from the face panel
 - d. DMX data loss shall allow for levels/breakers to be held for ever or for a specified time before switching to a lower priority source
 - e. Initial Panel setup
 - 1) The breaker panel shall automatically detect the type of breaker or dimmer installed in each location without need for manual configuration of the physical arrangement
 - 2) Quick rack setup shall be available to apply address settings across all circuits for rack number, DMX Start Address, sACN universe, and sACN start address
 - 3) Emergency Setup Menu shall provide optional delays when emergency is activated or deactivated, and option to turn off non-emergency circuits shall be available. Record function shall allow circuits that are turned on to be added to the emergency setting

E. Electrical

- 1. Breaker Panels shall be available to support power input from:
 - a. 120/208V three phase 4-wire plus ground
 - b. 120/240V single phase 3-wire plus ground
- 2. Conduit Entry:
 - a. Feeders:
 - 1) Top or upper 6" of either side
 - 2) Bottom or lower 6" of either side
 - 3) Feeders shall enter through the top or bottom according to the orientation of the enclosure.
 - 4) Feeder entry shall be nearest to the location of the feeder lugs or main breaker.

- b. Load:
 - 1) Load wiring shall enter through the top or bottom of the enclosure through the surface nearest to the breaker sub panel
 - 2) Load wiring may also enter through left and/or right side provided a low voltage chase is not required through the same area. If class 2 chase is required, a field installable barrier panel shall be provided upon request. The side of the panel where the barrier has been installed shall not permit load wiring
 - c. Low Voltage:
 - 1) Top or upper 6" of either side
 - 2) Bottom or lower 6" of either side
 - 3) For low voltage conduit entry at the breaker end of the cabinet, conduits shall be located at the outer 3" of the top/bottom panel
- 3. Breaker
 - a. Bus connection type: Stab on
 - b. 1, 2, or three poles
 - c. UL489 listed
 - d. 15 amp, 20 amp, or 30 amp
 - e. 22,000 SCCR; 65,000A series rated with main breaker
 - f. High inrush trip curve (matches all Sensor breakers)
 - g. Maintains trip curve through entire thermal range
 - h. Guaranteed not to trip at full load
 - i. Load lugs accept 6-14awg load wiring
 - j. Multi-conductor listed output terminal
 - k. Integral mechanically held air gap relay
 - l. Manual control of relay state using breaker handle w/o power
 - m. Integral current sensing
 - n. Integral position and trip sensing
 - o. Control and status provided by contact pads directly at bottom of the breaker case
 - p. No external wires or connections required for control or feedback
 - q. The breaker shall be capable of switching up to 30A
- 4. The breaker panel shall support a maximum feed size
 - a. 100 Amps at 12 circuits
 - b. 200 Amps at 24 circuits
 - c. 400 Amps at 48 circuits
- 5. Breaker panels shall support main circuit breaker options:
 - a. Main breaker options shall be optional and available for purchase upon request
 - b. Main breakers shall be field installable
 - c. Main breakers shall be available in up to 100 Amps for 12 circuit panels, up to 200 Amps for 24 circuit panels, and up to 400A for 48 circuit panels at 120V
 - d. Series SCCR ratings apply as follows with appropriate main breaker:
 - 1) 22,000A or 64,000 at 120/208V
 - e. Main breakers shall allow the following range of wire sizes:
 - 1) Up to 300kcmil at 100A and 200A
 - 2) Up to 2x250kcmil at 400A
 - f. Main Lug input shall support up to 2x250kcmil
 - g. Breaker panel shall support a 500kcmil main lug option for 48-circuit panels
 - h. Breaker remote switching ratings
 - 1) Mechanical 1,000,000 cycles

- 2) 24A Resistive 100,000 cycles
 - 3) 16A Ballast (HID) 75,000 cycles
 - 4) 15A Electronic (LED) 100,000 cycles
 - 5) 15A Tungsten 45,000 cycles
 - 6) 30FLA; 180 LRA Motor Load 50,000 cycles
 - 7) Tested duty cycle: 12 operations (6 cycles) per minute
 - 8) Decreasing duty cycle significantly increases switch life
 - 9) Isolation: 4000V RMS
 - 10) Current reporting accuracy: 5%
 - 11) Latching state mechanical relay
6. Breaker Panel Accessories
- a. An Ethernet option shall provide advanced control of relays over streaming ACN (sACN) and transmit status, control override, and measured energy usage per branch circuit to a web browser based or central monitoring interface
 - b. A low voltage 0-10V dimming option shall provide up to 24 0-10v control outputs that are linked to relay circuits within the panel. Each output shall support up to 400mA of current sink per output
 - c. A contact input option shall provide 24 dry contact inputs to be linked for direct or group relay control, to activate a preset, or to activate a sequence. Controller software shall allow for normally open maintained, normally closed maintained, or momentary toggle
 - d. A DALI control option shall provide 24 control loops of broadcast DALI control, with each loop controlling up to 64 DALI devices
 - e. A RideThru option shall provide short-term power backup of control electronics by automatically engaging when power is lost, and recharging when normal power is present
 - f. An Isolated Ground option shall provide each circuit in the panel with a ground terminal that is electrically isolated from the equipment ground
 - g. Main Breaker options shall be available as shown in Section E.4
- F. Thermal
1. The panel shall be convection cooled. Panels that require the use of cooling fans shall not be acceptable
 2. The panel shall operate safely in an environment having an ambient temperature between 32°F (0°C) and 104°F (40°C), and humidity between 5-95% (non-condensing).
- G. Provide one (1) 12-circuit intelligent breaker panel with network interface option card, recessed door, and 3-phase normal power tap kit equal to Sensor IQ12 as manufactured by ETC, Inc.

2.2 EMERGENCY LIGHTING TRANSFER SYSTEM

- A. General
1. The Emergency Lighting Transfer System (ELTS) shall provide automatic transfer of branch circuits from normal to emergency power when normal power fails. Each system shall consist of power transfer switches and a control circuitry interconnected to provide complete, automatic protection.
 2. The ELTS shall transfer designated lighting load branch circuits from dimmers or secondary control outputs to a second power source in the event of a loss of power to the dimmer rack, a normal system failure, or activation of fire alarm.
 3. The system shall comply with ANSI / UL1008 Transfer Switch Equipment, ANSI / NFPA 110 Standard for Emergency and Standby Power Systems, and ANSI / NFPA 70 (NEC), including Article 700, 701 and 702 safety standards. Emergency transfer systems that do not comply with the below stated NEC articles and sections shall not be permitted

- a. Satisfies requirements of the National Electrical Code (NFPA 70):
 - 1) Article 700 – Emergency Systems
 - 2) Article 701 – Legally Required Standby Systems
 - 3) Article 702 – Optional Standby Systems
 - 4) Section 518.3(C) – Assembly Occupancies
 - 5) Section 520.7 – Theatres and Similar Locations
 - 6) Section 540.11(C) – Motion Picture Projection Rooms
4. Emergency Transfer equipment shall comply with the US seismic requirements of the International Building Code (IBC) for equipment in the emergency life-safety chain and be approved for seismic applications. Seismic certification shall include installation applications for Roof, Grade, Below Grade, and Intermediate Level installation in the USA with an Ss level of 3.42 and SDS level of 2.28. Emergency transfer equipment that does not meet or exceed the seismic acceptance criteria for non-structural components and systems per the applicable building code or as set forth in the ICC AC-156 shall not be acceptable.
 - a. The following building codes are addressed under this certification.

IBC 2000 – referencing ASCE 7-98 and ICC AC-156
IBC 2003 – referencing ASCE 7-02 and ICC AC-156
IBC 2006 – referencing ASCE 7-05 and ICC AC-156
IBC 2009 – referencing ASCE 7-05 and ICC AC-156
5. The ELTS shall be a self-contained system for up to 24 circuits at 20 amps and available for single or three phase power (120/208V, 120/240V or 277/480V). The unit shall be available with either discrete emergency branch circuit feeds from an external circuit breaker panel (by others) or emergency main feed with built-in branch circuit distribution and over current protection.

B. Transfer Switch

1. The switch shall be a UL 1008 LISTED, electrically operated and mechanically held (maintained) transfer switch.
2. The switch shall be positively locked and unaffected by voltage variations or momentary outages so constant contact pressure is maintained and temperature rise at the contacts is minimized.
3. The switch shall be mechanically interlocked to ensure only one of the two possible positions, either Normal or Emergency.
4. Each switch shall be configured as guaranteed break-before-make
5. Built-in fuses shall provide up to 65000A Short Circuit Current Rating (SCCR) on connected emergency circuits.
6. Built-in fuses class G shall be provided on each output for compliance with NEC Section 700.27 Coordination – larger upstream breakers cannot be tripped by downstream branch circuit faults.
7. Switch contacts shall withstand transfer without welding, with 180° phase displacement between Normal and Emergency power sources, both sources energized and with 80% load.
8. Transfer switch contacts shall be rated for mixed loads, including electric discharge lamps and tungsten filament lamps.
9. Transfer switches shall be rated for 6000 cycles at full tungsten load.

C. Control Circuit

1. The control circuitry shall direct the operation of the transfer switch.
2. User configurable timing delays shall be provided for power transfer between:
 - a. loss of normal power and the transfer to emergency up to 10 seconds.
 - b. restoration of normal power and the transfer from emergency back to normal power

up to 60 seconds.

3. A normally closed dry contact closure fire alarm input shall be provided.
4. Transfer switch shall support connections for up to 5 Remote Stations which can manually switch between normal and emergency power.

D. Operation

1. Transfer to alternate supply will occur when normal supply voltage drops below 80V when used at 120V, or 185V for the A phase and 80V for the B and C phase when used at 277V.
2. A self-supervising isolated signal input shall be provided for connection to the facility fire alarm. The ELTS2 shall automatically transfer the loads to the Emergency power source when the facility fire alarm is activated as part of a normally-closed loop.
3. A key-operated switch shall be provided to manually control the ELTS2. All automatic functions shall override this control. Two indicator lights shall be provided to show the position of the transfer switch.
4. All automatic functions shall override remote control functions. Any combination of open or shorted wiring to remote stations shall not affect automatic functions, or disable the local switch.

E. Remote Stations (Optional)

1. Optional remote control stations shall be available for the ELTS2. Each remote control station shall contain a 3-position key switch. The left and right positions shall be momentary and the switch shall always return to the center position.
2. The faceplate shall be labeled Normal for the left switch position, Emergency for the right switch position and Auto for the center position.
3. The faceplate shall contain two LEDs to confirm transfer switch position.
4. Each remote station shall mount in a standard, two-gang wall box (4" x 4" x 3.5").
5. Remote stations shall not be incorporated into or mounted onto other equipment.
6. All wiring to remote stations shall be by 5-conductor, Class 2 wiring (24V DC). A terminal strip shall be provided for contractor wiring.

F. Enclosure

1. The ELTS2 shall be mounted in a NEMA 1 interior or NEMA 4 watertight type enclosure finished in textured epoxy paint. It shall be equipped with a hinged locking door. Material shall be no less than 14 gauge steel.
2. An enclosure containing up to 24 (twenty-four) 20A circuits shall be 48"H x 30"W x 8.5"D.
3. The enclosure shall provide power distribution and branch circuit protection for all emergency power circuits. Systems requiring external emergency power circuit protection shall not be acceptable.
4. The enclosure shall be separate and independent of all other equipment. In no instance shall the ELTS2 be enclosed in a dimmer rack or in an enclosure containing other equipment.
5. The system shall be provided with an approved overlay mounted on the front of the enclosure, stating, "EMERGENCY LIGHTING TRANSFER SYSTEM".
6. The enclosure shall be provided with an approved label indicating that the system is UL1008 LISTED.

- G. Provide one (1) Emergency Lighting Transfer System equal to ETC ELTS2-1-D-120-06.

2.3 EMERGENCY BYPASS DETECTION KIT

- A. Where required to detect the loss of normal power and trigger special-purpose lighting presets, the detection means shall be the Emergency Bypass Detection Kit (EBDK).
- B. Mechanical

1. The Kit Enclosure shall be a surface mounted, constructed of 16-gauge, formed steel panels with a removable front cover.
2. The Emergency Bypass Detection Kit shall include a 3-pole, 10 amp breaker for local over-current protection and simulation of normal power loss.
 - a. The enclosure shall have a lockable door to allow limited access to the over-current protection breaker
3. All components shall be properly treated and finished.
 - a. Exterior surfaces shall be finished in fine textured, scratch-resistant, powder coat paint
4. The enclosure shall provide discrete high and low voltage wiring compartments with voltage barrier.
5. The dimensions and weight shall not exceed:
 - a. 10.5" H x 14" W x 4.2" D 11 lb.
6. Accessories
 - a. Emergency Bypass Restore Switch (EBDK-SWITCH)
 - 1) The Emergency Bypass Detection Kit shall support an optional switch kit, requiring manual override before allowing the EBDK to return to a normal power state
 - 2) The Restore Switch shall be a single-gang device, fully finished, and supplied with mounting holes.
 - a) The EBDK Switch Kit shall be clearly labeled identifying intended operation
 - b) The Switch shall be labeled Lighting System Restore
 - c) The Switch shall include a red indicator that is illuminated when bypass operation is active
 - 3) The EBDK Switch shall require two 16-gauge wires for connection to the Emergency Bypass Detection Kit.
 - a) Up to two Bypass Restore Switches shall be supported per Emergency bypass Detection it

C. Electrical

1. Emergency Bypass Detection enclosures shall support 100 to 277-volt configurations
 - a. EBDK enclosures shall be field configurable for single-phase, bi-phase, and three-phase operation without the need for additional components.
2. Phase Loss Detection circuitry shall provide 0.5 second delay to prevent nuisance tripping
3. The EBDK shall provide an integrated circuit breaker for over-current protection and simulation of normal power loss
4. The Emergency bypass detection Kit shall support isolated outputs for connection to multiple dimming products simultaneously
 - a. Three isolated contacts shall be provided
 - b. Each contact shall support connection of up to four dimming products.
5. The Emergency Bypass Detection Kit shall be completely pre-wired by the manufacturer. The contractor shall provide input feed and control wiring.
6. All control wire connections shall be terminated via factory provided connectors.
 - a. Factory provided connector shall support 12 to 22-gauge wiring
 - b. Emergency lighting input shall support load shedding

7. The Bypass Detection Kit shall prove a normally-closed input for interface with fire alarm systems.
8. The Bypass Detection Kit shall be UL and cUL Section 924 Listed for interaction with similarly listed dimming and switching panels.

D. Thermal

1. Ambient room temperature: 0-40°C / 32-104°F
2. Ambient humidity: 10-90% non-condensing

E. Provide one (1) emergency bypass detection kit equal to ETC 'Emergency Bypass Detection Kit' with all necessary accessories.

1. Normal power sense for the emergency bypass detection kit shall be provided via 3-phase mains feed tap kit equal to 'IQ TAP' as manufactured by ETC for normal power sense from relay panel 'RP-1,' which serves emergency House lighting circuits.
2. Normal power sense shall be specified by the project Electrical Engineer.

2.4 UL924-LISTED 0-10V CONTROL GATEWAY

A. General

1. The lighting control gateway shall be a microprocessor-based unit specifically designed to provide 0-10V control for lighting systems. The gateway shall permit DMX-512 and Ethernet Data to be received and converted to 0-10V control outputs.
2. Gateways shall communicate over DMX and Ethernet directly with entertainment and architectural lighting control products and other compatible Ethernet interfaces.
3. Connections shall be made between gateways, consoles, architectural systems, and PCs over standard DMX512A and Ethernet distribution systems using 10/100BaseT.
4. The gateway shall support an input for use in Emergency Systems
5. The gateway shall support multiple protocols including:
 - a. ANSI E1.17 Architecture for Control Networks (ACN)
 - b. ANSI E1.31 Streaming ACN (sACN)
 - c. ANSI E1.11 USITT DMX512-A
6. The gateway shall be listed to the following standards:
 - a. UL924 listed for use in emergency systems.
 - b. The gateway shall be tested to UL standards and labeled as ETL Listed.
 - c. The gateway shall be RoHS Compliant (lead-free).
 - d. The gateway shall be CE compliant.
7. The gateway shall have a backlit display for identification (soft-labeling), status reporting and configuration.
 - a. Labeling shall be user configurable using ANSI E1.17 Architecture for Control Network (ACN), or a purpose built software configuration tool.
 - b. The display shall show gateway configuration and indicate the current input and output levels.
 - c. Gateways that do not indicate input and output control level and the presence of valid data signal shall not be acceptable.
8. Each gateway shall have power and network activity indicators on the front of the gateway

B. Processor

1. Maximum delay time from input to output shall not be greater than one packet time (approximately 22 mSec.).

2. A minimum DMX update rate of 40Hz shall be sustained under all conditions unless specifically configured for a slower rate for the sake of compatibility with 3rd party DMX devices.

C. Mechanical

1. The gateway shall be DIN-Rail Mounted on DIN 43880 (35/7.5) rail
 - a. The gateway shall be constructed of an extruded aluminum enclosure that fully encloses all of the control electronics. Gateways that utilize exposed PCB components shall not be acceptable.
 - b. Two wiring connections shall be required for connection to the lighting system
 - 1) Ethernet connection that supports standard Cat5/Cat5e cables, or:
 - 2) DMX input connection using an 8-pin pluggable terminal strip style connector
 - 3) DMX connections shall support Belden 9729 (or equal) cable using rising clamp screw terminals of Belden 1583A (or equal) cable using insulation displacement connectors. Gateways that do not support Cat5/Cat5e cabling for DMX shall not be acceptable.
 - 4) (24) terminal strip style connectors for 0-10V output
 - c. Dimensions shall not be more than 6.65" wide (169mm) x 4.13" (105mm) deep x 1.22" (31mm) high

D. Electrical

1. The gateway shall provide (24) 0-10V outputs.
2. Each supporting voltage source or sink
3. Each output shall have a 50mA maximum current
4. DMX Ports
 - a. DMX Ports shall comply with the requirements of ANSI E1.11 USITT DMX512-A standards.
 - b. DMX input shall be optically-isolated from the gateway electronics.
 - c. DMX output shall be earth-ground referenced.
 - d. DMX Port shall be capable of withstanding fault voltages of up to 250VAC without damage.
5. Power shall be provided by a low-voltage DC power input utilizing an isolated in-line power supply capable of an operating range of between 18-28vDC.
6. The gateway shall have a maximum 18W current
7. The Input for Emergency Systems shall support:
 - a. A dry contact input shall provide triggering of an emergency condition
 - b. A three position switch shall set the input as Normally Open (NO) Normally Closed (NC), or Off

E. Configuration

1. The gateway shall be locally configurable using an integrated display screen and a four button interface.
2. Each DMX gateway shall receive control from up to 512 DMX addresses, within the confines of 63,999 universes.
3. The gateway shall support a configurable start address from 1 to 512 and use consecutive addresses.
4. The gateway shall support three configurable dimming curves with each channel independently assignable. Supported curves shall be linear, mod-square and custom. 0-10V gateways that do not support custom curves shall not be acceptable.

5. Multiple DMX universes may be configured with any length up to 512 total addresses. Any range of DMX input addresses shall support selection and routing to the specified sACN output.
6. Multiple sACN sources may be combined with a priority may be assigned to each source sending data to the gateway
7. All relevant configuration information shall be stored in non-volatile memory at each gateway. The system shall recover from a power outage without requiring reconfiguration. Gateways that do not support non-volatile storage of data routing shall not be accepted.

F. Network

1. Communications physical layer shall comply with IEEE 802.3i for 10BASE-T, 802.3u for 100BASE-TX.
2. All network cabling shall be Category 5 (or better), conforming to TIA-568A/B, and shall be installed by a qualified network installer.
3. ANSI E1.17 Architecture for Control Networks (ACN) and ANSI E1.31 streaming ACN (sACN) shall be supported for level input. Gateways that do not support ANSI E1.31 shall not be acceptable.
4. Gateways shall support have built in priority on a per-universe or per-channel basis. Gateways that do not support prioritized merging of multiple network sources at independent priorities shall not be accepted.

G. Environmental

1. The ambient operating temperature shall be 0° to 40°C (32° to 104°F).
2. The storage temperature shall be -40° to 70°C (-40° to 158°F).
3. The operating humidity shall be 5% - 95% non-condensing.

H. Provide one (1) UL924 listed, DIN-rail mounted 0-10V gateway equal to ETC RSN-LV in 'DIN-2'.

1. The DIN enclosure housing the UL924 0-10V gateway is to be powered from an emergency power circuit to be specified by the project Electrical Engineer.

2.5 DMX EMERGENCY BYPASS CONTROL

A. The DMX Emergency Bypass Control (DEBC) shall trigger special-purpose lighting presets and bypass normal lighting controls during emergency or panic situations.

B. Functional

1. The DMX Emergency Bypass Controller shall be capable of overriding a single universe of ANSI E1.11–2008, USITT DMX512-A control signals from “Normal” to “Bypass” when a trigger signal is detected via a contact closure trigger input.
 - a. The DMX Emergency Bypass Controller shall output to a single DMX output or up to six optically-isolated DMX outputs
 - b. The DMX Emergency Bypass Controller shall poll the bypass trigger input after a power loss and react upon start up.
 - c. The default or recorded preset shall be recalled immediately on restart if the trigger is also applied at restart.
 - d. Controllers that do not support E1.11–2008 compliant DMX communication shall not be acceptable.
2. The DMX Emergency Bypass Controller shall be capable of recording a single DMX preset (snapshot) of 512 channels for recall during “Bypass” mode.
3. The DMX Emergency Bypass Controller (DEBC) shall have internally accessible, labeled DIP switches for configuration of:
 - a. DMX Record Mode
 - 1) All 512 channels (default)

- 2) Selected channels, snapshot
- b. Contact input type
 - 1) Normally open (default)
 - 2) Normally closed
- c. Wait Time for Restore incoming DMX (bypass trigger removed)
 - 1) 0 Seconds (default)
 - 2) 10 Second Wait
 - 3) 30 Second Wait
 - 4) 10 Minute Wait
- 4. The DMX Emergency Bypass Controller shall support a single bypass input using two input modes:
 - a. Bypass triggering shall be supported via a maintained contact input configurable for normally open (N.O.) or normally closed (N.C.) operation
 - b. The contact input shall support +12VDC wet input to provide interface with fire alarm or secondary triggering systems. Bypass controllers that do not support a fire alarm input shall not be acceptable.

C. Mechanical

- 1. The DMX Emergency Bypass Controller (DEBC) enclosure shall be a surface mounted enclosure with a removable cover, constructed of 16-gauge, formed steel with a removable front cover.
 - a. All components shall be properly treated and finished in fine textured, scratch-resistant, powder coat paint.
 - b. DEBC enclosure shall have a minimum of four keyed mounting holes for wall attachment.
 - c. DEBC enclosure shall have a visible label stating the product name, manufacturer name, indicator functions, control functions, ratings and listings.
- 2. The DMX Emergency Bypass Controller (DEBC) enclosure shall provide discrete high and low voltage wiring compartments with voltage barrier.
- 3. The DMX Emergency Bypass Controller (DEBC) shall have a single bi-color LED indicator visible from the exterior of the enclosure.
 - a. LED shall indicate Normal state with a "green" color light
 - 1) Normal state illuminates steady green when Power and DMX are present
 - 2) LED Off indicates Power or DMX are not present
 - b. LED shall indicate Bypass state with a "red" color light
 - 1) Bypass state includes bypass input contact trigger or 'test' active
- 4. The DMX Emergency Bypass Controller (DEBC) shall have a single test button accessible from the front of the enclosure without removing any panels.
 - a. The test button shall immediately trigger bypass state for as long as it is held down, and release the bypass state immediately upon release of the button
 - 1) The test button shall be momentary only
 - 2) The test button shall be recessed to prevent accidental triggering
- 5. The DMX Emergency Bypass Controller (DEBC) shall have a single, internally accessible button for DMX Record (snapshot) with an indicator LED for record action
 - a. The record button shall be momentary only and held for at least 3 seconds before activation to prevent accidental recording

- b. The LED indicator will flash rapidly when record function is active
 - c. The LED indicator will illuminate steady when record function is complete
 - 6. The DMX Emergency Bypass Controller (DEBC) dimensions and weights shall not exceed:
 - a. 9" H x 11" W x 2" D,
 - b. 8lbs (single output); 14.5lbs (multi-output)
- D. Electrical
 - 1. The DMX Emergency Bypass Controller shall be completely internally pre-wired by the manufacturer
 - 2. The contractor shall provide input feed and control wiring to the provided terminals
 - a. DMX Emergency Bypass Controllers (DEBC) shall support 100 to 277 volt input power, 50/60 Hz, 150mA maximum current
 - 3. DEBC shall support labeled terminations for two 24 – 10 AWG solid or stranded power wires
 - 4. DEBC shall support one Grounding Lug for 24-14 AWG solid or stranded ground wire
 - 5. DEBC shall support labeled, socketed termination connections for DMX Input and DMX Output wiring
 - a. Terminations shall support Belden 9729 cable or equivalent
 - 1) DMX Termination kits for Belden 9729 shall be supplied with the controller
 - 2) Optional Termination kits for Belden 1583A (or equivalent Category 5 cable) shall be available from the manufacturer
 - 6. DEBC shall support labeled, socketed termination for the bypass contact input
 - a. Termination shall support two, 30-12 AWG low-voltage wires
 - b. The bypass input shall support a maintained normally open (N.O.) or normally closed (N.C.) dry contact input
 - c. A +12VDC wet contact input shall also be available for interface to fire alarm systems.
 - d. DEBC shall support socketed DMX transceiver chips
 - 1) A spare DMX transceiver chip shall be supplied in a labeled, inactive socket
 - 7. The DMX Emergency Bypass Controller (DEBC) shall internally switch from the normal DMX input (pass through) to the bypass DMX output using electromechanical relays when triggered
 - a. The DEBC shall have non-volatile memory for storage of a single recorded sequence of 512 channels
 - 1) The recorded sequence shall persist through power outages
 - 2) The default sequence shall have all 512 channels at "full" if no sequence is recorded
 - b. The DEBC shall have a DMX baud rate of "Slow" (20 packets per second) for increased compatibility during bypass DMX output
 - 8. The DEBC shall be available in two versions capable of output to a single DMX line or up to six optically-isolated DMX lines.
 - 9. The DMX Emergency Bypass Controller shall be UL and cUL Section 924 LISTED for interaction with similarly listed products.
- E. Thermal
 - 1. Ambient room temperature: 0-40°C / 32-104°F
 - 2. Ambient humidity: 10-95% non-condensing
- F. Provide one (1) 6-output DMX emergency bypass controller equal to 'DEBC-6' as manufactured by ETC, Inc.

1. The DMX emergency bypass controller shall be powered from an emergency power circuit to be specified by the project Electrical Engineer.

2.6 ARCHITECTURAL CONTROL PROCESSOR (ACP)

- A. The Architectural Control Processor (ACP) assembly shall be designed for use in wall mounted control enclosures.
- B. The processor shall utilize microprocessor based, solid state technology to provide multi-scene lighting and building control.
 1. ACP shall support functions such as station programming, macro sequencing, electronic lockout, room combine and astronomical time clock events. ACP station processor shall allow configuration of the control system via the menus. See software section for additional system details.
 2. When used in a dimming enclosure, the ACP shall allow access to dimming control menus including the status screen, dimming configuration screen, backup menu, test menu and configuration menu.
- C. One ACP shall be rated to drive 1024 channels of control, 1024 zones, 64 rooms, 512 presets, 62 button or button/fader stations and 6 Touchscreen Stations.
- D. ACP module electronics shall be convection cooled.
- E. The ACP shall provide front-panel RJ45 jack, Secure Digital (SD) card slot, and Universal Serial Bus (USB) Port for configuration and data exchange.
- F. Architectural Lighting System configuration and program information shall be stored in flash memory, which does not require battery backup.
- G. The ACP shall be contained in a plug-in assembly and require no discrete wiring connections; all wiring shall be terminated into Dimming or Control Enclosure.
 1. The ACP shall support the following communications:
 - a. Echelon LinkPower.
 - b. 10/100BaseTX, auto MDI/MDIX, 802.3af compliant Ethernet networking with TCP/IP, ESTA BSR E1.17 Advanced Control Networks (ACN) and ESTA BSR E1.31 (sACN) Protocols.
 - c. EIA-232 serial protocol.
 - d. ESTA DMX512A, configurable as input or output ports.
 - e. Dry contact closure inputs.
 - f. Dry contact closure outputs, rated at 1A@30VDC.
- H. Provide one (1) architectural control processor equal to the Unison Paradigm P-ACP series control processor as manufactured by Electronic Theatre Controls, Inc.

2.7 CONTROL PROCESSOR ENCLOSURES

- A. Mechanical
 1. The control processor enclosure shall be a surface mounted panel constructed of 18 gauge formed steel panels with a hinged, lockable full-height door containing an integral electrostatic air filter.
 - a. The enclosure door shall have an opening to allow limited access to the control module face panel.
 - b. Enclosures shall be convection cooled without the use of fans.

2. Control processor enclosures shall be sized to accept one architectural control processor (ACP), including options and accessories.
 - a. The Control Enclosure for a single control processor shall support a single Station Power Module (SPM).
3. All enclosure components shall be properly treated and finished.
 - a. Exterior surfaces shall be finished in fine textured, scratch resistant, powder based epoxy paint.
4. Top, bottom, and side knockouts shall facilitate conduit entry.
5. Enclosures shall be designed to allow easy insertion and removal of all control and option modules without the use of tools.
 - a. Supports shall be provided for precise alignment of modules into power and signal connector blocks.
 - b. With modules removed, enclosures shall provide clear front access to all power and control wire terminations
6. Required Accessories
 - a. RideThru Option (RTO)
 - 1) The Control Enclosure shall support an optional, short-term back-up power source for the control electronics.
 - 2) RideThru Option (RTO) provides power for controls electronics during brief power outages or drop outs.
 - 3) The short-term back-up power source shall automatically engage upon the loss of normal power, seamlessly transitioning the supply power for the control electronics power to itself.
 - 4) The short-term back-up power supply shall detect the return of normal power, and seamlessly return the control electronics to normal power.
 - 5) The short-term back-up power source shall support the control electronics for at least 10 seconds.

B. Electrical

1. Control processor enclosures shall be available in 100, 120, 230 and 240 volt, single-phase configurations.
2. Control enclosures shall be completely pre-wired by the manufacturer. The contractor shall provide input and control wiring.
 - a. All control wire connections shall be terminated via factory provided connectors.
3. Control processor enclosures shall be designed to support the following wire terminations:
 - a. AC (single phase)
 - b. Echelon link power
 - c. 24Vdc
 - d. 2x configurable DMX512A (In or Out)
 - e. RS232 Serial In/Out
 - f. Unshielded Twisted Pair (UTP) Category 5 Ethernet
 - g. 4x Contact Closure In
 - h. 4x Contact Closure Out.
4. Station Power Modules
 - a. Station power supply modules shall provide LinkPower for at 63 stations and 1.5A@24VDC of Auxiliary (AUX) power.
 - b. Station power repeater modules shall provide LinkPower for 30 stations

- and 1.5A @ 24VDC of Auxiliary (AUX) power.
- c. Station power module shall support over-current/short protection for LinkPower and Aux. LinkPower shall support fault detection on each leg of the balanced data bus.
- d. Station power supply and repeater modules shall provide support for up to 63 total stations. Additional stations shall be supported with the use of a Network Station Power Supply, expanding the total to 128 stations per processor.

C. Thermal

- 1. Ambient room temperature: 0-40°C / 32-104°F
- 2. Ambient humidity: 10-90% non-condensing

- D. Provide wall-mounted control processor enclosure equal to the Unison Ern2-W-120 as manufactured by Electronic Theatre Controls, Inc.

2.8 STATION POWER MODULES (SPM)

- A. The Station Power Module (SPM) assembly shall be designed for use in the specified control processor enclosure.
- B. The SPM shall convert input power into low-voltage (Class II) power with data line and a secondary auxiliary low-voltage line to energize button, button/fader, touchscreen, and interface devices for multi-scene lighting and building control.
- C. The SPM, in conjunction with a matching Architectural Control Processor (ACP), shall support Echelon LinkPower communications with remote devices, including button, button/fader, touchscreen and interface stations, and shall interoperate with LonMARK-approved third-party devices.
 - 1. The LinkPower network shall utilize polarity-independent, low-voltage Class II twisted pair wiring, type Belden 8471 (unshielded) or Belden 8719 (shielded) or equivalent. One # 14 AWG drain wire will be required for system not using grounded metal conduit.
 - 2. The LinkPower network shall be topology free. Network wiring may be bus, loop, home run, star or any combination of these.
 - 3. Link power wiring shall permit a total wire run of 1640 ft. (500m).
 - a. Repeaters allow an additional wire run of 1640 ft. (500m).
 - b. Dual-repeaters allow two additional wire runs of 1640 ft. (500m).
 - 4. Link power wiring between stations shall not exceed 1313 ft. (400m).
 - 5. The SPM shall support auxiliary power for certain remote devices, including touchscreen and interface stations, as required by the device.
 - a. The auxiliary power network shall utilize polarity-dependent, low-voltage Class II wiring, consisting of two # 16 AWG wires.
 - b. Auxiliary wiring shall permit a total wire run of 1640 ft. (500m).
 - 1) Repeaters allow an additional wire run of 1640 ft. (500m).
 - 2) Dual-repeaters allow two additional wire runs of 1640 ft. (500m).
- c. The SPM shall supply 1.25 amps at 24v DC continuously.
- D. ACP module electronics shall be convection cooled.
- E. Each SPM shall:
 - 1. Supply power for up to 32 button and button/fader stations.
 - a. Repeaters and dual-repeaters allow 30 additional stations, 62 total.
 - 2. Supply auxiliary power for a similar number of interface stations.

3. Shall supply auxiliary power for up to four Touchscreen stations, when a like number of other stations are deducted from the total.
 4. Repeaters and dual-repeaters allow two additional Touchscreens (six total) when a like number of other stations are deducted from the total.
- F. Provide one (1) station power module to support control stations shown on the Drawings, equal to the Unison Paradigm P-SPM Series as manufactured by Electronic Theatre Controls, Inc.

2.9 WALL-MOUNTED NETWORK SWITCH

- A. General
1. The 8-port Installation switch provides Ethernet connectivity for small systems that require basic network connectivity between system devices. The installation switch combines an 8-port PoE network switch with a patch panel in a convenient wall-mount installation box. This provides a simple solution for systems that have multiple dimmer racks, a console and other network devices, without requirements for a full equipment rack.
- B. PHYSICAL
1. Fully enclosed surface-mount box
 2. 16 gauge steel construction
 3. Finished in gray fine-textured powder coat
 4. Conduit knockouts on all four sides
 5. Removable keyed cover for easy access
- C. ELECTRICAL
1. Switch power supply integrated within enclosure
 2. 120VAC, 20A (max) feed required
 3. ETL Listed
- D. ELECTRONICS
1. 8-port PoE switch supplied with enclosure
 2. Includes UTP termination panel and patch cables
 3. Supports up to two fiber connections with optional SFP modules
- E. Provide one (1) wall-mounted network switch with PoE equal to the 8-Port Simple Network Box (SNB-8) as manufactured by Electronic Theatre Controls, Inc.

2.10 TOUCHSCREEN CONTROL STATIONS

- A. General
1. Touchscreen stations shall support fully graphical control pages.
 2. The Touchscreen station shall operate using graphic buttons, faders and other images on at least 30 separate programmable control pages.
 3. Touchscreen stations shall also allow programming of page pass-code, lock out and visibility levels.
- B. Mechanical
1. Touchscreen stations shall consist of a seven inch, backlit liquid crystal display (LCD) with a minimum resolution of 800 by 400 pixels and 12-bit color depth with a touch interface.
 2. Touchscreen bezels shall be constructed of aluminum and shall have no visible means of attachment.
 - a. The bezel shall install and remove without the use of tools.
 - b. The bezel shall provide two working positions for the Touchscreen: service and operating.

3. The Touchscreen shall have a protective overlay over the display.
 - a. The overlay shall reduce wear
 - b. The overlay shall reduce glare
4. Touchscreens shall offer optional hinged locking covers
 - a. Locking covers shall be made from aluminum and be painted to match standard touchscreen color options
 - b. Locking covers shall allow for viewing of system status on the touchscreen through a smoked Lexan window
5. The manufacturer shall provide back boxes for all LCD stations.
 - a. Flush back box for Touchscreens with or without locking covers shall be 7.94" wide x 5.33" high x 3.25" deep
 - b. Surface back box dimensions shall be 8.3" wide x 5.6" high x 2.75" deep
 - c. Surface back box for Touchscreens with locking cover dimensions shall be 10.0" wide x 6.7" high x 2.75" deep

C. Electrical

1. Touchscreens shall be powered entirely by the System network.
2. Touchscreens shall connect to the System using an Ethernet network with Power over Ethernet (PoE) or the Unison control station Echelon® Link power network.
 - a. Ethernet Network
 - 1) Ethernet network shall be 10/100BaseTX, auto MDI/MDIX, 802.3af compliant.
 - 2) Network shall utilize Unshielded Twisted Pair (UTP) Category 5 wiring.
 - b. Echelon® Link power network.
 - 1) Link power shall utilize low-voltage Class II unshielded twisted pair, type Belden 8471 or equivalent, and one #14 ESD drain wire (when not installed in grounded metal conduit).
 - 2) Touchscreen stations shall also require (2) #16 AWG stranded wires for 24Vdc operating power. 24Vdc wiring shall be topology free.
 - 3) Network wiring may be bus, loop, home run, star or any combination of these.
 - 4) Network insulation displacement connectors shall be provided with all stations.

D. Functional

1. System
 - a. The Touchscreen shall support configuration firmware upload from a Paradigm Processor as proxy
 - b. The Touchscreen shall support configuration or firmware upload from local removable media
2. Setup Mode
 - a. There shall be a setup display that is separate from any user-defined configuration
 - b. It shall be possible to view and modify connectivity settings
 - c. It shall be possible to view status information
 - d. It shall be possible to view and modify LCD screen settings
 - e. It shall be possible to perform Touchscreen calibration
 - f. It shall be possible to view and modify audio settings
 - g. The appearance of the setup display shall be standard and not editable
 - h. The setup display may be invoked from within the user-defined configuration and/or physical button on the Touchscreen

- i. There shall be a default protected method to invoke the setup display
- 3. Configurations
 - a. It shall be possible to have multiple configurations stored within an LCD Station
 - b. Only one configuration may be active on the LCD Station
 - c. It shall be possible for Touchscreen Stations connected via the Echelon® Link power network to select a configuration automatically based on the configuration of the physical connection.
 - d. Where multiple configurations are stored there shall be a boot menu to allow selection of a configuration
 - e. Each configuration shall be identified as a different Station within the System
- 4. Operation
 - a. The lighting control system shall be designed to allow control of lighting and associated systems via touchscreen controls. System shall allow the control of presets, sequences, macros and time clock events.
 - 1) System presets shall be programmable via Button, Button/Fader, Touchscreen, or LightDesigner software.
 - a) Presets shall have a discrete fade time, programmable from zero to 84,600 seconds with a resolution of one hundred milliseconds.
 - b) Presets shall be selectable via Touchscreen stations.
 - 2) System macros and sequences shall be programmable via LightDesigner system software.
 - a) Macro and sequence steps shall provide user selectable steps, and allow the application of conditional logic.
 - b) Macro and sequences shall be activated by button, time clock event or LightDesigner software.
 - 3) System time clock events shall be programmable via the Touchscreen, LightDesigner system software, the processor user interface, or the internal web server.
 - a) Time clock events shall be assigned to system day types. Standard day types include: anyway, weekday, weekend, Sunday, Monday, Tuesday, Wednesday, Thursday, Friday and Saturday. System shall support programming of additional custom or special day types.
 - b) Time clock events shall be activated based on sunrise, sunset, time of day or periodic event. System shall automatically compensate for regions using a fully configurable daylight saving time.
 - 4) A Color picker, supporting Hue, Saturation and Brightness (HSB) color selection shall be available for color selection of color changing fixtures and provide visual feedback of the current color produced by the associated fixture.
 - a) The color picker shall be provided with a default layout that requires no user configuration
 - b) The Color Picker shall provide RGB faders in addition to the default HSB color wheel for color selection
 - c) Color picker values shall allow for numerical value input in addition to color wheel and fader control
 - d) The color picker shall be compatible with color mixing systems that use up to seven discrete color control channels
 - b. Touchscreen stations shall be designed to operate standard default or custom system

functions. Components shall operate default functions unless re-assigned via LightDesigner, the Windows-based configuration program.

- 1) Optional button functions include: preset selection, manual mode activation, record mode activation, station lockout, raise, lower, macro activation, and cue light, or room join/separate.
 - 2) Optional fader functions include master control, individual channel control, fade rate control or preset master control.
- c. Touchscreen stations shall allow programming of station and component electronic lockout levels via LightDesigner.
 - d. It shall be possible to adjust LCD contrast and brightness.
 - e. It shall be possible to program the station to dim during periods of inactivity.
- E. System Requirements: Program touch screen control stations as follows:
1. Provide graphical representation of each button/fader entry station listed below, plus a total of twelve (12) End User-recordable snapshots.
 - a. 8-button House Lights control station (7 presets and off);
 - b. 4-button Stage Work Lights control station (on, off, dim-up, and dim-down);
 - c. 4-button Catwalk Work Lights control station (on, off, dim-up, and dim-down).
 2. Coordinate touch screen station programming and presets with End User to meet their specific requirements.
 3. See Section 3.04 'Control System Programming' below for additional requirements.
- F. Provide one (1) surface wall-mounted LCD touchscreen control station at "TS-01" and one (1) surface wall-mounted LCD touchscreen control station with locking cover at "TS-02." Touchscreen stations are to be equal to Unison Paradigm Touchscreen P-LCD series as manufactured by Electronic Theatre Controls, Inc.

2.11 DIGITAL BUTTON AND FADER STATIONS

- A. General
1. The lighting control station shall be a remote station on a LinkConnect network that can recall presets, provide direct zone control, play macros and provide room combine actions for a control system
 2. The station shall consist of a dual function (control/ record) push-button with an integral tri-color backlight for each corresponding button and fader
- B. Mechanical
1. Control stations shall operate using one, two, four, six or eight buttons. A four button with fader station shall also be available
 2. All button stations shall be available with cream, grey, black or white decorator style faceplates
 - a. Manufacturer's standard colors shall conform to the RAL CLASSIC Standard
 3. Stations shall have tri-color backlights for each button and fader
 - a. Indicators shall utilize a configurable color backlight for active status
 - b. Indicators shall utilize a configurable color backlight for inactive status to assist in locating stations in dark environments. Stations that do not support a lit inactive or deactivated state shall not be accepted
 - c. Stations shall support a "backlight off" state of inactive status when required for performances.
 4. All faceplates shall be designed for flush or surface mounting and have no visible means of attachment

5. Station faceplates shall be constructed of ABS plastic and designed based on a standard decorator style faceplate.
6. Buttons shall be indelibly laser marked for each button function
7. Control station electronics shall mount directly behind the faceplate. The entire assembly shall mount into a single gang back box. Back boxes for flush mounted stations shall be industry standard back boxes. The manufacturer shall supply back boxes for surface mounted stations.

C. Electrical

1. Control station wiring shall be LinkConnect control wiring utilizing low-voltage, Class II unshielded twisted pair, type Belden 8471 or equivalent, and one #14 ESD drain wire (when not installed in grounded metal conduit).
2. The station shall operate on class 2 voltage provided by the control system via the LinkConnect network.
3. Station wiring must be topology free. It may be point-to-point, bus, loop, home run or any combination of these.
4. Wiring termination connectors shall be provided with all stations.
5. Control stations shall be UL/ cUL listed and CE marked and meet WEEE Compliance

D. Functional

1. The Control System shall be designed to allow control of lighting and associated systems via Button and Fader controls.
 - a. System presets shall be programmable via LightDesigner configuration software.
 - 1) Presets shall have a discrete fade time, programmable from zero to 1,000 hours with a resolution of one millisecond.
 - b. System macros and sequences shall be programmable via LightDesigner configuration software.
 - 1) Macro and sequence steps shall provide user selectable steps, and allow the application of conditional logic.
 - 2) Macro and sequences shall be activated by button, time clock event or LightDesigner software.
2. Control components shall be designed to operate default or custom system functions. Components shall operate default functions unless re-assigned via LightDesigner, the software-based configuration program.
 - a. Optional button functions include: preset selection, manual mode activation, record mode activation, station lockout, raise, lower, macro activation, or room join/separate.
 - b. Optional fader functions include manual master control, individual zone control, color control fade rate control or preset master control.
3. Stations (Button and Button/Fader) shall allow programming of station and component electronic lockout levels via LightDesigner.

E. Provide programmable button stations equal to Unison Paradigm Inspire series as manufactured by Electronic Theatre Controls, Inc. as follows:

1. Type:
 - a. Three (3) 8-button stations for control of House Lights (7 presets and off);
 - b. Three (3) 4-button stations for control of Stage Work Lights (on, off, dim-up, and dim-down);
 - c. Four (4) 4-button stations for control of Catwalk Work Lights (on, off, dim-up, and dim-down).
2. Engraving: Coordinate with the Owner to provide custom-engraved button labels that reflect their respective functions.

3. Locking Covers: Provide sliding locking cover with smoked polycarbonate window equal to ETC Unison Heritage Locking Cover installed with the key cylinder facing upward (for upward door opening) over all button panels.
4. Provide in finish color specified by Owner.

2.12 CONTROL PLUG-IN STATIONS

A. General

1. The Plug-in Stations shall consist of the appropriate connectors required for the functional intent of the system. These stations shall be available with DMX input or output, Remote Focus Unit, Network, or architectural control connectors. Custom control connectors shall be available.

B. Connector Options

1. The following standard components shall be available for Plug-in Stations:
 - a. 5-Pin male XLR connectors for DMX input
 - b. 5-Pin female XLR connectors for DMX output
 - c. RJ45 connectors for Network connections - Twisted Pair
2. Custom combinations and custom control connections shall be available.

C. Physical

1. Station faceplates shall be .80" aluminum, finished in fine texture, scratch-resistant black powder coat. Silk-screened graphics shall be white.
2. The station panel shall mount into an industry standard back box, depending on size and quantity of connectors. A terminal block shall be supplied for contractor terminations.

D. Provide the following:

1. One (1) dual-Ethernet plug-in station equal to ETC 'ECPB NET-NET' at 'PS-1.'
2. Provide custom-engraved labels reflecting network port identification number.

2.13 DMX ETHERNET GATEWAY – DIN RAIL GATEWAYS

A. General

1. The lighting control gateway shall be a microprocessor-based unit specifically designed to provide DMX-512 control of lighting systems and transport of RDM configuration and status messages. The gateway shall permit DMX-512 data to be encoded, routed over an Ethernet network and decoded back to DMX-512.
2. Gateways shall communicate over Ethernet directly with entertainment and architectural lighting control products and other Ethernet interfaces.
3. Connections shall be made between gateways, consoles, architectural systems, and PCs over standard Ethernet distribution systems using 10/100BaseT.
4. The gateway shall support multiple protocols including:
 - a. ANSI E1.17 Architecture for Control Networks (ACN)
 - b. ANSI E1.31 Streaming ACN (sACN)
 - c. ANSI E1.11 USITT DMX512-A
 - d. ANSI E1.20 Remote Device Management (RDM)
5. The gateway shall be tested to UL standards and labeled ETL Listed.
6. The gateway shall be RoHS Compliant (lead-free).
7. The gateway shall be CE compliant.
8. The gateway shall be UKCA compliant
9. The gateway shall have a graphic OLED display and four buttons for identification (soft-labeling), configuration, status reporting and troubleshooting

- a. Labeling shall be user configurable using ANSI E1.17 Architecture for Control Network (ACN), or a purpose built software configuration tool.
 - b. The OLED display shall show DMX port configuration indication as well as indicate the presence of valid signal.
 - c. Gateways that do not indicate port configuration (input/output) and valid data shall not be acceptable.
 10. Each gateway shall have power and data activity LEDs on the front of the gateway
- B. DMX Ports
1. DMX Ports shall comply with the requirements of ANSI E1.11 USITT DMX512-A standards.
 2. Each DMX port shall be software or locally-configurable for either input or output functionality.
 3. DMX input shall be optically-isolated from the gateway electronics.
 4. DMX Port shall provide at least 500V isolation to ground and the rest of the electronics
 5. Each port shall incorporate one DMX512-A Connection
 6. Network gateways that do not indicate input/ output port configuration or presence of valid data shall not be accepted
- C. Processor
1. Each gateway shall have sufficient processing power to manage up to 63,999 universes (32,767,488 addresses).
 2. Maximum delay time from input to output shall not be greater than one packet time (approximately 22 mSec.).
 3. A minimum DMX update rate of 40Hz shall be sustained under all conditions unless specifically configured for a slower rate for the sake of compatibility with 3rd party DMX devices.
- D. Mechanical
1. The DIN Rail mounted gateways shall be included in an extruded plastic enclosure.
 2. Three variants of gateways shall be available:
 - a. One Port
 - b. Two Port
 - c. Four Port
 3. Two wiring connections shall be required for connection to the lighting system
 - a. Ethernet connection that supports standard Cat5 patch cables
 - b. DMX input or output connection using is terminal strip or IDC-style connector
 4. Optional accessories for rack-mount and pipe applications shall be available from the manufacturer. These accessories shall support installation by an end-user
- E. Power
1. Power for the gateway shall be provided over the Category 5 (or better) cable, utilizing IEEE 802.3af compliant Power over Ethernet (PoE). Power consumption using shall not be greater than 7 watts.
 2. An optional low-voltage DC power input shall be available utilizing an isolated in-line power supply capable of an operating range of 12-24VDC.
- F. Configuration
1. The Gateway must support local or remote configuration.
 2. Each gateway on the network shall be individually configurable using freely available software configuration tools. The primary configuration tool shall be Net3 Concert configuration software running on a network connected PC. The PC shall only be required for configuration and shall not be required for normal operation of the system.

3. Each port of the DMX gateway shall control up to 512 DMX addresses, within the confines of 63,999 universes.
4. The specific DMX data input or output by the gateway shall be freely configurable by the user.
5. Duplicate outputs of DMX lines (DMX splitter) and discrete outputs shall be fully supported.
6. Multiple DMX universes may be configured with any length up to 512 total addresses. Any range of DMX input addresses shall support selection and routing to the specified sACN output.
7. Multiple sACN sources may be combined with a priority may be assigned to each source sending data to the gateway
8. All relevant routing information shall be stored in non-volatile memory at each gateway. The system shall recover from a power outage without requiring the PC to be online. Gateways that do not support non-volatile storage of data routing shall not be accepted.

G. Network

1. Communications physical layer shall comply with IEEE 802.3i for 10BASE-T, 802.3u for 100BASE-TX and 802.3af for Power over Ethernet specifications.
2. All network cabling shall be Category 5 (or better), conforming to TIA-568A/B, and shall be installed by a qualified network installer.
3. Data transport shall utilize the TCP/IP suite of protocols to transfer the DMX data.
4. ANSI E1.17 Architecture for Control Networks (ACN) and streaming ACN (sACN) shall be supported. Gateways that do not support ANSI E1.17 shall not be acceptable.
5. Each DMX gateway shall control up to 512 DMX addresses, per DMX port within the confines of up to 63,999 universes (32,767,488 addresses) using Streaming ACN (sACN).
 - a. Any range of DMX addresses may be selected for each universe.
 - b. Multiple sources shall be supported by prioritized Highest Takes Precedence (HTP with priority). Each source shall support assignment of priority to allow override of default HTP behavior.
 - c. Each DMX port shall support its own universe and start address.
6. Gateways shall have built in DMX merger capability on a universe or channel-by-channel basis.
7. Gateways shall support have built in priority on a per-universe or channel-by-channel basis. Gateways that do not support prioritized merging of multiple network sources at independent priorities shall not be accepted.

H. Environmental

1. The ambient operating temperature shall be 0° to 40°C (32° to 104°F).
2. The storage temperature shall be -40° to 70°C (-40° to 158°F).
3. The operating humidity shall be 5% - 95% non-condensing.

I. Accessories

1. A Universal Power Supply with international plug-set shall be available. Multiple power supplies shall be able to fit in a vertically stacked power strip.
2. ETC Net3 Concert Configuration and monitoring Software

J. Provide one (1) 4-port DIN-rail mount DMX gateways with all necessary mounting hardware, accessories, and associated software equal to ETC Response Mk2 DIN rail DMX Gateway in 'DIN-1'.

2.14 DMX ETHERNET GATEWAY – ONE PORT

A. General

1. The lighting control gateway shall be a microprocessor-based unit specifically designed to provide DMX-512 control of lighting systems and transport of RDM configuration and status

messages. The gateway shall permit DMX-512 data to be encoded, routed over an Ethernet network and decoded back to DMX-512.

2. Gateways shall communicate over Ethernet directly with entertainment and architectural lighting control products and other Ethernet interfaces.
3. Connections shall be made between gateways, consoles, architectural systems, and PCs over standard Ethernet distribution systems using 10/100BaseT.
4. The gateway shall support multiple protocols including:
 - a. ANSI E1.17 Architecture for Control Networks (ACN)
 - b. ANSI E1.31 Streaming ACN (sACN)
 - c. ANSI E1.11 USITT DMX512-A
 - d. ANSI E1.20 Remote Device Management (RDM)
5. The gateway shall be tested to UL standards and labeled ETL Listed.
6. The gateway shall be RoHS Compliant (lead-free).
7. The gateway shall be CE compliant.
8. The gateway shall be UKCA compliant.
9. The gateway shall have a backlit OLED display and four buttons for identification (soft-labeling), configuration, status reporting and troubleshooting
 - a. Labeling shall be user configurable using ANSI E1.17 Architecture for Control Network (ACN), or a purpose built software configuration tool.
 - b. The OLED display shall show DMX port configuration indication as well as indicate the presence of valid signal.
 - c. Gateways that do not indicate port configuration (input/output) and valid data shall not be acceptable.
10. Each gateway shall have LED indicators for Power and network activity

B. DMX Ports

1. The DMX Port shall comply with the requirements of ANSI E1.11 USITT DMX512-A standards.
2. The DMX port shall be software-configurable for either input or output functionality.
3. DMX input shall be optically-isolated from the gateway electronics.
4. DMX port shall provide at least 500V isolation to ground and the rest of the electronics
5. The DMX port shall incorporate one DMX512-A Connection
 - a. Gateways shall be available with the following connection options: 5-pin male XLR, 5-pin female XLR, or Ethercon RJ-45, for DMX wiring.
6. Network gateways that do not indicate input/ output port configuration or indication of valid data shall not be accepted

C. Processor

1. Each gateway shall have sufficient processing power to manage up to 63,999 universes (32,767,488 addresses).
2. Maximum delay time from input to output shall not be greater than one packet time (approximately 22 mSec.).
3. A minimum DMX update rate of 40Hz shall be sustained under all conditions unless specifically configured for a slower rate for the sake of compatibility with 3rd party DMX devices.

D. Mechanical

1. The gateway shall be available in two versions
 - a. Wall-mount gateway

- 1) The gateway faceplate shall be constructed of injection molded plastic and be formed for use with any standard Decorator style faceplate
 - 2) A color matched faceplate shall be provided with the gateway
 - 3) Gateways shall be available in four standard colors
 - a) Cream (RAL 9001)
 - b) Gray (RAL 7001)
 - c) Black (RAL 9004)
 - d) Signal White (RAL 9003)
 - 4) The gateway shall support flush mounting using a standard RACO 1-gang, deep back box or equivalent.
 - a) Surface mounting shall also be supported using a manufacturer supplied back box.
- b. Portable gateway
- 1) The portable gateway shall include a complete enclosure finished in a black fine texture powder coat paint
 - 2) Wiring connections shall be required for connection to the lighting system
 - a) Ethernet connection that supports standard Cat5 patch cables or Ethercon cables. Gateways that do not support the use of Ethercon cables shall not be accepted
 - b) DMX input or output connections using is 5-pin XLR or RJ45 Ethercon style connector
 - c) Optional low-voltage DC power input connection

E. Power

1. Power for the gateway shall be provided over the Category 5 (or better) cable, utilizing IEEE 802.3af compliant Power over Ethernet (PoE). Power consumption using shall not be greater than 4 watts.
2. An optional 12-24vDC power input shall be available for all wall-mount gateways.

F. Configuration

1. The Gateway must support local or remote configuration.
2. Each Gateway on the network shall be individually configurable using freely available software configuration tools. The primary configuration tool shall be Net3 Concert configuration software running on a network connected computer. The computer shall only be required for configuration, and shall not be required for normal operation of the system.
3. Each DMX gateway shall control up to 512 DMX addresses, within the confines of 63,999 universes.
4. The specific DMX data input or output by the gateway shall be freely configurable by the user.
5. Multiple DMX universes may be configured with any length up to 512 total addresses. Any range of DMX input addresses shall support selection and routing to the specified sACN output.
6. Multiple sACN sources may be combined with a priority may be assigned to each source sending data to the gateway.
7. All relevant routing information shall be stored in non-volatile memory at each gateway. The system shall recover from a power outage without requiring the configuration PC to be online. Gateways that do not support non-volatile storage of data routing shall not be accepted.

G. Network

1. Communications physical layer shall comply with IEEE 802.3i for 10BASE-T, 802.3u for 100BASE-TX and 802.3af for Power over Ethernet specifications.
2. All network cabling shall be Category 5 (or better), conforming to TIA-568A/B, and shall be installed by a qualified network installer.
3. Data transport shall utilize the TCP/IP suite of protocols to transfer the DMX data.
4. ANSI E1.17 Architecture for Control Networks (ACN) and ANSI E1.31 streaming ACN (sACN) shall be supported. Gateways that do not support ANSI E1.17 shall not be acceptable.
5. Switches shall comply with power-over-Ethernet IEEE802.3af, unless a separate in-line power supply is provided.
6. Each DMX gateway shall control up to 512 DMX addresses, per DMX port within the confines of up to 63,999 universes (32,767,488 addresses) using Streaming ACN (sACN).
 - a. Any range of DMX addresses may be selected for each universe.
 - b. Multiple sources shall be supported by prioritized Highest Takes Precedence (HTP with priority). Each source shall support assignment of priority to allow override of default HTP behavior.
 - c. Each DMX port shall support its own universe and start address.
7. Gateways shall support built in priority on a per-universe or channel-by-channel basis. Gateways that do not support prioritized merging of multiple network sources at independent channel priorities shall not be accepted.

H. Environmental

1. The ambient operating temperature shall be 0° to 40°C (32° to 104°F).
2. The storage temperature shall be -40° to 70°C (-40° to 158°F).
3. The operating humidity shall be 5% - 95% non-condensing.

I. Accessories

1. Hanging bracket kit shall allow gateway to be mounted using C-Clamp to U-bolt Hardware.
2. ETC Net3 Concert Configuration and monitoring Software

J. Provide one (1) portable one-port DMX gateways with all necessary mounting hardware, accessories, and associated software equal to ETC Response Mk2 model 'RSN-DMX1-I-P-4' in the Booth adjacent to 'PS-1'.

1. Coordinate installation location with JRT staff and mount where directed.
2. Provide cabling required to interface the gateway with the new lighting system and the Owner's existing lighting board, with additional slack to permit some movement for servicing.

PART 3 EXECUTION

3.1 GENERAL

- A. Install equipment in accordance with the approved Shop Drawings, Manufacturer's instructions, and referenced quality standards as indicated herein.
- B. Inspection: Prior to installation, carefully inspect the installed Work of other Trades and verify it is complete to the point where the lighting control systems equipment can be installed in complete accordance with the original design and the approved Shop Drawings. Ensure that all painting, wet, and dust-producing Work is completed. Verify the supporting structures for lighting equipment are acceptable and that no obstructions are present that would preclude installing the devices. In the event of discrepancy, immediately notify the Engineer in writing.
 1. Verify that job conditions are ready to receive work of this section. Notify Engineer of any existing conditions, measurements, quantities, and other data which will adversely affect execution, fit, and/or safe and proper operating clearances. Identify conditions detrimental

to safe or timely completion. Beginning of execution will constitute acceptance of existing conditions.

2. Environmental Requirements:

- a. Obtain approval of Owner before performing operations that generate contaminants.

3. Field Measurements:

- a. Verify actual support dimensions and layout for Catwalk equipment prior to the fabrication and installation of equipment.

4. Trade Coordination:

- a. Coordinate location and routing of conduit to support new lighting systems equipment.

C. Installation Requirements: Install lighting control systems equipment in accordance with the general provisions listed below.

1. Prior to installing the lighting control systems equipment, confirm with the Owner any special installation or equipment adjustments that are needed. The Contractor shall comply with Owner installation and adjustment requests.
2. Provide incidental materials, hardware, cables, conduit, back boxes, connection plates, terminating elements, and other accessories needed for system installation, even if not expressly specified or shown on the Drawings. Coordinate location, installation, and special requirements for these devices with the Owner.
3. Furnish all labor, materials, and equipment to install new lighting control systems equipment as shown on the Drawings and described in these Specifications.
4. Position all items accurately as indicated on the drawing(s) true, plumb and level.
5. Note any deviations required to adjust for field obstructions and report to appropriate party to incorporate changes on as-built drawings.
6. Coordinate work with trades performing adjoining work.
7. Install lighting equipment and controls where shown, in accordance with manufacturer's written instructions and with recognized industry practice to ensure that lighting equipment complies with applicable requirements of NEC and UL standards and with the applicable portions of NECA's "Standard of Installation" and Trade Standards specified herein.
8. Adjust, configure, and program lighting systems equipment to provide performance objectives as described in these Specifications. See Electrical Drawings, and coordinate House lighting requirements with the Electrical Drawings.
9. Perform commissioning tests on the installed lighting systems. The Installing Contractor is responsible for configuring, programming, and commissioning the House lighting fixtures to meet the requirements of the Owner.
10. Provide instruction and training sessions to Owner personnel on the operation of the lighting control systems.
11. Provide four (4) site visits during the Warranty period to reprogram or reconfigure: network devices to include network switches; lighting control system devices to include processors and control panels; lighting console and lighting fixtures; and other devices as required. These site visits shall include services to provide changes to lighting system operational features as desired by the Owner.

3.2 PREPARATION

- A. Surface Preparation: Remove from surfaces to receive theater and stage equipment all construction debris, dust, dirt, and other potential contaminants prior to installation. Surfaces shall be smooth, level, and have final color coat paint.
- B. Conduit: Verify the conduit system is adequate for the lighting and/or rigging system(s) cables and their specified functions which have been installed by Others. Notify Architect of discrepancies or missing conduit.

- C. Cutting: Carefully cut walls, ceilings, casework, or furniture to receive anchoring devices, safety ties, wall boxes, or other devices specified herein. Coordinate with Architect before cutting casework or furniture.
- D. Protection: Protect floor and wall surfaces, windows, doors, furniture, and casework with covers or tarps to prevent damage when installing the lighting and rigging systems.

3.3 CONTROL SYSTEM PROGRAMMING

- A. Install and program lighting system software, touch screens, and control processors until the Owner's requirements have been met.
 - 1. Confirm any applicable Auditorium house lighting requirements as per the sequence of operations on the Electrical Drawings and other Division 26 Specifications are incorporated into lighting system programming.
 - 2. Meet with the Owner to determine programming requirements and preferences for the lighting system.
 - a. The Contractor is to lead the meeting with an understanding of the designed lighting system capabilities and project requirements, to describe these capabilities and project requirements to the End User and HCPSS, and to ask questions necessary to obtain the information necessary to program the new lighting system.
 - b. Take information obtained from the meeting and develop a lighting system program that meets all parties' requirements.
 - 3. Program the Auditorium architectural control processor (ACP) to provide time of day schedules and presets as requested by the Owner and School Staff.
 - 4. Touch Screen:
 - a. The touch screen shall provide for full control of House lighting and limited control of performance lighting fixtures for authorized personnel.
 - b. Configure the touch screen to provide for the following capabilities:
 - 1) Provide an interface showing House lighting control stations with the same presets mapped to each respective button. Provide independent dimming override of each lighting zone and a 'master' fader for dimming control of all zones simultaneously while maintaining relative illuminance between zones:
 - 2) Program performance/theatrical lighting presets in coordination with JRT staff, with the ability to override independent dimming control of grouped theatrical fixtures and/or a few important theatrical fixtures (i.e., lectern spots). Examples of performance presets may include:
 - a) Full Stage wash (tungsten white, 3200K);
 - b) Panel Discussion wash (white as above, only along the Stage apron);
 - c) Presentation Spot Left (only fixtures on the lectern at Stage left);
 - d) Presentation Spot Right (only fixtures on the lectern at Stage right).
 - 3) In addition to the above presets, provide presets that combine House lighting and performance/theatrical lighting as needed, as directed by the Owner and End User:
 - a) For example, a 'Lecture' lighting preset may have House lights at 25% or 50% for note-taking with theatrical fixtures on the lectern illuminated.
 - 4) The touch screen provides authorized End Users the ability to record custom lighting scenes (House lights and performance/theatrical fixtures) from the theatrical lighting board.
 - 5) Configure the touch screen to allow only authorized users to prevent control of House lights from architectural controls during performances, when the theatrical lighting board shall have exclusive control.

- a) Coordinate whether this “lockout” mode is desired by the End User; the lighting system should be configured to give priority to the theatrical lighting board when it is connected and to automatically lockout architectural button/fader stations.
5. House Lighting Control Button Stations:
 - a. Program 8-button control stations provide the same House lighting presets as the existing House lighting system presets with any Owner-requested changes. Note “On” recalls last used House lighting scene. Existing House lighting presets include the following:
 - 1) A – All On
 - 2) B – House Lights
 - 3) C – Backstage Blue Wing Lights and Front Work Lights
 - 4) D – House at 50%
 - 5) E – Sconces at 50%
 - 6) F – House at 50%
 - 7) G – Backstage Blue Wing Lights Only
 - 8) OFF – All Off
 - b. Coordinate lighting zones to be controlled by respective button/fader stations with Electrical Drawings.
6. Work Light Control Button Stations:
 - a. Program 4-button control stations as described below, and provide engraving as shown on the Drawings. Note “On” recalls last used illuminance level.
 - 1) ON
 - 2) Dims up
 - 3) Dims down
 - 4) OFF
 - b. Coordinate lighting zones to be controlled by respective button/fader stations with Electrical Drawings.
- B. Explain configuration options for the existing lighting console to the End User and incorporate their preferences into the lighting system setup.
- C. Provide backup copies of completed software configuration files (for all applicable devices) and lighting system programming for the Owner’s records. Note site licenses will not be required.
- D. Provide two (2) site visits by factory-authorized field service technician for programming of lighting systems.
 1. The first site visit shall be scheduled prior to occupancy for the purpose of initial programming of systems.
 - a. Coordinate functional and aesthetic requirements of the lighting control system with the Owner to be implemented on touch screens.
 - b. Implement preliminary programming to meet all functional requirements of the Owner.
 2. The second site visit shall be scheduled after occupancy for the purposes of refining the functional and/or aesthetic features programmed into the lighting systems.
 3. Further refinements or changes to lighting system programming shall be made during site visits provided as part of the Warranty.

3.4 INSPECTION

- A. General: The Engineer shall inspect the lighting systems for proper installation. Inspection shall be scheduled a minimum of seven (7) days in advance of project closeout.
 1. Perform tests in the presence of the Engineer using equipment provided by the Contractor.

2. Inspection will be made by the Engineer, following load testing, and after receiving written notification from the Contractor that installation is complete.
 3. At the time of the inspection the Contractor shall furnish sufficient workers to operate equipment and to perform such adjustments and tests as may be required by the Engineer. Equipment that fails to meet with the specifications shall be repaired or replaced with suitable equipment and the inspection shall be rescheduled under the same conditions previously specified.
 4. Demonstrate the operational and functional features of the lighting systems in all possible modes of operation.
- B. Punch List: The Engineer shall issue a written list to the Contractor identifying items relating to the lighting systems installation or performance that require correction. The Contractor shall be given fifteen (15) days to correct these items at no additional cost to the Owner.
- C. Defective Work: Remove and replace defective or soiled Work with new materials, including mounting hardware and equipment that is unacceptable.
- D. Final Inspection: The Contractor shall notify the Engineer upon completion of the lighting system corrections and schedule a final inspection with the Engineer or Owner.

3.5 DOCUMENTATION AND OWNER TRAINING

- A. General: Provide system documentation and training sessions to the Owner on the lighting systems. Schedule training with Owner with at least seven (7) days notice.
- B. Operation Manuals: Prepare and deliver complete Operation Manuals to the Owner no less than fourteen (14) days prior to the Owner training sessions.
- C. As-Built Drawings: Prepare and deliver "as built" drawings and other documentation to Owner illustrating changes to the lighting systems installation that deviate from the originally designed lighting systems.
- D. Training Sessions: Provide training sessions to Owner personnel after the lighting systems have been installed, fully programmed, and configured, and are in proper operating condition.
1. Use Operation Manuals in the lighting system training sessions. Provide copies of these documents to participants for use in the instruction.
 2. A minimum of two (2) training sessions shall be provided, each at least four (4) hours in duration, and shall include an overview of the lighting systems features and functions, startup and shutdown, troubleshooting, servicing, and preventive maintenance. Schedule separate training sessions to accommodate:
 - a. General Training Sessions: End User (School) staff schedules.
 - b. Maintenance Staff Training Sessions: HCPSS maintenance staff schedules.
 3. Demonstrate the lighting systems in all operating modes and functions after conclusion of the training sessions.

3.6 CLEANING AND PROTECTION

- A. Work Area: Upon completion of the Work, remove from the building site all debris, unused materials, equipment, and leave the work area in a clean, acceptable condition.
- B. Final Cleaning: Clean and remove dust, dirt, fingerprints, and other contaminants from lighting control systems equipment prior to final acceptance by the Owner.
- C. Protective Coverings: Provide protective plastic wrapping on equipment racks and any other equipment if additional Work is to occur in the area that might soil or damage the equipment.

Remove such wrapping prior to Substantial Completion.

- D. Repair incidental damage to walls, ceilings, and floors resulting from the lighting control systems equipment installation to the satisfaction of the Owner.

3.7 ADJUSTMENTS AND SERVICING

- A. Service Agreement: As part of the Warranty the Contractor shall visit the site four (4) times to maintain, adjust, and reprogram operational features of the lighting control systems equipment as requested by the Owner.

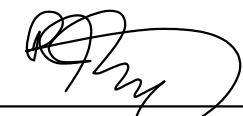
END OF SECTION

DIVISION 29

Jim Rouse Theatre for the Performing Arts
Theatrical House Lighting Controls
Wilde Lake High School
5460 Trumpeter Road; Columbia, Maryland 21044
Howard County Public School System

ELECTRICAL
JAMES POSEY ASSOCIATES, INC.
11155 RED RUN BOULEVARD, SUITE 310
BALTIMORE, MD 21117
410.265.6100

LIGHTING CONTROL SYSTEMS
ACOUSTICAL DESIGN COLLABORATIVE LTD.
606 BOSLEY AVENUE
TOWSON, MD 21204
410.821.5930

PROFESSIONAL CERTIFICATION
These contract documents for the project were prepared under my supervision and to the best of my knowledge, information, and belief, they comply with the relevant building codes of the State of Maryland.
 (Date) 04/20/22
Maryland Professional Engineer Registration No. 24861

JIM ROUSE THEATRE FOR THE PERFORMING ARTS
THEATRICAL HOUSE LIGHTING CONTROLS
WILDE LAKE HIGH SCHOOL
5460 TRUMPETER ROAD, COLUMBIA, MARYLAND 21044
HOWARD COUNTY PUBLIC SCHOOL SYSTEM

 James Posey Associates
Engineering Your Vision
Mechanical & Electrical Consulting Engineers
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Baltimore, Maryland 21117
tel 410-265-6100
jamesposey.com

VICINITY PLAN



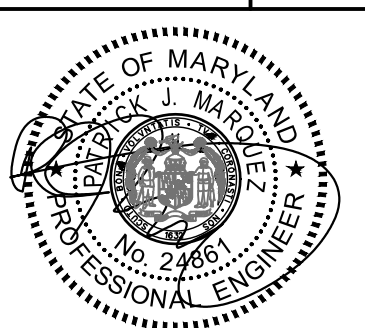
DRAWING INDEX

- COVER SHEET
T-001 TITLE SHEET
- ELECTRICAL
E-001 ELECTRICAL SYMBOLS LIST & LIGHTING FIXTURE SCHEDULE
ED-101 FLOOR PLAN - UNDER BALCONY AND STAGE LEVEL - DEMOLITION
ED-102 FLOOR PLAN - BALCONY AND CATWALK LEVEL - DEMOLITION
E-101 FLOOR PLAN - UNDER BALCONY AND STAGE LEVEL
E-102 FLOOR PLAN - BALCONY AND CATWALK LEVEL
- THEATRICAL HOUSE LIGHTING CONTROLS
L-001 LIGHTING SYSTEMS COVER SHEET
LD-101 FLOOR PLANS - DEMOLITION
LD-102 FLOOR PLANS - DEMOLITION
L-101 FLOOR PLANS - NEW WORK
L-102 FLOOR PLANS - NEW WORK
L-201 AUDITORIUM LIGHTING SYSTEM - NEW WORK

APPLICABLE CODES AND STANDARDS

INTERNATIONAL BUILDING CODE (IBC), 2021 EDITION
LIFE SAFETY CODE (NFPA 101), 2021 EDITION
MARYLAND OCCUPATIONAL SAFETY AND HEALTH PROGRAM ACT (MOSH ACT)
NATIONAL ELECTRICAL CODE (NFPA 70) WITH LOCAL AMENDMENTS, 2020 EDITION
NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA) STANDARDS
NATIONAL FIRE ALARM AND SIGNALING CODE (NFPA 72), 2019 EDITION

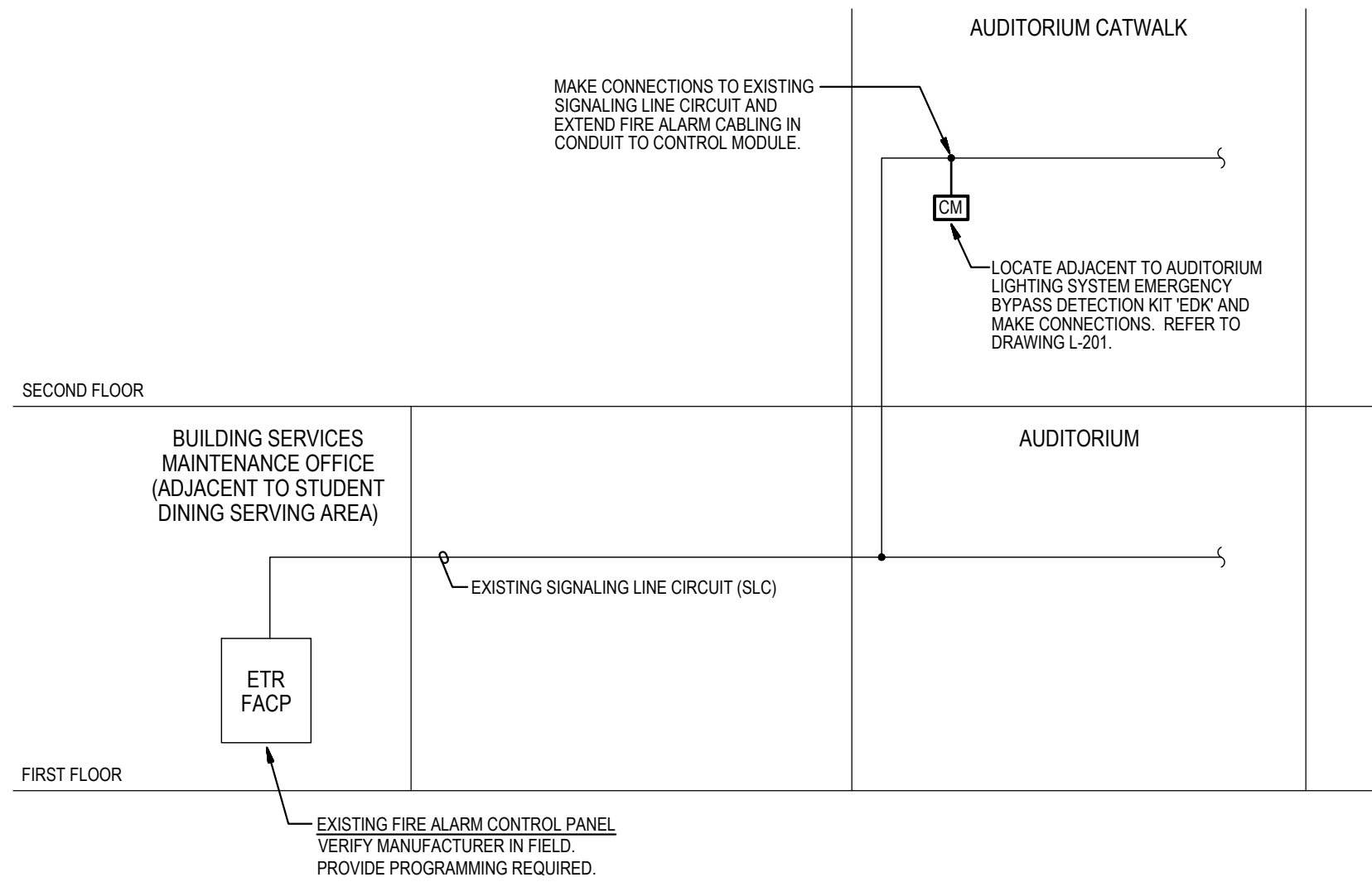
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Checked EMK	
Approved PJM	
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Project No. 7591-22	
Date 04/20/2022	

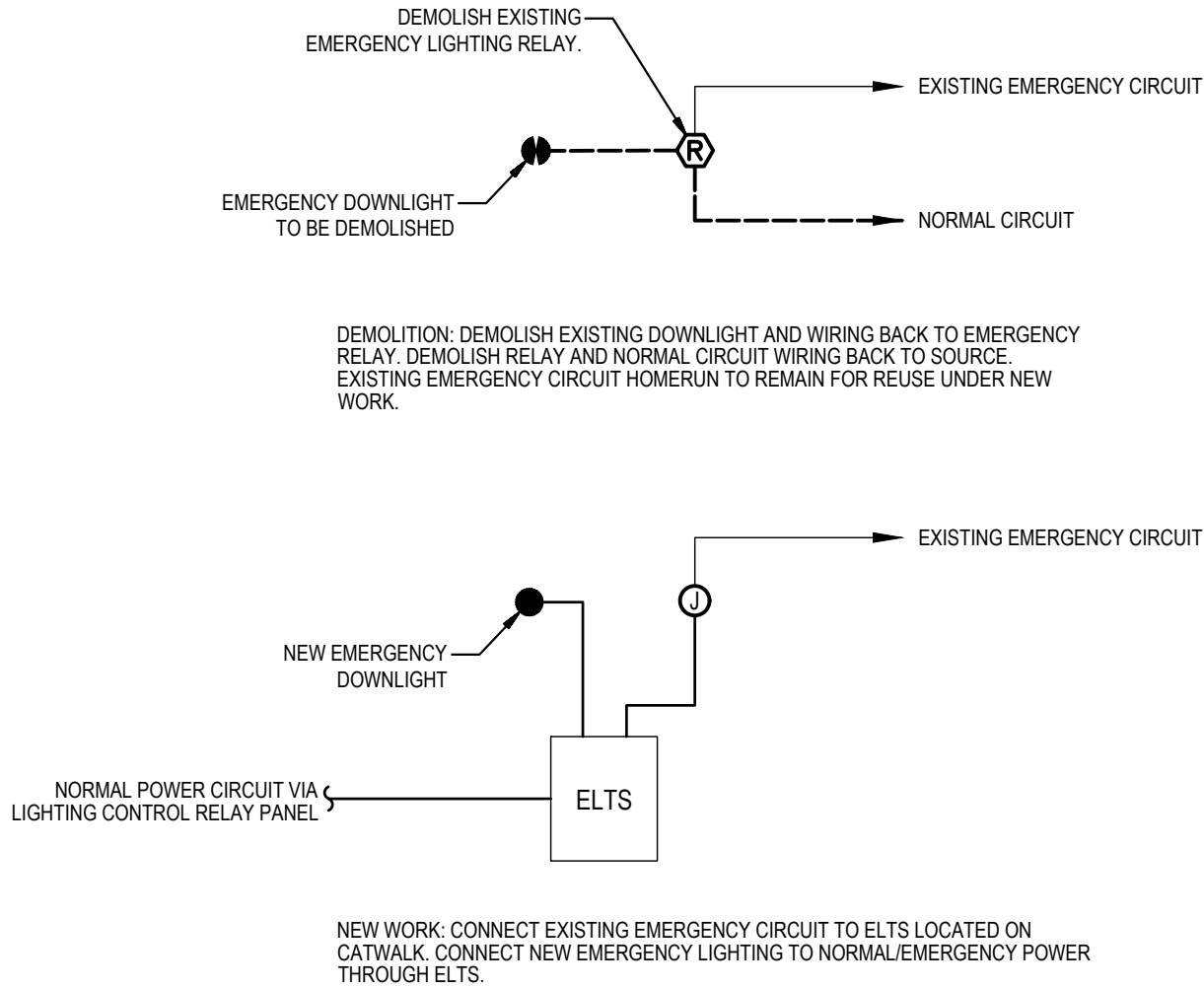
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TITLE SHEET

Sheet No:
T-001

LIGHTING FIXTURE SCHEDULE										
TYPE	DESCRIPTION	LAMP	DESIGN CRITERIA	MINIMUM EFFICACY	BASIS-OF-DESIGN		LISTED EQUALS (NOTE A)	VOLT	MOUNTING	NOTES
					MANUFACTURER	CATALOG NO.	MANUFACTURERS			
BB	LED SUSPENDED STAGE WORK LIGHT. 24" LENGTH, SYMMETRICAL REFLECTOR, BLACK FINISH, NOMINAL 3500 LUMEN OUTPUT. 3000K CCT. 0-10V DIMMABLE.	LED	3500	95 LMW	LITHONIA (ZL1D SERIES)	ZL1D-L24-SMR-3500LM-FST-MVOLT-30K-80CRI-MB-ZACVHM100	----	120	SUSPENDED	1
TA	LED SUSPENDED 6" CYLINDER, NOMINAL 4000 LUMEN OUTPUT. 3000K CCT. DMX DIMMABLE TO <1%. BLACK FINISH.	LED	4000	100 LMW	GOTHAM (EVO SERIES)	EVO6CC-30/40-AR-ND-LSS-MVOLT-EDXB-SGBCC-CCAN-C180-DBL	H.E. WILLIAMS 6CR SERIES	120	SUSPENDED	--
TC	6" LED RECESSED DOWNLIGHT. REMODEL HOUSING. 1700 LUMEN OUTPUT. 3000K CCT. 0-10V DIMMABLE TO <1%.	LED	1700	115 LMW	INDY (LRM6 SERIES)	LRM6-17LM-30K-120-G4-80CRI-EZB-P-CSS	H.E. WILLIAMS 6DR SERIES	120	RECESSED	2
TE	LED WALL SCONCE. MATTE WHITE ACRYLIC LENS. CLOSED TOP AND BOTTOM. 3000K CCT. 0-10V DIMMABLE TO 1%.	LED	1300	85 LMW	VISA (COLONNADE SERIES)	CB3552-L30K-H-MVOLT-XX-TCBC	----	120	WALL SURFACE	3
TF	6" LED RECESSED WALL WASH DOWNLIGHT. REMODEL HOUSING. 1700 LUMEN OUTPUT. 3000K CCT. 0-10V DIMMABLE TO <1%.	LED	1700	115 LMW	INDY (LRM6 SERIES)	LRM6-17LM-30K-120-G4-80CRI-EZB-W-CSS	H.E. WILLIAMS 8DR SERIES	120	RECESSED	2
TG	BLUE WALL-MOUNTED AISLE LIGHT. BLACK FINISH LOUVERED FACE. LED RETROFIT FOR EXISTING FIXTURE.	LED			COLE LIGHTING (2159 SERIES)	L2159W-DIM-BLK-BLU WIRED CHANNELS/ FACE-PLATES ONLY	N/A	120	WALL RECESSED	4
TH	LED WALL MOUNTED LED VAPORTITE CATWALK WORK LIGHT. 3000K CCT	LED	1785	85 LMW	WESTGATE (VTU SERIES)	VTU-20W-30K	----	120	SURFACE COLUMN-MOUNTED JUNCTION BOX	--
TJ	BLUE WALL-MOUNTED AISLE LIGHT. BLACK FINISH LOUVERED FACE. LED RETROFIT FOR EXISTING FIXTURE.	LED			COLE LIGHTING (157 SERIES)	L157W-DIM-BLK-BLU WIRED CHANNELS/ FACE-PLATES ONLY	N/A	120	WALL RECESSED	4
TL	BLUE WALL-MOUNTED AISLE LIGHT. BLACK FINISH LOUVERED FACE. LED RETROFIT FOR EXISTING FIXTURE.	LED			COLE LIGHTING (153 SERIES)	L153W-DIM-BLK-BLU WIRED CHANNELS/ FACE-PLATES ONLY	N/A	120	WALL RECESSED	4
U	8" LED RECESSED DOWNLIGHT. REMODEL HOUSING. 2300 LUMEN OUTPUT. 3000K CCT. BLACK FINISH AND BAFFLE. 0-10V DIMMABLE TO 1%.	LED	2300	105 LMW	INDY (LRM8 SERIES)	LRM8-23LM-30K-MVOLT-G4-80-GZ1-BAF-BL	H.E. WILLIAMS 8DR SERIES	120	RECESSED	5
WW	CATWALK-MOUNTED STATIC BLUE WORK LIGHT. DIMMABLE TO 0.1%.	LED	800	40 LMW	CALI (ALUMLEDS SERIES)	ALS800T-SF-BK-B-8W-HO-10V-.1%-BF-DRY-UN-8'0"	----	120	RECESSED	--
<p>GENERAL NOTES:</p> <p>A. LISTED EQUALS: MANUFACTURERS FOUND TO OFFER PRODUCTS SIMILAR TO THE BASIS-OF-DESIGN PRODUCT, INCLUDING PERFORMANCE, APPEARANCE, AND QUALITY. LISTED EQUALS MUST COMPLY WITH MINIMUM PERFORMANCE CRITERIA LISTED. ADDITIONAL DOCUMENTATION AND CALCULATIONS DEMONSTRATING COMPLIANCE SHOULD BE MADE AVAILABLE UPON REQUEST.</p> <p>B. LIGHTING FIXTURES SHALL BE PROVIDED WITH 3000K COLOR TEMPERATURE, WITHIN +/- 100K, AND WITHIN THREE MACADAM ELLIPSES. CRI SHALL BE 80 OR GREATER, UNLESS OTHERWISE NOTED IN SCHEDULE ABOVE.</p> <p><u>SPECIFIC NOTES:</u></p> <p>1. MOUNTING ELEVATION VARIES. COORDINATE ADJUSTABLE MOUNTING LENGTH IN FIELD.</p> <p>2. MOUNT IN EXISTING OPENING FOR 6" RECESSED DOWNLIGHT.</p> <p>3. MOUNT TO EXISTING IN-WALL JUNCTION BOX.</p> <p>4. MOUNT RETROFIT FIXTURE AND FACEPLATES ON EXISTING BACK BOX. NO SUBSTITUTIONS ACCEPTED.</p> <p>4. MOUNT IN EXISTING OPENING FOR 8" RECESSED DOWNLIGHT.</p>										



1
E-001
DIAGRAM
PART FIRE DETECTION AND ALARM SYSTEM
NOT TO SCALE



2
E-001
DIAGRAM
EMERGENCY LIGHTING DIAGRAM
NOT TO SCALE

ELECTRICAL SYMBOLS AND ABBREVIATIONS	
GENERAL	GENERAL PROJECT NOTES
 ELECTRICAL ROOM NAME ROOM NUMBER	A. REMOVE CONDUIT AND BOXES INDICATED ON DRAWINGS LD-101 AND LD-102. B. PROVIDE CONDUIT AND BOXES INDICATED ON DRAWING L-001, L-101, L-102, AND L-201. C. CONDUITS SHALL NOT BE INSTALLED UNDER SLAB, WITHIN SLAB ON GRADE, OR IN CONCRETE DECKS. D. MOUNTING HEIGHTS ARE TO BOTTOM OF LIGHTING FIXTURES UNLESS OTHERWISE INDICATED. E. PROVIDE GROUND CONDUCTOR IN EACH CONDUIT AND RACEWAY. F. PROVIDE DEDICATED NEUTRAL CONDUCTOR FOR EACH BRANCH CIRCUIT.
ABBREVIATIONS	WIRING
A AMPERE(S) C CONDUIT CCT CORRELATED COLOR TEMPERATURE CRI COLOR RENDERING INDEX G GROUND K KELVIN (COLOR TEMPERATURE) LED LIGHT EMITTING DIODE LM LUMEN(S) NO. NUMBER P POLE(S) RM ROOM ST. STORAGE TYP TYPICAL V VOLT(S) VEST. VESTIBULE W WATT(S) OR WIRE(S)	WIRING IN CONDUIT RUN CONCEALED IN WALL CONSTRUCTION OR CEILING SPACE, AND EXPOSED IN OPEN CEILINGS, UNLESS OTHERWISE NOTED. NUMBER OF HASH MARKS INDICATES NUMBER OF CONDUCTORS PLUS GROUND. WHERE NO HASH MARKS APPEAR, PROVIDE TWO (2) CONDUCTORS PLUS GROUND. HOMERUN.
EXISTING	
EXISTING TO REMAIN ELECTRIC PANELBOARD (120/208V), SURFACE MOUNTED. EXISTING TO REMAIN WALL MOUNTED FIXTURE BACKBOX, CONNECTED TO EMERGENCY CIRCUIT. EXISTING TO REMAIN WALL MOUNTED FIXTURE BACKBOX. EXISTING TO REMAIN HOMERUN TO PANELBOARD.	
DEMOLITION	
DISCONNECT AND REMOVE EXISTING CEILING OUTLET AND LIGHTING FIXTURE. DISCONNECT AND REMOVE EXISTING CEILING OUTLET AND WALL WASH LIGHTING FIXTURE. DISCONNECT AND REMOVE EXISTING CEILING OUTLET AND LIGHTING FIXTURE CONNECTED TO EMERGENCY CIRCUIT. DISCONNECT AND REMOVE EXISTING WALL OUTLET AND LIGHTING FIXTURE. DISCONNECT AND REMOVE EXISTING IN-WALL FIXTURE LIGHT ENGINE AND FACEPLATE. BACKBOX TO REMAIN FOR RETROFIT UNDER NEW WORK. DISCONNECT AND REMOVE LIGHT ENGINE AND FACEPLATE OF EXISTING IN-WALL LIGHT FIXTURE CONNECTED TO EMERGENCY CIRCUIT. BACKBOX TO REMAIN FOR RETROFIT UNDER NEW WORK.	
LIGHTING FIXTURES	
WALL OUTLET AND LINEAR LIGHTING FIXTURE, TYPE AS DESIGNATED. CEILING OUTLET AND PENDANT MOUNTED LIGHTING FIXTURE, TYPE AS DESIGNATED. WALL OUTLET AND LIGHTING FIXTURE, TYPE AS DESIGNATED. CEILING OUTLET AND LIGHT FIXTURE, TYPE AS DESIGNATED. CEILING OUTLET AND WALL WASH LIGHT FIXTURE, TYPE AS DESIGNATED. IN-WALL FIXTURE FOR RETROFIT, TYPE AS DESIGNATED. ANY OF THE ABOVE FIXTURES ON EMERGENCY LIGHTING CIRCUIT, TYPE AS DESIGNATED. ANY OF THE ABOVE LIGHTING FIXTURES. UPPERCASE LETTER INDICATES FIXTURE TYPE DESIGNATION.	
FIRE DETECTION AND ALARM	
CONTROL MODULE, COMPATIBLE WITH EXISTING FIRE DETECTION AND ALARM SYSTEM.	

JIM ROUSE THEATRE FOR THE PERFORMING ARTS
THEATRICAL HOUSE LIGHTING CONTROLS

WILDE LAKE HIGH SCHOOL

5460 TRUMPETER ROAD, COLUMBIA, MARYLAND 21044
HOWARD COUNTY PUBLIC SCHOOL SYSTEM

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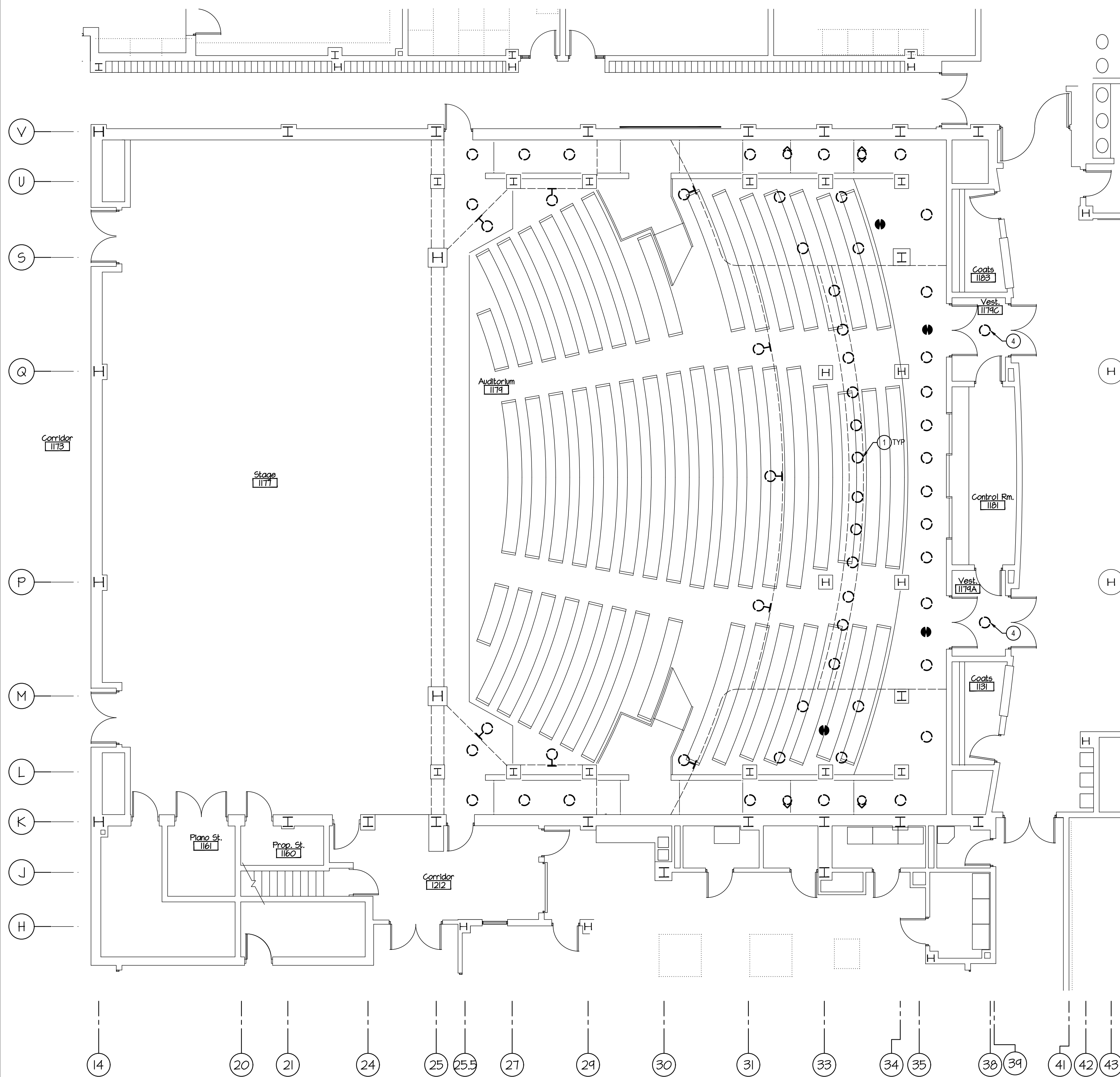
tel 410-265-6100
jamesposey.com

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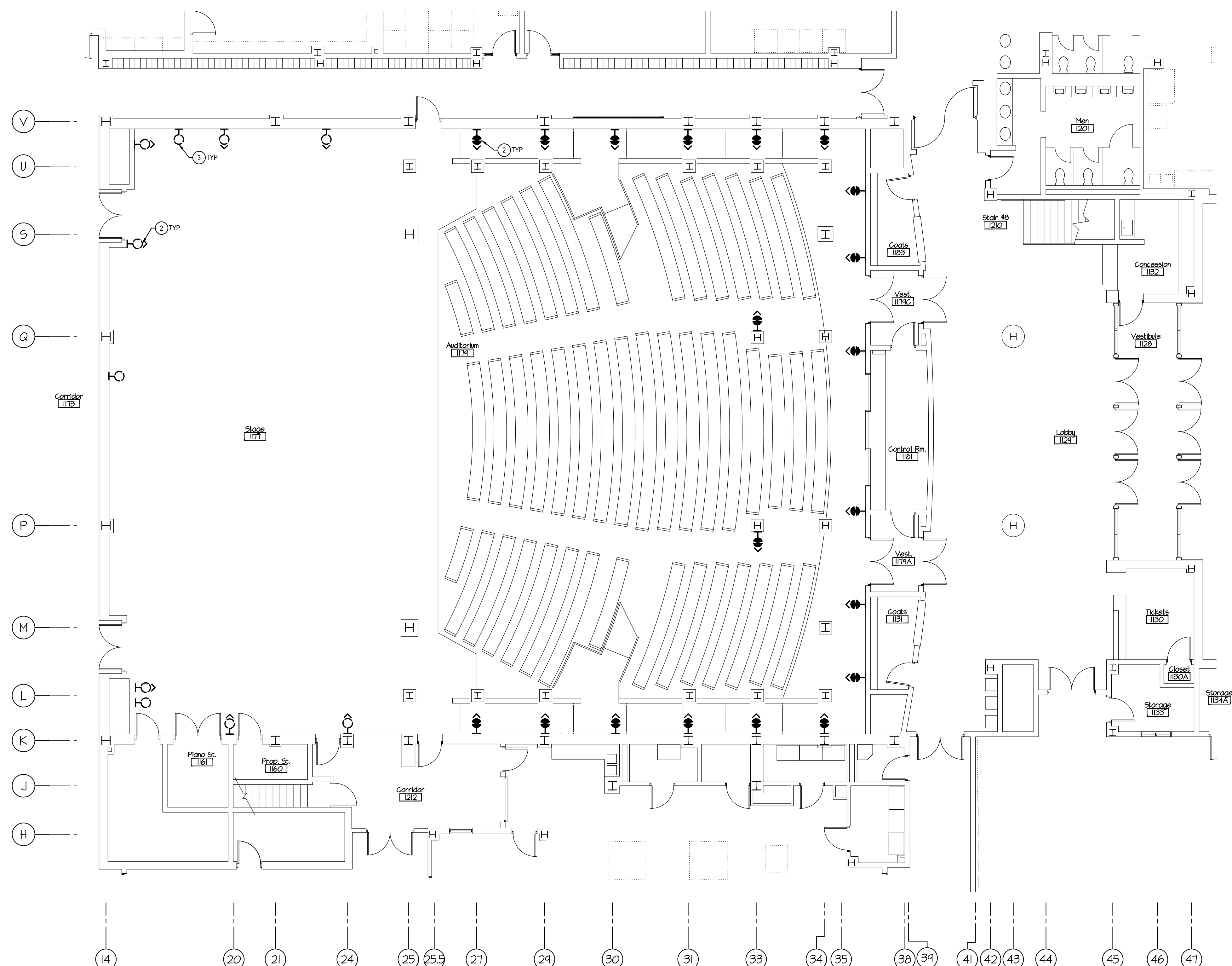
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Approved PJM	
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Project No. 7591-22	
Date 04/20/2022	

Drawing Title
ELECTRICAL SYMBOLS
LIST & LIGHTING FIXTURE
SCHEDULE

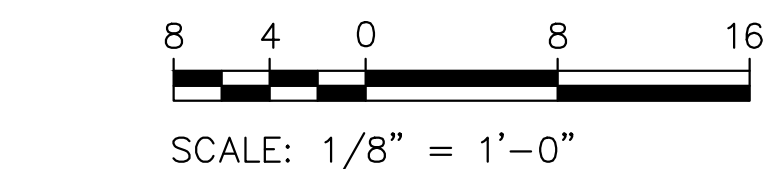
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E-001



1 PART PLAN - UNDER BALCONY - DEMOLITION
ED-101 SCALE: 1/8"=1'-0"



2 PART PLAN - STAGE LEVEL - DEMOLITION
ED-101 SCALE: 1/8"=1'-0"



- GENERAL NOTES:**
- INFORMATION SHOWN ON THIS DRAWING PERTAINING TO EXISTING CONDITIONS HAS BEEN OBTAINED FROM AVAILABLE BUILDING DRAWINGS OR GENERAL FIELD OBSERVATIONS AND MAY NOT INDICATE EXISTING CONDITIONS IN DETAIL OR DIMENSION. DETERMINE EXISTING CONDITIONS PRIOR TO FABRICATION OR PERFORMANCE OF ANY WORK. SHOULD CONDITIONS BE DISCOVERED THAT PREVENT EXECUTION OF THE WORK AS INDICATED, IMMEDIATELY NOTIFY THE ENGINEER IN WRITING AND AWAIT DIRECTION BEFORE PROCEEDING WITH THE WORK.
 - WHERE EQUIPMENT IS NOTED "DISCONNECT" OR "REMOVE" REMOVE ASSOCIATED WIRE BACK TO SOURCE, UNLESS OTHERWISE NOTED.
 - REMOVE EXISTING EQUIPMENT AND DEVICES INDICATED, INCLUDING ASSOCIATED WIRE BACK TO SOURCE UNLESS OTHERWISE NOTED.
 - EXISTING CIRCUITS INTERRUPTED BY DEMOLITION, BUT TO REMAIN, SHALL BE MADE CONTINUOUS.
 - IN BLOCK OR CONCRETE WALLS TO REMAIN, PROVIDE STAINLESS STEEL BLANK COVER PLATES FOR DEVICES REMOVED.
 - WHERE CIRCUITS ARE REMOVED BACK TO PANELS, ASSOCIATED BREAKERS MAY BE UTILIZED FOR NEW CIRCUITING.
 - DEMOLITION SHALL INCLUDE REMOVAL AND OFF-SITE DISPOSAL OF MATERIALS. DO NOT ABANDON IN PLACE ANY ELECTRICAL COMPONENTS UNLESS OTHERWISE NOTED ON DRAWINGS.
 - UNLESS OTHERWISE NOTED, ELECTRICAL ITEMS SHOWN HEAVY DASHED () SHALL BE REMOVED AND ELECTRICAL ITEMS SHOWN LIGHT SOLID () SHALL REMAIN.
 - THE EXISTING FACILITY SHALL REMAIN IN OPERATION DURING RENOVATION. INTERRUPTION TO THE EXISTING BUILDING ELECTRIC SERVICE SHALL BE COORDINATED WITH THE OWNER TO MINIMIZE DISRUPTION. INTERRUPTION OF UTILITIES SHALL NOT OCCUR DURING SCHOOL WORKING HOURS.
 - REFER TO L-SERIES DRAWINGS FOR THEATRICAL HOUSE LIGHTING CONTROL WORK.
- SPECIFIC NOTES:**
- DISCONNECT AND REMOVE EXISTING LIGHTING FIXTURE. REMOVE EXISTING WIRING BACK TO SOURCE. EXISTING CONDUIT TO REMAIN FOR REUSE UNDER NEW WORK.
 - DISCONNECT AND REMOVE EXISTING LIGHTING FIXTURE. REMOVE EXISTING WIRING BACK TO SOURCE. EXISTING CONDUIT AND FIXTURE BACKBOX TO REMAIN FOR REUSE UNDER NEW WORK.
 - DISCONNECT AND REMOVE EXISTING LIGHTING FIXTURE. REMOVE EXISTING WIRING BACK TO SOURCE. PROVIDE BLANK COVER PLATE FOR ABANDONED IN PLACE CONDUIT AND BACKBOX.
 - DISCONNECT AND REMOVE EXISTING VESTIBULE LIGHTING FIXTURE. EXISTING WIRING AND CONDUIT TO REMAIN FOR REUSE UNDER NEW WORK.

JIM ROUSE THEATRE FOR THE PERFORMING ARTS
THEATRICAL HOUSE LIGHTING CONTROLS

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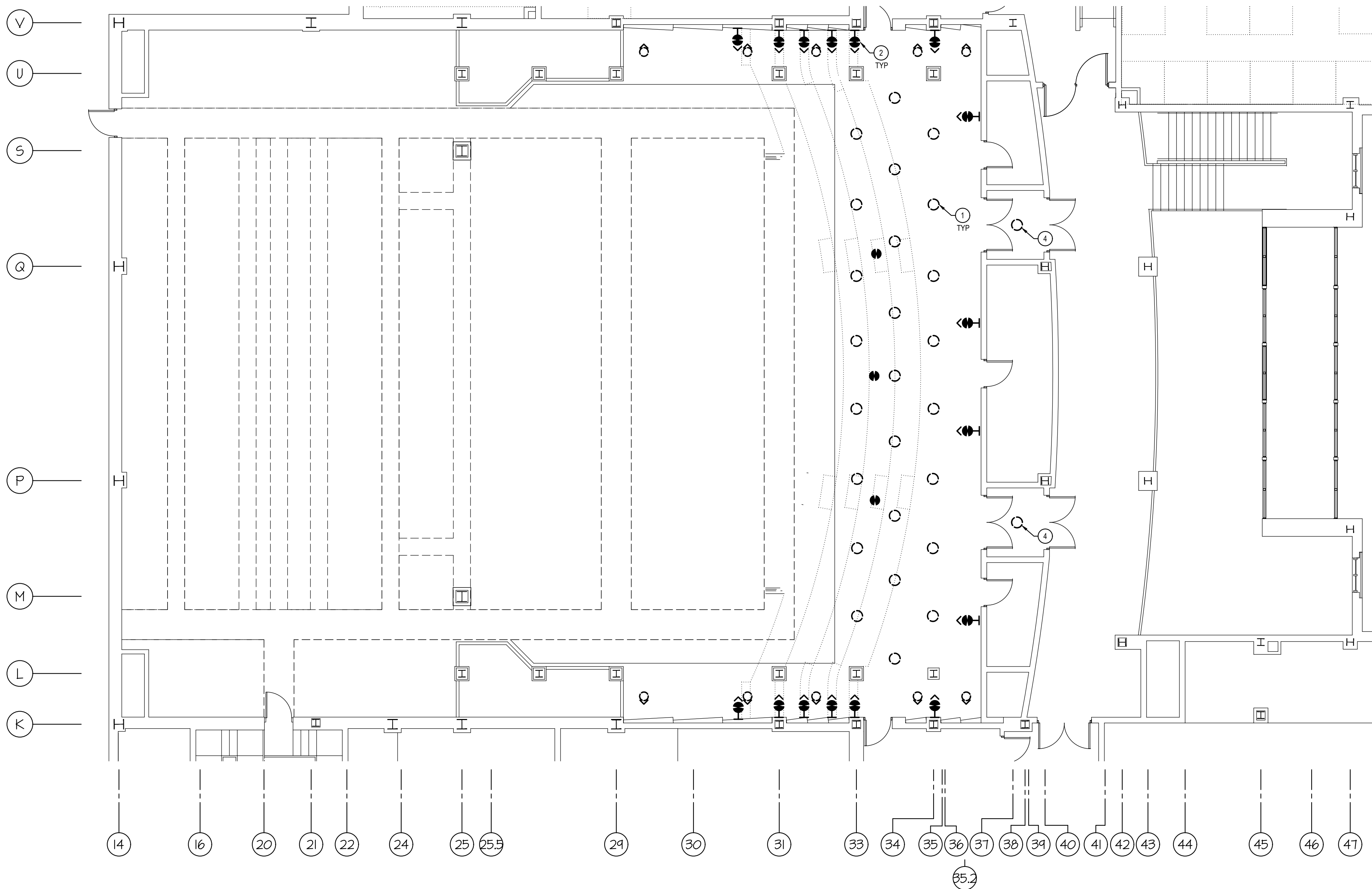
tel 410-265-6100
jamesposey.com

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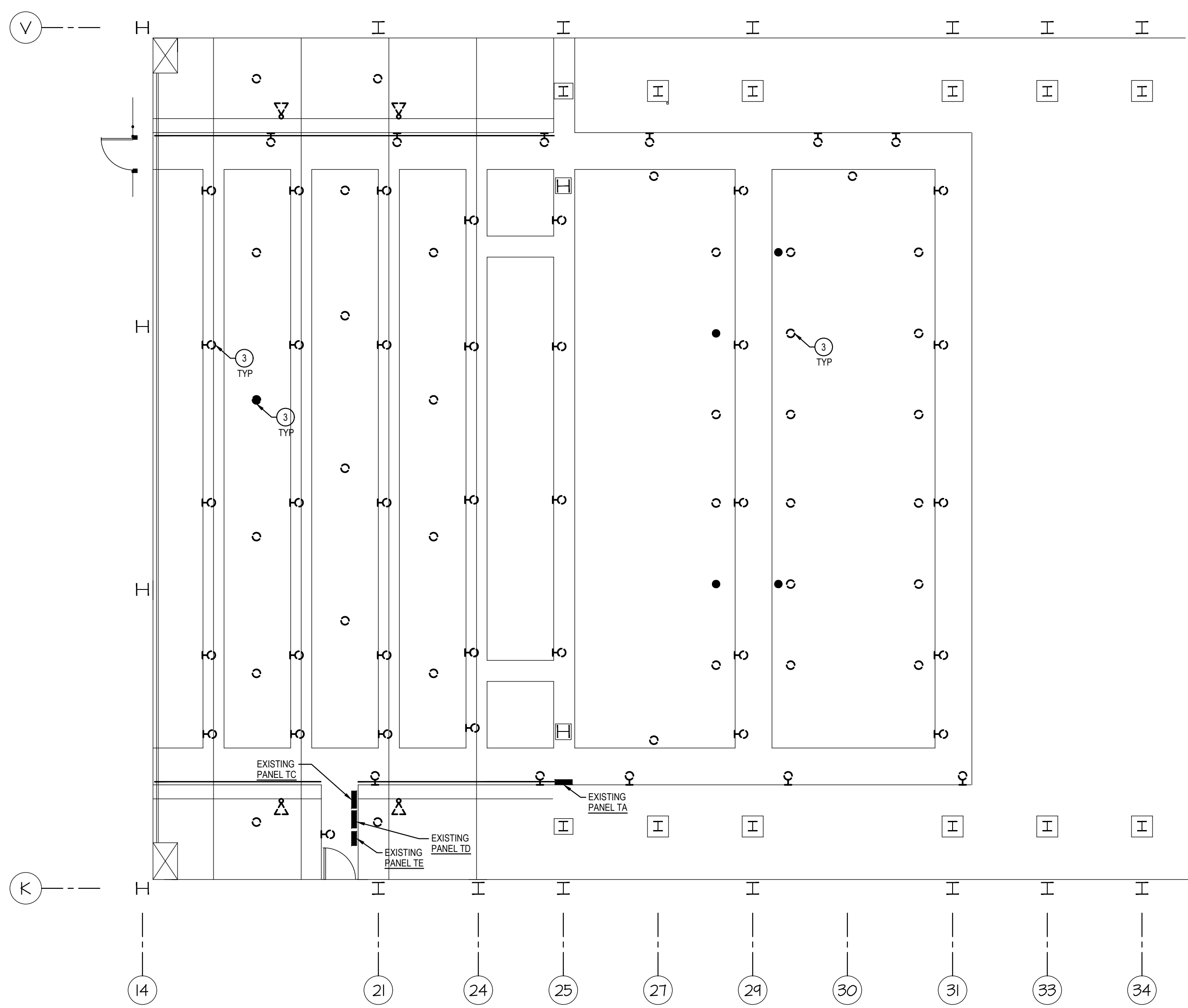
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Approved PJM	
Scale 1/8" = 1'-0"	
Project No. 7591-22	
Date 04/20/2022	

Drawing Title
**FLOOR PLAN - UNDER
BALCONY AND STAGE
LEVEL - DEMOLITION**

Sheet No:
ED-101

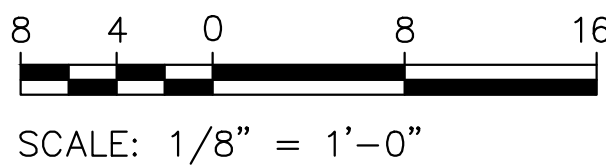


1 PART PLAN - BALCONY LEVEL - DEMOLITION
ED-102 SCALE: 1/8"=1'-0"



2 PART PLAN - CATWALK LEVEL - DEMOLITION
ED-102 SCALE: 1/8"=1'-0"

- GENERAL NOTES:
- A. INFORMATION SHOWN ON THIS DRAWING PERTAINING TO EXISTING CONDITIONS HAS BEEN OBTAINED FROM AVAILABLE BUILDING DRAWINGS OR GENERAL FIELD OBSERVATIONS AND MAY NOT INDICATE EXISTING CONDITIONS IN DETAIL OR DIMENSION. DETERMINE EXISTING CONDITIONS PRIOR TO FABRICATION OR PERFORMANCE OF ANY WORK. SHOULD CONDITIONS BE DISCOVERED THAT PREVENT EXECUTION OF THE WORK AS INDICATED, IMMEDIATELY NOTIFY THE ENGINEER IN WRITING AND AWAIT DIRECTION BEFORE PROCEEDING WITH THE WORK.
- B. WHERE EQUIPMENT IS NOTED "DISCONNECT" OR "REMOVE" REMOVE ASSOCIATED WIRE BACK TO SOURCE, UNLESS OTHERWISE NOTED.
- C. REMOVE EXISTING EQUIPMENT AND DEVICES INDICATED, INCLUDING ASSOCIATED WIRE BACK TO SOURCE UNLESS OTHERWISE NOTED.
- D. EXISTING CIRCUITS INTERRUPTED BY DEMOLITION, BUT TO REMAIN, SHALL BE MADE CONTINUOUS.
- E. IN BLOCK OR CONCRETE WALLS TO REMAIN, PROVIDE STAINLESS STEEL BLANK COVER PLATES FOR DEVICES REMOVED.
- F. WHERE CIRCUITS ARE REMOVED BACK TO PANELS, ASSOCIATED BREAKERS MAY BE UTILIZED FOR NEW CIRCUITING.
- G. DEMOLITION SHALL INCLUDE REMOVAL AND OFF-SITE DISPOSAL OF MATERIALS. DO NOT ABANDON IN PLACE ANY ELECTRICAL COMPONENTS UNLESS OTHERWISE NOTED ON DRAWINGS.
- H. UNLESS OTHERWISE NOTED, ELECTRICAL ITEMS SHOWN HEAVY DASHED () SHALL BE REMOVED AND ELECTRICAL ITEMS SHOWN LIGHT SOLID () SHALL REMAIN.
- J. THE EXISTING FACILITY SHALL REMAIN IN OPERATION DURING RENOVATION. INTERRUPTION TO THE EXISTING BUILDING ELECTRIC SERVICE SHALL BE COORDINATED WITH THE OWNER TO MINIMIZE DISRUPTION. INTERRUPTION OF UTILITIES SHALL NOT OCCUR DURING SCHOOL WORKING HOURS.
- K. REFER TO L-SERIES DRAWINGS FOR THEATRICAL HOUSE LIGHTING CONTROL WORK.
- SPECIFIC NOTES:
- 1 DISCONNECT AND REMOVE EXISTING LIGHTING FIXTURE. REMOVE EXISTING WIRING BACK TO SOURCE. EXISTING CONDUIT TO REMAIN FOR REUSE UNDER NEW WORK.
- 2 DISCONNECT AND REMOVE EXISTING LIGHTING FIXTURE. REMOVE EXISTING WIRING BACK TO SOURCE. EXISTING CONDUIT AND FIXTURE BACKBOX TO REMAIN FOR REUSE UNDER NEW WORK.
- 3 DISCONNECT AND REMOVE EXISTING LIGHTING FIXTURE. REMOVE EXISTING WIRING BACK TO SOURCE.
- 4 DISCONNECT AND REMOVE EXISTING VESTIBULE LIGHTING FIXTURE. REMOVE EXISTING WIRING AND CONDUIT TO REMAIN FOR REUSE UNDER NEW WORK.



JIM ROUSE THEATRE FOR THE PERFORMING ARTS
THEATRICAL HOUSE LIGHTING CONTROLS

WILDE LAKE HIGH SCHOOL

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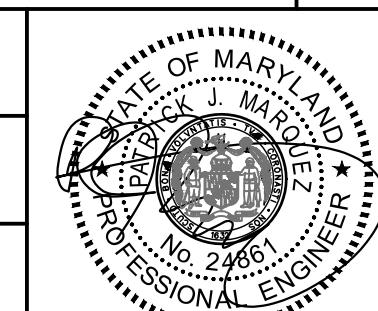
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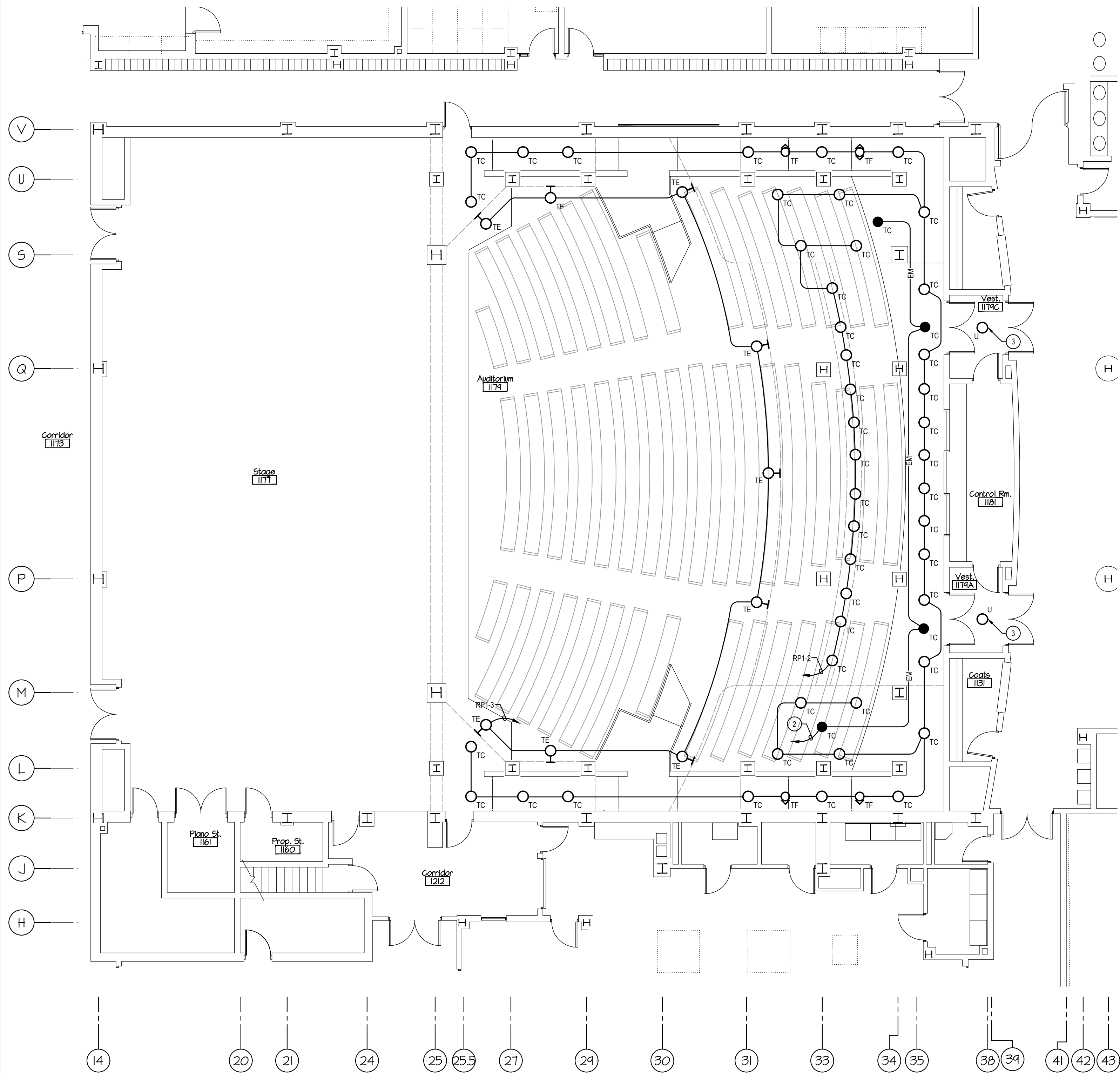
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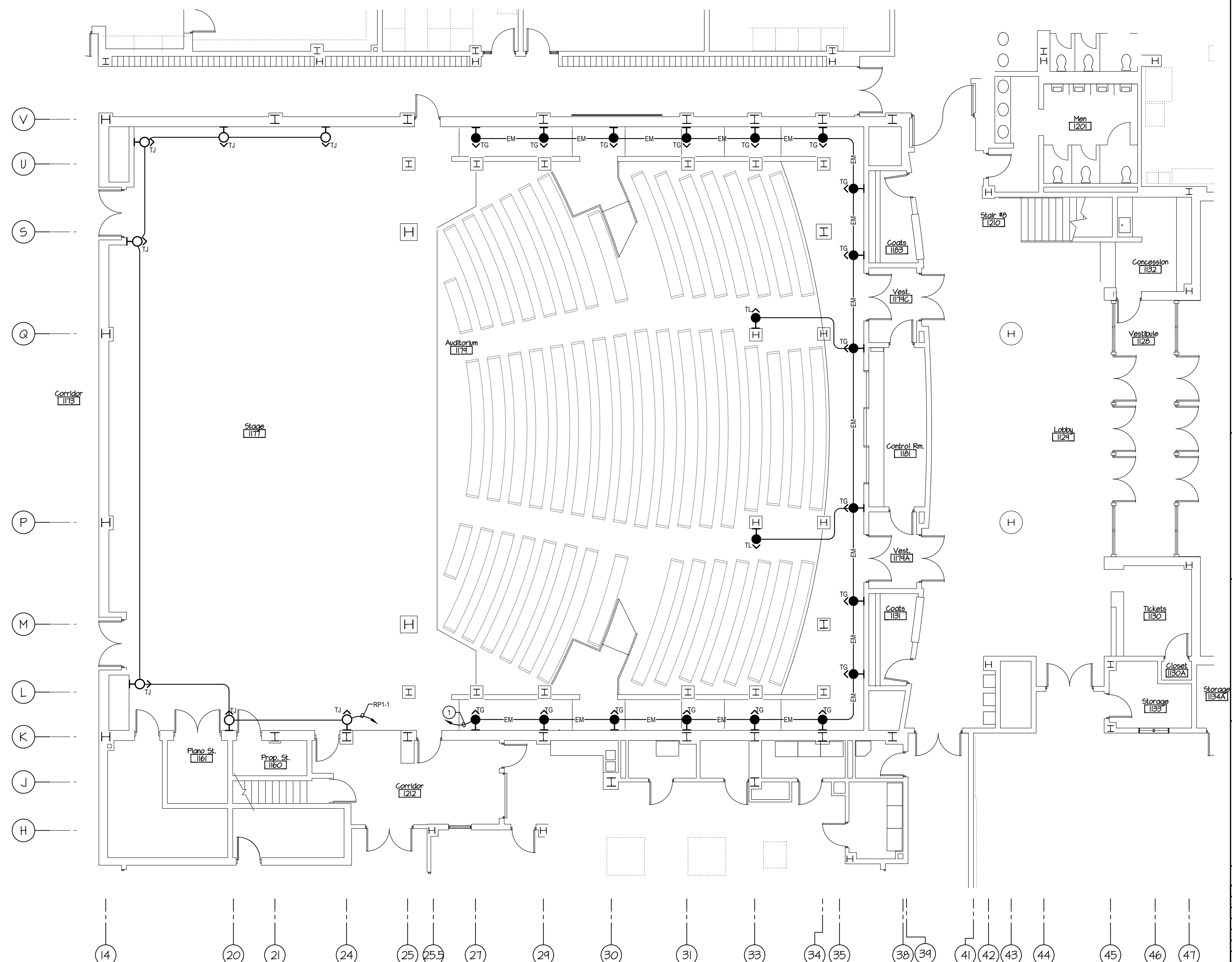
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Designed EMK	
Checked EMK	
Approved PJM	
Scale 1/8" = 1'-0"	
Project No. 7591-22	
Date 04/20/2022	

Drawing Title
**FLOOR PLAN - BALCONY
AND CATWALK LEVEL -
DEMOLITION**

Sheet No:
ED-102



1 PART PLAN - UNDER BALCONY
SCALE: 1/8"=1'-0"



2 PART PLAN - STAGE LEVEL
SCALE: 1/8"=1'-0"

8 4 0 8 16
SCALE: 1/8" = 1'-0"

- GENERAL NOTES:**
- A. INFORMATION SHOWN ON THIS DRAWING PERTAINING TO EXISTING CONDITIONS HAS BEEN OBTAINED FROM AVAILABLE BUILDING DRAWINGS OR GENERAL FIELD OBSERVATIONS AND MAY NOT INDICATE EXISTING CONDITIONS IN DETAIL OR DIMENSION. DETERMINE EXISTING CONDITIONS PRIOR TO FABRICATION OR PERFORMANCE OF ANY WORK. SHOULD CONDITIONS BE DISCOVERED THAT PREVENT EXECUTION OF THE WORK AS INDICATED, IMMEDIATELY NOTIFY THE ENGINEER IN WRITING AND AWAIT DIRECTION BEFORE PROCEEDING WITH THE WORK.
- B. REFER TO L-SERIES DRAWINGS FOR THEATRICAL HOUSE LIGHTING CONTROL WORK.
- SPECIFIC NOTES:**
- 1 PROVIDE 2 #10 - #10 GROUND IN 3/4" CONDUIT AND CONNECT TO THEATRICAL RELAY PANEL RP1-7 AND EMERGENCY LIGHTING CIRCUIT ERIE-9 VIA EMERGENCY LIGHTING TRANSFER SWITCH.
- 2 PROVIDE 2 #10 - #10 GROUND IN 3/4" CONDUIT AND CONNECT TO THEATRICAL RELAY PANEL RP1-8 AND EMERGENCY LIGHTING CIRCUIT ERIE-10 VIA EMERGENCY LIGHTING TRANSFER SWITCH.
- 3 PROVIDE 2 #10 - #10 GROUND IN 3/4" CONDUIT AND CONNECT TO EXISTING CIRCUIT SERVING VESTIBULE AND LOBBY LIGHTING.

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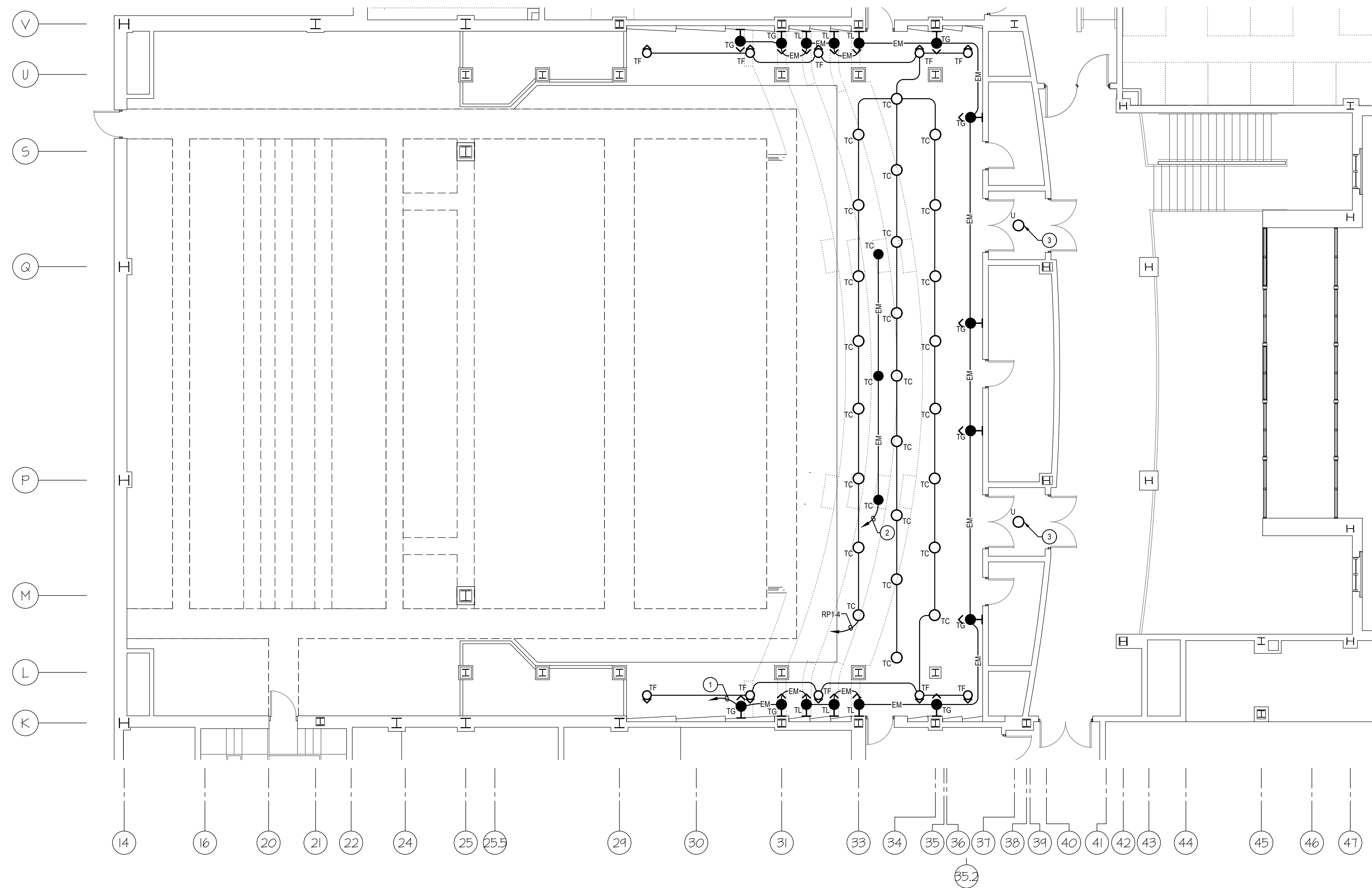
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Sym.	Description	Date
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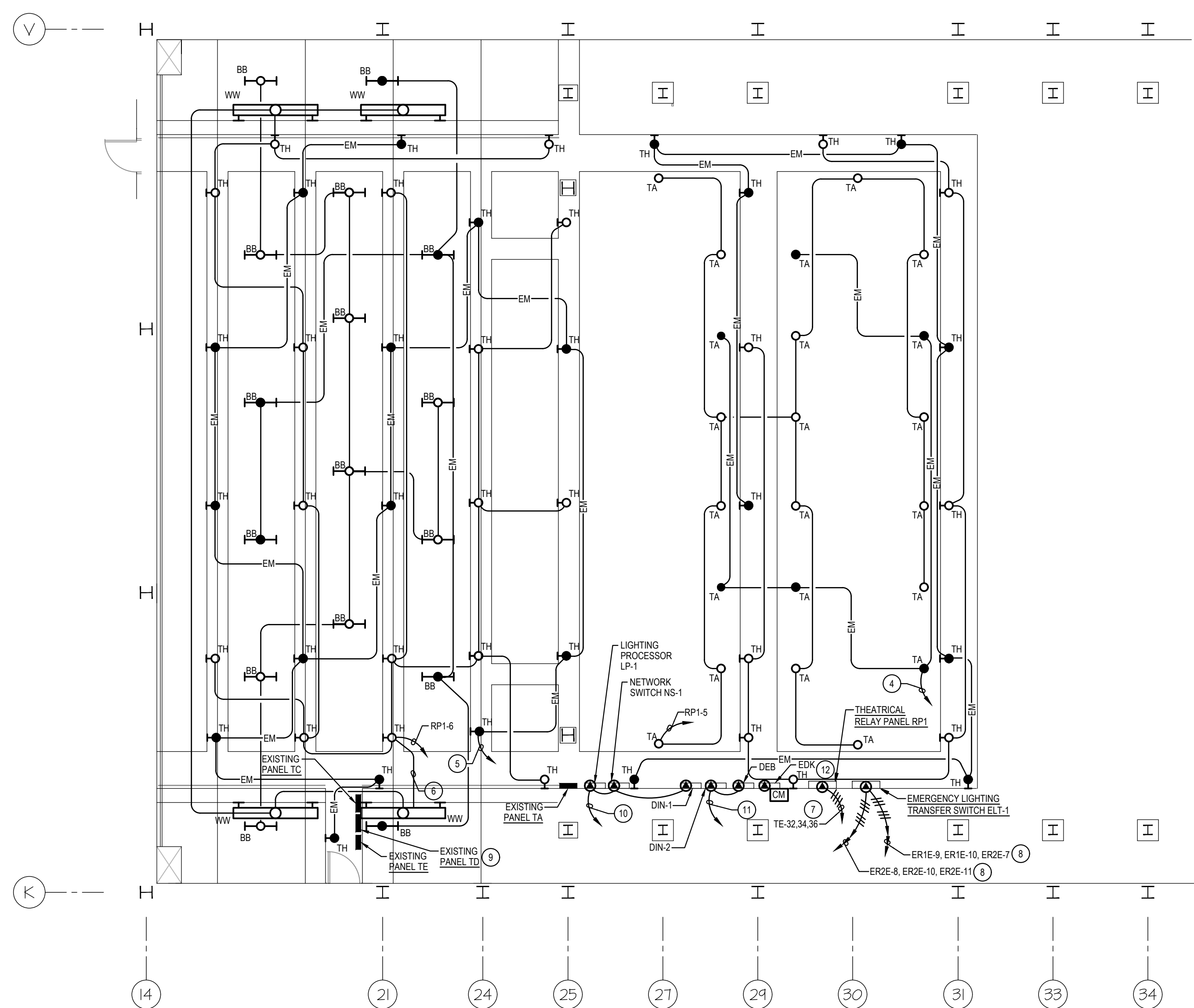
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Designed EMK	
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Scale 1/8" = 1'-0"	
Project No. 7591-22	
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Drawing Title
**FLOOR PLAN - UNDER
BALCONY AND STAGE
LEVEL**

Sheet No:
E-101

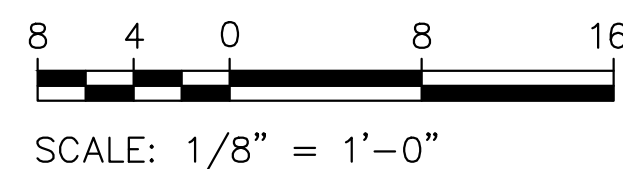


1 PART PLAN - BALCONY LEVEL
SCALE: 1/8"=1'-0"



2 PART PLAN - CATWALK LEVEL
SCALE: 1/8"=1'-0"

- GENERAL NOTES:**
- A. INFORMATION SHOWN ON THIS DRAWING PERTAINING TO EXISTING CONDITIONS HAS BEEN OBTAINED FROM AVAILABLE BUILDING DRAWINGS OR GENERAL FIELD OBSERVATIONS AND MAY NOT INDICATE EXISTING CONDITIONS IN DETAIL OR DIMENSION. DETERMINE EXISTING CONDITIONS PRIOR TO FABRICATION OR PERFORMANCE OF ANY WORK. SHOULD CONDITIONS BE DISCOVERED THAT PREVENT EXECUTION OF THE WORK AS INDICATED, IMMEDIATELY NOTIFY THE ENGINEER IN WRITING AND ADVISE DIRECTION BEFORE PROCEEDING WITH THE WORK.
- B. REFER TO L-SERIES DRAWINGS FOR THEATRICAL HOUSE LIGHTING CONTROL WORK.
- SPECIFIC NOTES:**
1. PROVIDE 2 #10 - #10 GROUND IN 3/4" CONDUIT AND CONNECT TO THEATRICAL RELAY PANEL RP1-9 AND EMERGENCY LIGHTING CIRCUIT ERZE-7 VIA EMERGENCY LIGHTING TRANSFER SWITCH.
 2. PROVIDE 2 #10 - #10 GROUND IN 3/4" CONDUIT AND CONNECT TO THEATRICAL RELAY PANEL RP1-10 AND EMERGENCY LIGHTING CIRCUIT ERZE-8 VIA EMERGENCY LIGHTING TRANSFER SWITCH.
 3. PROVIDE 2 #10 - #10 GROUND IN 3/4" CONDUIT AND CONNECT TO EXISTING CIRCUIT SERVING VESTIBULE AND LOBBY LIGHTING.
 4. PROVIDE 2 #10 - #10 GROUND IN 3/4" CONDUIT AND CONNECT TO THEATRICAL RELAY PANEL RP1-11 AND EMERGENCY LIGHTING CIRCUIT ERZE-10 VIA EMERGENCY LIGHTING TRANSFER SWITCH.
 5. PROVIDE 2 #10 - #10 GROUND IN 3/4" CONDUIT AND CONNECT TO THEATRICAL RELAY PANEL RP1-12 AND EMERGENCY LIGHTING CIRCUIT ERZE-11 VIA EMERGENCY LIGHTING TRANSFER SWITCH.
 6. TYPE WW FIXTURES SHALL HAVE A SEPARATE 0-10V CONTROL ZONE FROM TYPE TH FIXTURES ALSO SERVED BY CIRCUIT RP1-6.
 7. PROVIDE 4 #6 - #10 GROUND IN 3/4" CONDUIT AND CONNECT TO EXISTING 3P-50A CIRCUIT BREAKER IN EXISTING PANEL TE.
 8. CONNECT TO EXISTING EMERGENCY CIRCUITS CURRENTLY SERVING AUDITORIUM. REFER TO EMERGENCY LIGHTING DIAGRAM ON DRAWING E-001.
 9. EXISTING PANEL TD IS BY WESTINGHOUSE CUTLER HAMMER, TYPE PRL1, 1200/200V, 3 PHASE, 4 WIRE, 250A MAIN LUGS ONLY, CIRCA SEPTEMBER 1995. PROVIDE 3 1P-20A CIRCUIT BREAKER IN LEU OF EXISTING 3P BREAKER IN SPACES 32, 34, AND 36 OF EXISTING PANEL TD. TYPE AND AIC RATING SHALL MATCH EXISTING.
 10. PROVIDE 2 #10 AND #10 GROUND IN 3/4" CONDUIT AND CONNECT TO TD-32.
 11. PROVIDE 2 #10 AND #10 GROUND IN 3/4" CONDUIT AND CONNECT TO EMERGENCY LIGHTING CIRCUIT ERZE-11 AHEAD OF ELT-1.
 12. CONNECT SENSE FEED FOR EMERGENCY BYPASS DETECTION KIT EDK TO TE-32,34,36 AHEAD OF RELAY PANEL RP1-1. REFER TO DRAWING L-201.



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



















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Drawn EJS	
Designed EMK	
Checked EMK	
Approved PJM	
Scale 1/8" = 1'-0"	
Project No. 7591-22	
Date 04/20/2022	

Drawing Title
FLOOR PLAN - BALCONY AND CATWALK LEVEL

Sheet No:
E-102

THEATER SYSTEMS SYMBOLS	
	PLAN NOTE NUMBER.
	DEMOLITION NOTE NUMBER.
	ELECTRIC MOTOR. SEE NOTE FOR DETAILS.
	HARD-WIRED ELECTRICAL POWER CONNECTION. SEE NOTE FOR DETAILS.
	20A 120V DUPLEX POWER RECEPTACLE 18" AFF U.N.O.
	20A 120V QUADPLEX POWER RECEPTACLE 18" AFF U.N.O.
	NETWORK DATA OUTLET 18" AFF U.N.O. *#" INDICATES QUANTITY OF DEVICE PORTS.
	FLOOR BOX, SIZE / MODEL AS NOTED.
	WALL-MOUNTED DIN ENCLOSURE, DRAWN TO SCALE.
	LIGHTING SYSTEM DIMMER PANEL, DRAWN TO SCALE.
	EQUIPMENT RACK, DRAWN TO SCALE.
	LIGHTING SYSTEM RELAY PANEL, DRAWN TO SCALE.
	*#" INDICATES GANG SIZE OF WALL BOX. WHERE NO GANG SIZE IS INDICATED SEE NOTE FOR BACK BOX DETAILS.
	LIGHTING CONTROL SYSTEM BUTTON STATION.
	WALL-MOUNTED DMX EMERGENCY BYPASS CONTROLLER
	EMERGENCY DETECTION KIT, DRAWN TO SCALE.
	EMERGENCY LIGHTING TRANSFER SWITCH, DRAWN TO SCALE.
	RIGGING CONTROL SYSTEM EMERGENCY STOP WALL BOX.
	LIGHTING CONTROL SYSTEM FADER STATION.
	JUNCTION / PULL BOX, SIZE AND SERVICE AS NOTED.
	LIGHTING CONTROL SYSTEM LOCKOUT STATION
	LIGHTING CONTROL PROCESSOR, DRAWN TO SCALE.
	WALL MOUNTED NETWORK SWITCH, DRAWN TO SCALE.
	LIGHTING SYSTEM POWER/CONTROL DISTRIBUTION WALL BOX.
	LIGHTING CONTROL PLUG-IN STATION WALL BOX.
	LIGHTING CONTROL SYSTEM TOUCH SCREEN STATION.
	CEILING MOUNTED WIRELESS ACCESS POINT

SPECIAL REQUIREMENTS - EXISTING CONDITIONS

- EXISTING EQUIPMENT LOCATIONS AND DIMENSIONS ON THESE DRAWINGS ARE A BEST-EFFORT ATTEMPT TO DOCUMENT EXISTING CONDITIONS, BUT MAY NOT BE CORRECT. THE CONTRACTOR IS RESPONSIBLE FOR FIELD-VERIFYING EXISTING CONDITIONS.
- PROVIDE A SITE INSPECTION TO DOCUMENT EXISTING EQUIPMENT AND CONDITIONS. MAKE NOTE OF EXISTING CONDITIONS THAT DIFFER FROM THESE DRAWINGS OR ANY OTHER CONFLICTS THAT COULD AFFECT THE INSTALLATION OF NEW LIGHTING CONTROL SYSTEMS AS INDICATED ON THESE DRAWINGS IN A WRITTEN REQUEST FOR INFORMATION (RFI).
- PROVIDE LABOR TO UNINSTALL EXISTING LIGHTING EQUIPMENT NOT INTENDED TO REMAIN AS PART OF THE NEW LIGHTING SYSTEMS AND TURN OVER OR DISPOSE OF DECOMMISSIONED EQUIPMENT AS DIRECTED BY THE OWNER.
- REVIEW THESE DRAWINGS FOR ALL REFERENCES TO EXISTING AND OWNER FURNISHED EQUIPMENT AND COORDINATE WITH OWNER THE DECOMMISSIONING OF EXISTING EQUIPMENT.
- TEST AND VERIFY ALL EXISTING EQUIPMENT INTENDED TO BE REUSED IN THE NEW LIGHTING SYSTEMS OPERATES AS INTENDED. REPORT TO THE OWNER ANY EQUIPMENT THAT REQUIRES REPAIR OR REPLACEMENT PRIOR TO INSTALLATION.
- COORDINATE WITH THE OWNER THE INSTALLATION OF EQUIPMENT (NEW, EXISTING, AND OWNER FURNISHED), PROVIDING ALL NECESSARY ACCESSORIES AND INTERFACING COMPONENTS FOR A COMPLETE, WORKING SYSTEM MEETING THE OWNER'S REQUIREMENTS.

GENERAL NOTES	
<p>GENERAL NOTES</p> <ol style="list-style-type: none">PRIOR TO BIDDING, REVIEW THE PROJECT DRAWINGS AND SPECIFICATIONS TO BECOME FAMILIAR WITH THE PROJECT SCOPE AND THEATRICAL SYSTEMS REQUIREMENTS.PERFORM A SITE VISIT TO DOCUMENT AND VERIFY EXISTING CONDITIONS. ALL DIMENSIONS SHOWN ON THESE DRAWINGS ARE TO BE VERIFIED IN THE FIELD (V.I.F.).ADVISE THE ARCHITECT AND THEATER CONSULTANT OF ANY DISCREPANCIES THAT WILL AFFECT THE INSTALLATION OF THE THEATRICAL SYSTEMS.OBTAIN ALL NECESSARY PERMITS AND ARRANGE FOR INSPECTION OF THE THEATRICAL SYSTEMS BY LOCAL OFFICIALS IF REQUIRED BY LOCAL CODE.COORDINATE THE INSTALLATION OF THE THEATRICAL SYSTEMS WITH THE BASE BUILDING ELECTRICAL WORK, INCLUDING CONDUIT, BACK BOXES, PULL BOXES, JUNCTION BOXES, CABLES, AND ELECTRICAL POWER AS SHOWN ON THE ELECTRICAL DRAWINGS AND THEATER SYSTEMS INFRASTRUCTURE DRAWINGS.COORDINATE WITH ARCHITECT ALL INFRASTRUCTURE REQUIREMENTS SHOWN ON THESE DRAWINGS INCLUDING BUT NOT LIMITED TO FLOOR BOX LOCATIONS, BACK BOX LOCATIONS AND ELEVATIONS, AND CONDUIT ROUTING. OBTAIN ARCHITECT'S APPROVAL BEFORE COMMENCING WITH WORK.VERIFY THE BASE BUILDING ELECTRICAL INFRASTRUCTURE IS COMPLETE AND CORRECT FOR THE THEATRICAL SYSTEMS CABLES AND FUNCTIONS.SUPPLY AND INSTALL MISCELLANEOUS CONDUIT, BACK BOXES, PULL BOXES, JUNCTION BOXES, AND CABLES TO RESULT IN A COMPLETE SYSTEM TO THE EXTENT THESE ITEMS ARE NOT SUPPLIED OR INSTALLED BY THE ELECTRICAL CONTRACTOR.TERMINATE THEATER SYSTEMS CABLES.SUPPLY AND INSTALL ALL THEATER SYSTEMS EQUIPMENT, ELECTRONICS, COMPONENT ITEMS, CONTROL SOFTWARE PROGRAMMING, AND PROVIDE TESTING TO ENSURE COMPLETE AND WORKING SYSTEMS.	<p>ELECTRICAL CONTRACTOR INSTALLATION RESPONSIBILITIES</p> <ol style="list-style-type: none">ALL ELECTRICAL POWER REQUIREMENTS INDICATED ON THEATER SYSTEMS DRAWINGS ARE SHOWN FOR COORDINATION PURPOSES ONLY AND SHALL BE PROVIDED UNDER DIVISION 26. SEE ELECTRICAL DRAWINGS FOR INFORMATION ON ELECTRICAL POWER INFRASTRUCTURE TO BE INSTALLED BY THE ELECTRICAL CONTRACTOR.THE INSTALLATION OF ALL CONDUITS, BACK BOXES, PULL BOXES, JUNCTION BOXES, AND ELECTRICAL POWER SHOWN ON THESE THEATER SYSTEMS DRAWINGS SHALL BE PROVIDED UNDER DIVISION 26.ELECTRICAL POWER FOR THE THEATRICAL LIGHTING AND LIGHTING CONTROL SYSTEM SHALL BE SERVED BY A DEDICATED BREAKER PANEL ELECTRICALLY ISOLATED FROM POWER CIRCUITS SERVING THE RIGGING CONTROL SYSTEM, RIGGING MOTORS, HVAC EQUIPMENT, AND OTHER NOISE-GENERATING BUILDING SYSTEMS EQUIPMENT.ALL CONDUITS SHALL BE EMT OF MINIMUM 1" DIAMETER UNLESS NOTED OTHERWISE.CONDUITS SHALL BE PROVIDED SIZED AS INDICATED OR SIZED AS REQUIRED FOR 40 PERCENT FILL, WHICHEVER IS LARGER.CONDUIT RUNS IN EXCESS OF 100 FT SHALL HAVE INTERMEDIATE JUNCTION BOXES EVERY 100 FT OR AT 3 BEND INTERVALS, WHICHEVER IS SHORTER.CONDUIT FIELD BENDS AND OFFSETS SHALL BE AVOIDED WHENEVER POSSIBLE. FIELD BENDS SHALL BE MADE TO AVOID CHANGING THE INTERNAL DIAMETER AND NOT DAMAGE THE CONDUIT'S INTERIOR AND EXTERIOR PROTECTIVE COATINGS. FIELD BENDS SHALL BE FREE OF KINKS, INDENTATIONS, AND FLATTENING. INDIVIDUAL BENDS SHALL NOT EXCEED 90 DEGREES. NO MORE THAN 270 DEGREES OF TOTAL BENDS SHALL BE ALLOWED IN ANY ONE CONDUIT RUN.ALL CONDUITS SHALL BE PROVIDED WITH ONE (1) SPARE NYLON PULL LINE.ALL WALL AND CEILING BOXES SHALL BE A MINIMUM OF 3-1/2 INCHES DEEP UNLESS NOTED OTHERWISE.ALL JUNCTION AND PULL BOXES SHALL BE A MINIMUM OF 4 INCHES DEEP UNLESS NOTED OTHERWISE. <p>LIGHTING SYSTEM CONTRACTOR INSTALLATION REQUIREMENTS</p> <ol style="list-style-type: none">COORDINATE ADDITIONAL STRUCTURE, BRACING, AND BLOCKING REQUIREMENTS FOR MOUNTING OF LIGHTING EQUIPMENT WITH THE OWNER.PROVIDE SUFFICIENT SLACK FOR LOW VOLTAGE CONTROL CABLES AND POWER CABLES ENTERING WALL MOUNTED EQUIPMENT TO ENABLE OPENING OR MOVEMENT FOR SERVING.PROVIDE SEQUENTIAL NUMBERING OF ALL LIGHTING SYSTEMS CABLES AT EACH CABLE ORIGINATION AND TERMINATION POINT. RECORD NUMBERING AS PART OF THE LIGHTING SYSTEMS DOCUMENTATION.PROVIDE SEQUENTIAL NUMBERING OF ALL DEVICE PLATES AND CONNECTORS. LABELING SHALL DESIGNATE FUNCTION, TYPE, AND UNIQUE INTERCONNECTION NUMBER AND SHALL BE RECORDED AS PART OF THE LIGHTING SYSTEMS DOCUMENTATION.SEE SPECIFICATION 260923 FOR FULL LIGHTING CONTRACTOR INSTALLATION REQUIREMENTS.

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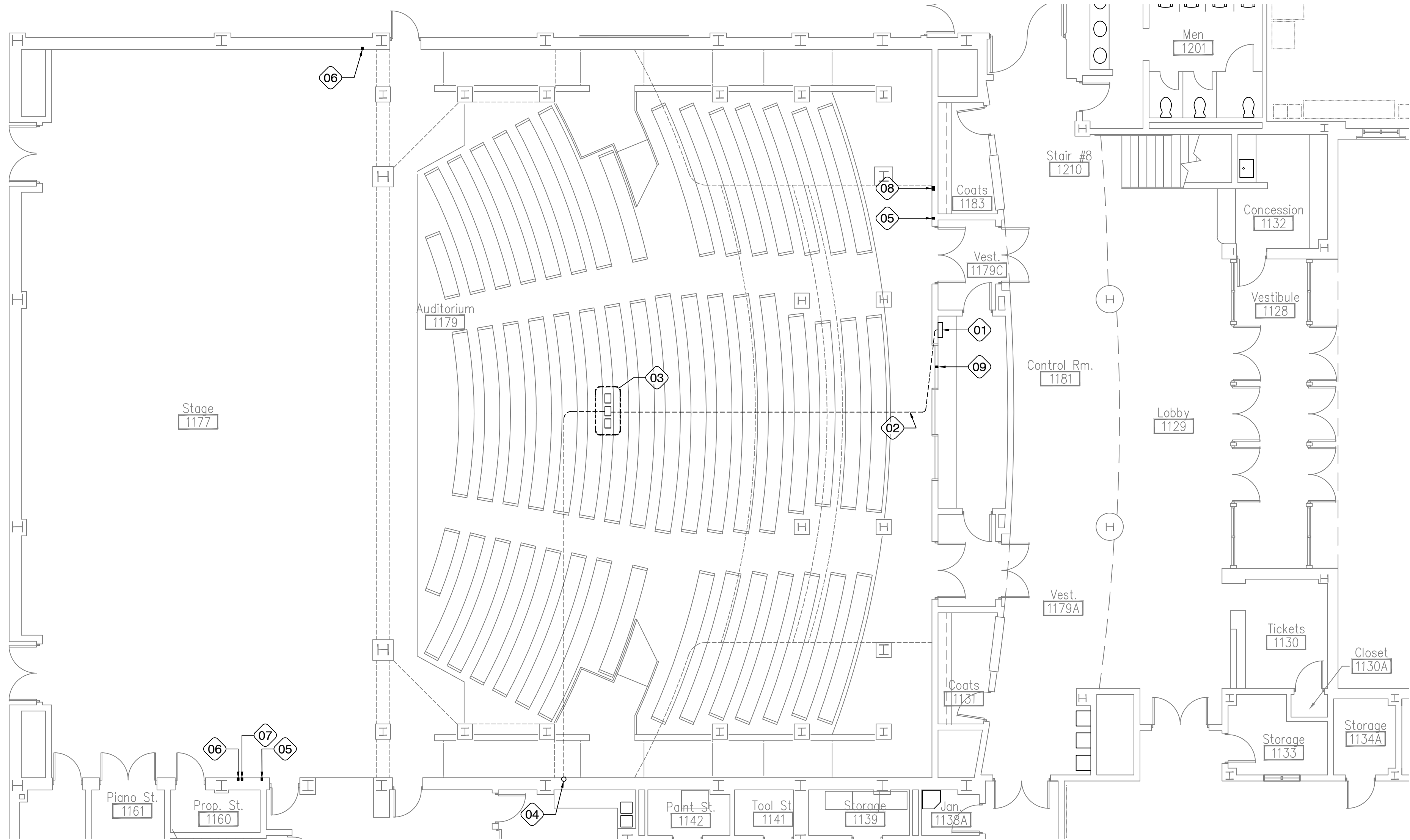
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Project No.	7591-22
Date	04/20/2022

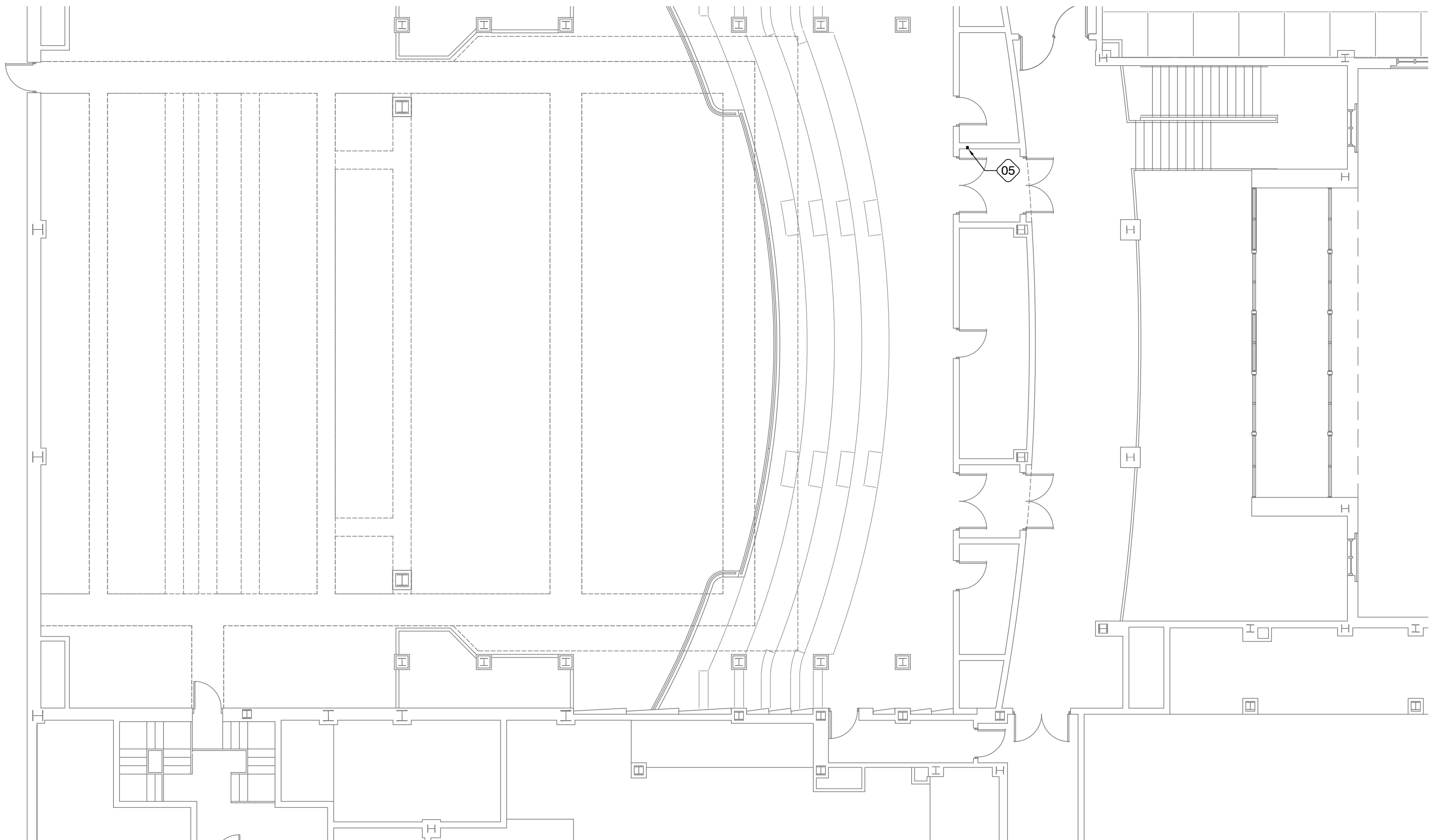
Drawing Title
LIGHTING SYSTEMS
COVER SHEET

Sheet No:
L-001

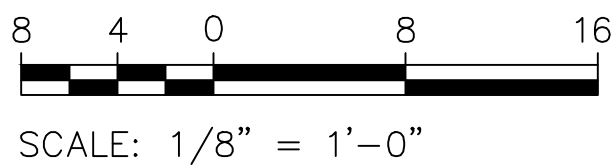
- DEMOLITION NOTES (THIS SHEET ONLY)**
- EXISTING MASTER CONTROL STATION:
 - REMOVE EXISTING MASTER CONTROL STATION AND ASSOCIATED SURFACE MOUNT BOX BACK TO FINISHED SURFACE OF CONTROL ROOM WALL, WITHOUT DAMAGING ASSOCIATED CONDUITS.
 - REMOVE ALL LOW VOLTAGE LIGHTING CONTROL WIRING BETWEEN EXISTING CONTROL STATION AND SOURCE / DESTINATION DEVICES.
 - EXISTING CONDUITS TO BE RETAINED AND TIED INTO A NEW BACK BOX.
 - EXISTING 1" CONDUIT FROM MASTER CONTROL STATION TO FRONT OF HOUSE FLOOR BOX (SEE DEMOLITION NOTE 3, BELOW) FOR EXISTING DMX LIGHTING CONTROL SIGNALS.
 - EXISTING FRONT OF HOUSE FLOOR BOXES:
 - CENTER FLOOR BOX IS USED AS A JUNCTION BOX FOR EXISTING DMX LIGHTING CONTROL SIGNALS RUNNING FROM CONTROL BOOTH MASTER CONTROL STATION TO EXISTING HOUSE LIGHTING CONTROL PROCESSOR (IPS-AC-100 AUXILIARY CONTROL UNIT) ON CATWALK LEVEL.
 - REMOVE EXISTING DMX WIRING, CONNECTOR, AND CONNECTOR PLATE.
 - EXISTING CONDUIT TURNS UP TO EXISTING HOUSE LIGHTING CONTROL PROCESSOR (IPS-AC-100 AUXILIARY CONTROL UNIT) ON CATWALK LEVEL.
 - EXISTING SINGLE-GANG HOUSE LIGHTING CONTROL STATION:
 - REMOVE EXISTING LOW VOLTAGE BUTTON CONTROL STATION.
 - REMOVE ALL LOW VOLTAGE LIGHTING CONTROL WIRING BETWEEN EXISTING CONTROL STATION AND SOURCE / DESTINATION DEVICES.
 - RETAIN EXISTING FLUSH BACK BOX AND ASSOCIATED CONDUIT(S) TO ACCOMMODATE NEW EQUIPMENT.
 - EXISTING SINGLE-GANG LOW VOLTAGE CONTROL STATION FOR STAGE WORK LIGHTS:
 - REMOVE EXISTING LOW VOLTAGE BUTTON CONTROL STATION.
 - REMOVE ALL LOW VOLTAGE LIGHTING CONTROL WIRING BETWEEN EXISTING CONTROL STATION AND SOURCE / DESTINATION DEVICES.
 - RETAIN EXISTING FLUSH BACK BOX AND ASSOCIATED CONDUIT(S) TO ACCOMMODATE NEW EQUIPMENT.
 - EXISTING 2-GANG LOW VOLTAGE CONTROL STATION FOR STAGE AND CATWALK WORK LIGHTS:
 - REMOVE EXISTING LOW VOLTAGE BUTTON CONTROL STATIONS.
 - REMOVE ALL LOW VOLTAGE LIGHTING CONTROL WIRING BETWEEN EXISTING CONTROL STATIONS AND SOURCE / DESTINATION DEVICES.
 - RETAIN EXISTING FLUSH 2-GANG BACK BOX (OR GANGED SINGLE GANG BOXES) AND ASSOCIATED CONDUIT(S) TO ACCOMMODATE NEW EQUIPMENT.
 - EXISTING SINGLE-GANG LIGHTING CONSOLE CONTROL OUTLET:
 - REMOVE EXISTING DMX WIRING, CONNECTOR, AND CONNECTOR PLATE.
 - RETAIN EXISTING FLUSH BACK BOX AND ASSOCIATED CONDUIT(S) TO ACCOMMODATE NEW EQUIPMENT.



1 AUDITORIUM DEMOLITION PLAN - STAGE LEVEL
SCALE: 1/8" = 1'-0"



2 AUDITORIUM DEMOLITION PLAN - BALCONY LEVEL
SCALE: 1/8" = 1'-0"



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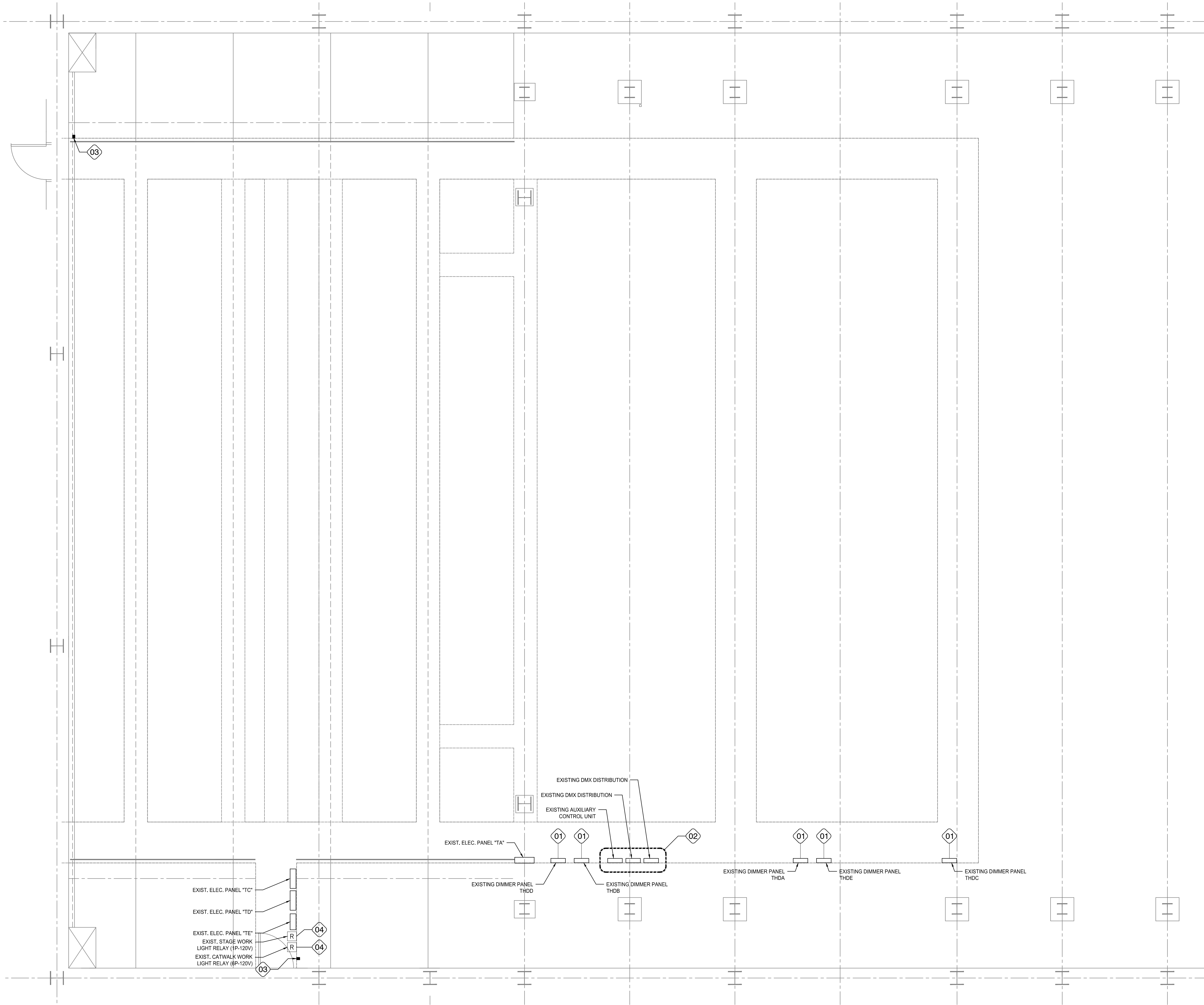
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Project No.	7591-22
Date	04/20/2022

Drawing Title
**FLOOR PLANS -
DEMOLITION**

Sheet No:
LD-101

DEMOLITION NOTES (THIS SHEET ONLY)

- EXISTING DIMMER PANEL FOR HOUSE LIGHTING:
 - CAREFULLY DECOMMISSION/UNINSTALL EXISTING DIMMER PANEL. TURN OVER DIMMER PANEL, ALL DIMMER MODULES, AND ASSOCIATED COMPONENTS/HARDWARE TO OWNER IN GOOD WORKING ORDER. THE INTENT IS FOR THE OWNER TO BE ABLE TO USE THE UNINSTALLED DIMMER PANEL FOR SPARE PARTS.
 - REMOVE ALL ASSOCIATED LOW VOLTAGE CONTROL WIRING BACK TO THE EXISTING HOUSE LIGHTING CONTROL PROCESSOR (IPS-AC-100 AUXILIARY CONTROL UNIT).
 - REMOVE ALL ASSOCIATED HIGH VOLTAGE ELECTRICAL POWER WIRING BACK TO EXISTING ELECTRICAL PANEL "TE".
 - SEE ELECTRICAL DRAWINGS FOR INFORMATION REGARDING ELECTRICAL POWER WIRING AND CONDUITS BETWEEN DIMMER PANEL AND LIGHTING FIXTURES.
 - REMOVE ALL ASSOCIATED CONDUITS BETWEEN DIMMER PANEL AND EXISTING HOUSE LIGHTING CONTROL PROCESSOR, AND BETWEEN DIMMER PANEL AND ELECTRICAL PANEL "TE".
- EXISTING HOUSE LIGHTING CONTROL PROCESSOR AND LIGHTING CONTROL (DMX) DISTRIBUTION AMPLIFIERS.
 - RETAIN LIGHTING CONTROL DISTRIBUTION AMPLIFIERS (DMX DISTRIBUTION), TO INCLUDE ALL EXISTING DMX OUTPUT WIRING FROM DISTRIBUTION AMPLIFIERS TO DESTINATION DEVICES.
 - CAREFULLY DECOMMISSION/UNINSTALL EXISTING HOUSE LIGHTING CONTROL PROCESSOR (IPS-AC-100 AUXILIARY CONTROL UNIT).
 - REMOVE LOW VOLTAGE CONTROL WIRING BETWEEN EXISTING HOUSE LIGHTING CONTROL PROCESSOR (IPS-AC-100 AUXILIARY CONTROL UNIT) AND EXISTING DMX DISTRIBUTION AMPLIFIERS. THIS SHOULD BE ONLY ONE (1) DMX CABLE FEEDING THE INPUT ON THE PRIMARY DISTRIBUTION AMPLIFIER. THE INTENT IS FOR A NEW HOUSE LIGHTING CONTROL PROCESSOR TO FEED DMX TO THE EXISTING LIGHTING CONTROL DISTRIBUTION AMPLIFIERS VIA A NEW DMX CABLE AND AN ASSOCIATED CONDUIT.
 - REMOVE ALL LOW VOLTAGE CONTROL WIRING BETWEEN THE EXISTING HOUSE LIGHTING CONTROL PROCESSOR AND ALL SOURCE/DESTINATION DEVICES.
 - REMOVE ELECTRICAL POWER WIRING AND ITS ASSOCIATED CONDUIT BETWEEN THE EXISTING HOUSE LIGHTING CONTROL PROCESSOR AND THE ELECTRICAL BREAKER PANEL FROM WHICH IT IS BEING POWERED.
 - RETAIN EXISTING LOW VOLTAGE CONDUITS ASSOCIATED WITH THE EXISTING HOUSE LIGHTING CONTROL PROCESSOR. THE INTENT IS TO REROUTE OR EXTEND EXISTING CONDUITS FROM EXISTING LIGHTING CONTROL RECEPTACLES AND LIGHTING CONTROL STATIONS AS REQUIRED TO CONNECT THEM TO THE NEW HOUSE LIGHTING CONTROL PROCESSOR.
 - IT IS ACCEPTABLE TO DECOMMISSION THE EXISTING HOUSE LIGHTING CONTROL PROCESSOR, REMOVE ALL INTERNAL ELECTRONIC COMPONENTS FROM THE EXISTING METAL ENCLOSURE, AND RETAIN THE ENCLOSURE FOR USE AS A LOW VOLTAGE JUNCTION BOX.
- EXISTING SINGLE-GANG LOW VOLTAGE CONTROL STATION FOR CATWALK WORK LIGHTS:
 - REMOVE EXISTING LOW VOLTAGE BUTTON CONTROL STATION.
 - REMOVE ALL LOW VOLTAGE LIGHTING CONTROL WIRING BETWEEN EXISTING CONTROL STATION AND SOURCE / DESTINATION DEVICES.
 - RETAIN EXISTING FLUSH BACK BOX AND ASSOCIATED CONDUIT(S) TO ACCOMMODATE NEW EQUIPMENT.
- EXISTING WORK LIGHT RELAY:
 - UNINSTALL/REMOVE EXISTING WORK LIGHT RELAY AND ALL ASSOCIATED WIRING.
 - RETAIN AND REROUTE LOW VOLTAGE CONDUITS FROM CONTROL STATIONS TO NEW HOUSE LIGHTING CONTROL PROCESSOR.
 - SEE ELECTRICAL DRAWINGS FOR INFORMATION REGARDING ELECTRICAL POWER WIRING AND CONDUITS BETWEEN RELAY AND WORK LIGHTS.



1 AUDITORIUM DEMOLITION PLAN - CATWALK
LD-102 SCALE: 1/4" = 1'-0"

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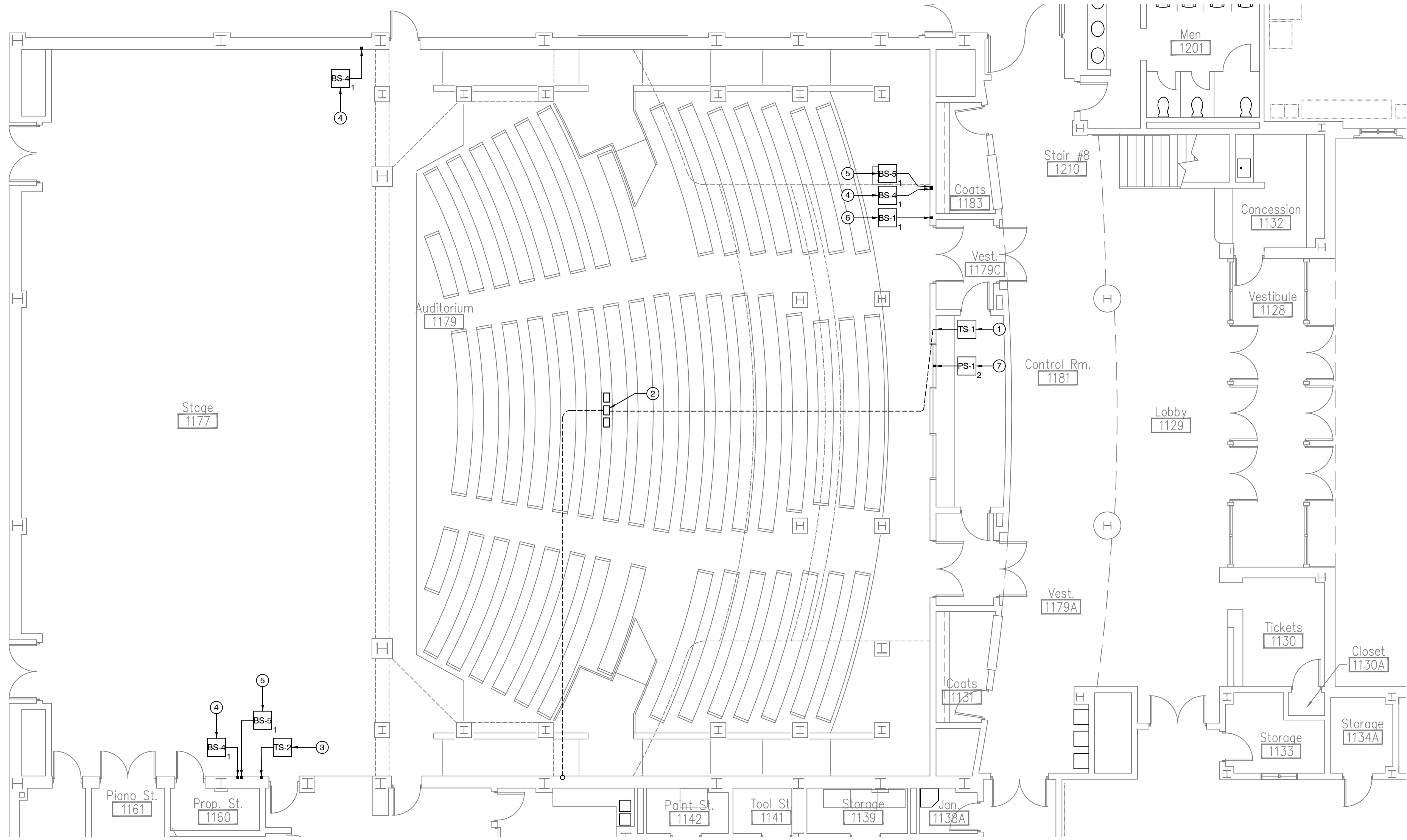
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FLOOR PLANS -
DEMOLITION

Sheet No:
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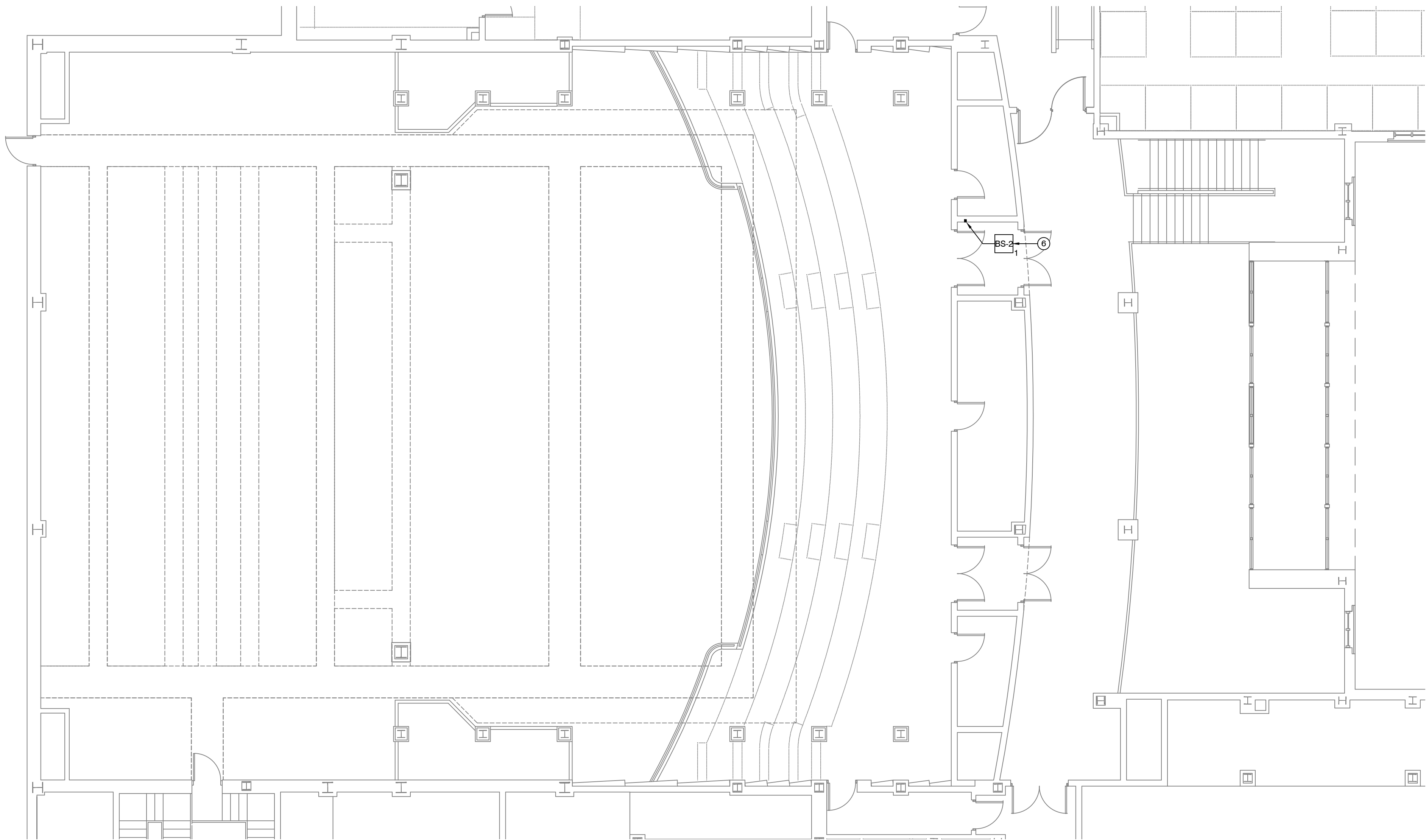
PLAN NOTES

1. PROVIDE ONE (1) NEW SURFACE MOUNTED WALL BOX EQUAL TO ETC MODEL "P-LCD-SBB" INSTALLED AT 48" AFF (TO CENTER OF BOX).
- 1.1. PROVIDE NEW CONDUITS/FITTINGS AS REQUIRED TO EXTEND AND CONNECT THE EXISTING LOW VOLTAGE CONDUITS ON THE CONTROL ROOM END TO NEW WALL BOX.
- 1.2. PROVIDE NEW CONDUITS/FITTINGS AS REQUIRED TO EXTEND AND CONNECT THE EXISTING LOW VOLTAGE CONDUIT AT CATWALK END (EXISTING TERMINATES AT AUXILIARY CONTROL UNIT BEING REMOVED) TO NEW NETWORK SWITCH "NS-1" FOR LIGHTING NETWORK CONTROL SIGNALS.
- 1.3. COORDINATE INSTALLATION OF SURFACE MOUNTED BACK BOX WITH OWNER TO ENSURE IT IS AT THE DESIRED LOCATION/ELEVATION.
2. PROVIDE BLANK CONNECTOR PLATE AND MISCELLANEOUS HARDWARE AS REQUIRED TO CLOSE UP OPENING IN EXISTING FLOOR BOX AFTER REMOVAL OF THE OLD CONNECTOR PLATE.
3. PROVIDE ONE (1) NEW SURFACE MOUNTED LOCKING WALL BOX EQUAL TO ETC MODEL "P-LCD-SLB" INSTALLED OVER EXISTING SINGLE GANG HOUSE LIGHTING CONTROL STATION BACK BOX AT 48" AFF (TO CENTER OF BOX).
- 3.1. PROVIDE NEW CONDUITS/FITTINGS AS REQUIRED TO EXTEND AND CONNECT THE EXISTING LOW VOLTAGE CONDUIT AT CATWALK END (EXISTING TERMINATES AT AUXILIARY CONTROL UNIT BEING REMOVED) TO NEW NETWORK SWITCH "NS-1" FOR LIGHTING NETWORK CONTROL SIGNALS.
- 3.2. COORDINATE INSTALLATION OF SURFACE MOUNTED BACK BOX TO BE CENTERED OVER OLD HOUSE LIGHTING CONTROL STATION BACK BOX.
4. EXISTING FLUSH BACK BOX FOR STAGE WORK LIGHT CONTROL STATION AT 48" AFF IS TO BE RE-USED FOR INSTALLATION OF NEW LOW VOLTAGE LIGHTING CONTROL STATION.
- 4.1. EXISTING CONTROL STATIONS FOR STAGE WORK LIGHTS ARE DAISY-CHAINED.
- 4.2. PROVIDE NEW CONDUITS/FITTINGS AS REQUIRED TO EXTEND AND CONNECT THE EXISTING LOW VOLTAGE CONDUIT AT RELAY END OF DAISY-CHAIN (EXISTING TERMINATES AT 1P-120V RELAY BEING REMOVED) TO NEW HOUSE LIGHTING CONTROL PROCESSOR "LP-1" FOR LOW VOLTAGE LIGHTING CONTROL SIGNALS.
5. EXISTING FLUSH BACK BOX FOR CATWALK WORK LIGHT CONTROL STATION AT 48" AFF IS TO BE RE-USED FOR INSTALLATION OF NEW LOW VOLTAGE LIGHTING CONTROL STATION.
- 5.1. EXISTING CONTROL STATIONS FOR STAGE WORK LIGHTS ARE DAISY-CHAINED.
- 5.2. PROVIDE NEW CONDUITS/FITTINGS AS REQUIRED TO EXTEND AND CONNECT THE EXISTING LOW VOLTAGE CONDUIT AT RELAY END OF DAISY-CHAIN (EXISTING TERMINATES AT 6P-120V RELAY BEING REMOVED) TO NEW HOUSE LIGHTING CONTROL PROCESSOR "LP-1" FOR LOW VOLTAGE LIGHTING CONTROL SIGNALS.
6. EXISTING FLUSH BACK BOX FOR HOUSE LIGHTING CONTROL STATION AT 48" AFF IS TO BE RE-USED FOR INSTALLATION OF NEW LOW VOLTAGE LIGHTING CONTROL STATION.
- 6.1. PROVIDE NEW CONDUITS/FITTINGS AS REQUIRED TO EXTEND AND CONNECT THE EXISTING LOW VOLTAGE CONDUIT AT CATWALK END (EXISTING TERMINATES AT AUXILIARY CONTROL UNIT BEING REMOVED) TO NEW HOUSE LIGHTING CONTROL PROCESSOR "LP-1" FOR LOW VOLTAGE LIGHTING CONTROL SIGNALS.
7. PROVIDE ONE (1) NEW SURFACE MOUNTED 2-GANG WALL BOX INSTALLED OVER EXISTING FLUSH SINGLE GANG LIGHTING CONSOLE CONTROL RECEPTACLE BACK BOX AT 18" AFF (TO CENTER OF BOX).
- 7.1. PROVIDE NEW CONDUITS/FITTINGS AS REQUIRED TO EXTEND AND CONNECT THE EXISTING LOW VOLTAGE CONDUIT AT CATWALK END (EXISTING TERMINATES AT AUXILIARY CONTROL UNIT BEING REMOVED) TO NEW NETWORK SWITCH "NS-1" FOR LIGHTING NETWORK CONTROL SIGNALS.
- 7.2. COORDINATE INSTALLATION OF SURFACE MOUNTED BACK BOX TO BE CENTERED OVER OLD HOUSE LIGHTING CONTROL STATION BACK BOX.



1 AUDITORIUM NEW WORK PLAN - STAGE LEVEL

SCALE: 1/8" = 1'-0"



2 AUDITORIUM NEW WORK PLAN - BALCONY LEVEL

SCALE: 1/8" = 1'-0"

8 4 0 8 16
SCALE: 1/8" = 1'-0"

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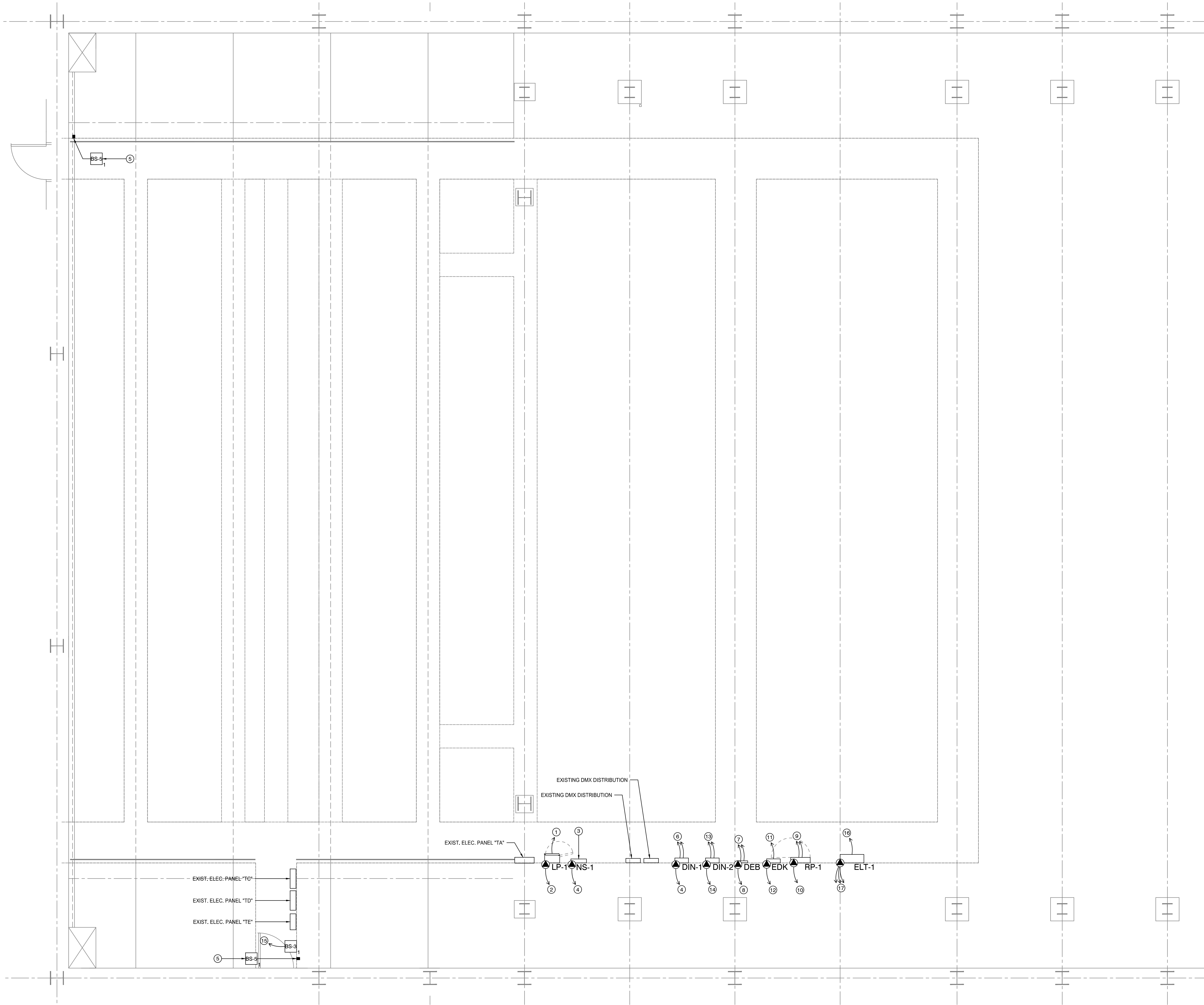
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FLOOR PLANS - NEW WORK

Sheet No:

L-101

PLAN NOTES

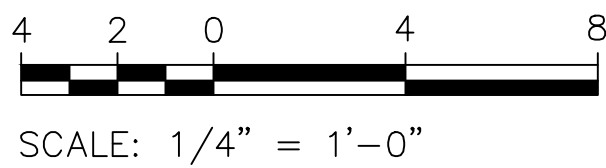
- PROVIDE ONE (1) WALL-MOUNTED ARCHITECTURAL LIGHTING CONTROL PROCESSOR EQUAL TO ETC MODEL "ERn2-W-120V" INSTALLED 48" AFF (TO BOTTOM OF LIGHTING PROCESSOR) FOR CONTROL OF HOUSE LIGHTING FIXTURES.
 - ROUTE ONE (1) 3/4" CONDUIT TO NETWORK SWITCH "NS-1" FOR LOW VOLTAGE LIGHTING CONTROL SIGNALS.
- HARDWIRE 120V 20A SINGLE PHASE (2 WIRE + GROUND) POWER INTO WALL-MOUNTED LIGHTING PROCESSOR.
- PROVIDE ONE (1) WALL-MOUNTED 8-PORT NETWORK SWITCH WITH POWER OVER ETHERNET (PSE) EQUAL TO ETC MODEL "SNB-8" INSTALLED 48" AFF (TO BOTTOM OF NETWORK SWITCH) FOR LIGHTING CONTROL NETWORK SIGNALS.
- PROVIDE HARDWIRED 120V 20A SINGLE PHASE (2 WIRE + GROUND) POWER FOR LIGHTING CONTROL SYSTEM.
- EXISTING FLUSH BACK BOX FOR CATWALK WORK LIGHT CONTROL STATION AT 48" AFF IS TO BE RE-USED FOR INSTALLATION OF NEW LOW VOLTAGE LIGHTING CONTROL STATION.
 - EXISTING CONTROL STATIONS FOR STAGE WORK LIGHTS ARE DAISY-CHAINED.
 - PROVIDE NEW CONDUITS/FITTINGS AS REQUIRED TO EXTEND AND CONNECT THE EXISTING LOW VOLTAGE CONDUIT AT RELAY END OF DAISY-CHAIN (EXISTING TERMINATES AT 6P-120V RELAY BEING REMOVED) TO NEW HOUSE LIGHTING CONTROL PROCESSOR "LP-1" FOR LOW VOLTAGE LIGHTING CONTROL SIGNALS.
- PROVIDE ONE (1) WALL-MOUNTED DIN-RAIL ENCLOSURE EQUAL TO ETC MODEL "DIN14" MOUNTED AT 48" AFF (TO BOTTOM OF ENCLOSURE) TO HOUSE DMX GATEWAY(S). SIZE DIN ENCLOSURE AS REQUIRED TO ACCOMMODATE POWER SUPPLIES AND DMX GATEWAYS.
 - ROUTE ONE (1) 3/4" CONDUIT TO NETWORK SWITCH "NS-1" FOR LOW VOLTAGE LIGHTING CONTROL SIGNALS.
 - ROUTE ONE (1) 3/4" CONDUIT TO EXISTING DMX DISTRIBUTION AMPLIFIER (PRIMARY UNIT INPUT) FOR LOW VOLTAGE LIGHTING CONTROL SIGNALS.
- PROVIDE ONE (1) 6-OUTPUT WALL-MOUNTED DMX EMERGENCY BYPASS CONTROLLER EQUAL TO ETC "DEBC-6" INSTALLED AT 48" AFF (TO BOTTOM OF ENCLOSURE) FOR TRIGGERING DMX "PANIC" SCENE AND PUTTING ALL EMERGENCY FIXTURES TO FULL BRIGHTNESS DURING AN EMERGENCY OR LOSS OF NORMAL POWER.
 - ROUTE ONE (1) 3/4" CONDUIT TO "EDK-1" FOR EMERGENCY STATUS.
 - ROUTE ONE (1) 3/4" CONDUIT TO "DIN-1" FOR LOW VOLTAGE LIGHTING CONTROL SIGNALS.
 - PROVIDE ADDITIONAL 3/4" CONDUITS ROUTED TO HOUSE LIGHTING FIXTURES FOR NEW LOW VOLTAGE DMX CONTROL CABLING AS REQUIRED.
 - SEE ELECTRICAL DRAWINGS FOR MORE INFORMATION.
- HARDWIRE 120 VAC 20A SINGLE PHASE NORMAL/EMERGENCY ELECTRICAL POWER INTO DMX EMERGENCY BYPASS CONTROLLER "DEB-1" AS PER MANUFACTURER INSTALLATION INSTRUCTIONS TO SUPPORT DMX CONTROL SIGNALS (PANIC SCENE) DURING A LOSS OF NORMAL POWER. PROJECT ELECTRICAL ENGINEER (DIVISION 26) TO SPECIFY THE NORMAL/EMERGENCY POWER SOURCE. THE DMX EMERGENCY BYPASS CONTROLLER REQUIRES EMERGENCY POWER DURING A LOSS OF NORMAL POWER.
- PROVIDE ONE (1) WALL-MOUNTED RELAY PANEL EQUAL TO ETC MODEL IQ12 INSTALLED 48" AFF (TO CENTER OF RELAY PANEL) FOR CONTROL OF HOUSE LIGHTING FIXTURES.
 - ROUTE ONE (1) 3/4" CONDUIT TO "NS-1" FOR LOW VOLTAGE LIGHTING CONTROL SIGNALS.
 - ROUTE ONE (1) 3/4" DIAMETER CONDUIT TO LIFE SAFETY SYSTEM RELAY MODULE FOR EMERGENCY SYSTEM STATUS SIGNALS.
 - SEE ELECTRICAL DRAWINGS FOR CONDUIT REQUIREMENTS BETWEEN RELAY PANEL AND NEW HOUSE LIGHTING FIXTURES.
- HARDWIRE 120 / 208 VAC 3 PHASE (4 WIRE + GROUND) POWER RATED AT 50A PER PHASE INTO WALL-MOUNTED RELAY PANEL FOR POWERING HOUSE LIGHTING CIRCUITS.
- PROVIDE ONE (1) WALL-MOUNTED EMERGENCY BYPASS DETECTION KIT EQUAL TO ETC MODEL EBDK FOR NORMAL POWER SENSE AND LIFE SAFETY SYSTEM INTERFACING. ROUTE ONE (1) 3/4" CONDUIT TO FIRE ALARM/LIFE SAFETY SYSTEM DRY CONTACT INTERFACE FOR EMERGENCY (PANIC) STATUS SIGNALS.
- ONE (1) CONDUIT ROUTED TO "RP-1" FOR 3-PHASE, 4-WIRE 20A MAX NORMAL POWER SENSE (VIA RELAY PANEL MAINS FEED TAP KIT). HARDWIRE NORMAL POWER SENSE FEED INTO EMERGENCY BYPASS DETECTION KIT AS PER MANUFACTURER INSTRUCTIONS. NORMAL POWER SOURCE FOR SENSE FEED SHALL BE AS SPECIFIED BY PROJECT ELECTRICAL ENGINEER.
- PROVIDE ONE (1) WALL-MOUNTED DIN-RAIL ENCLOSURE EQUAL TO ETC MODEL "DIN14" MOUNTED AT 48" AFF (TO BOTTOM OF ENCLOSURE) FOR HOUSING DIN-MOUNTED 0-10V LIGHTING CONTROL GATEWAY WITH INTEGRATED EMERGENCY BYPASS CONTROLLER. 0-10V LIGHTING CONTROL GATEWAY TO BE EQUAL TO ETC MODEL "RSH-LV". THE DIN-MOUNT 0-10V GATEWAY SHALL PROVIDE 0-10V "PANIC" SCENE AND PUT EMERGENCY HOUSE FIXTURES TO FULL BRIGHTNESS DURING AN EMERGENCY OR LOSS OF NORMAL POWER. SIZE DIN ENCLOSURE AS REQUIRED TO ACCOMMODATE POWER SUPPLY AND 0-10V GATEWAY.
 - ROUTE ONE (1) 3/4" CONDUIT TO NETWORK SWITCH "NS-1" FOR LOW VOLTAGE LIGHTING CONTROL SIGNALS.
 - ROUTE ONE (1) 3/4" CONDUIT TO "EDK-1" FOR EMERGENCY STATUS SIGNAL.
 - LOW VOLTAGE 0-10V CONTROL CABLING BETWEEN "DIN-2" (0-10V GATEWAY) AND NEW HOUSE LIGHTING FIXTURES SHALL BE INSTALLED IN EXISTING CONDUITS TO HOUSE LIGHTING FIXTURES. PROVIDE NEW J-BOXES AND CONDUITS AS REQUIRED TO MERGE NEW LINE VOLTAGE WIRING FROM "RP-1" AND NEW LOW VOLTAGE CONTROL WIRING FROM "DIN-2" WITH EXISTING CONDUITS TO LIGHTING FIXTURES.
 - SEE ELECTRICAL DRAWINGS FOR MORE INFORMATION.
- HARDWIRE 120 VAC 20A SINGLE PHASE NORMAL/EMERGENCY ELECTRICAL POWER INTO "DIN-2" TO SUPPORT 0-10V CONTROL SIGNALS (PANIC SCENE) DURING A LOSS OF NORMAL POWER. PROJECT ELECTRICAL ENGINEER TO SPECIFY THE NORMAL/EMERGENCY POWER SOURCE. THE 0-10V GATEWAY INSTALLED INSIDE "DIN-2" REQUIRES EMERGENCY POWER DURING A LOSS OF NORMAL POWER.
- PROVIDE ONE (1) NEW SINGLE-GANG BACK BOX FOR HOUSE LIGHTING CONTROL STATION AT 48" AFF.
 - ROUTE ONE (1) 3/4" EMT CONDUIT FROM BACK BOX TO NEW HOUSE LIGHTING CONTROL PROCESSOR "LP-1" FOR LOW VOLTAGE LIGHTING CONTROL SIGNALS.
 - COORDINATE LOCATION FOR NEW CATWALK-LEVEL HOUSE LIGHTING CONTROL STATION WITH OWNER AND INSTALL WHERE DIRECTED.
- PROVIDE ONE (1) WALL-MOUNTED EMERGENCY LIGHTING TRANSFER SWITCH "ELT-1" EQUAL TO ETC MODEL ELTS2-1-D-120-06 INSTALLED 48" AFF (TO CENTER OF NEMA ENCLOSURE) FOR SIX (6) EMERGENCY HOUSE LIGHTING CIRCUITS. ROUTE ONE (1) 3/4" CONDUIT TO "EDK" FOR LOW VOLTAGE PANIC SIGNAL.
- PROVIDE CONDUITS FOR ELECTRICAL POWER FROM WALL-MOUNTED EMERGENCY LIGHTING TRANSFER SWITCH "ELT-1" AND HARDWIRE AS FOLLOWS:
 - ONE (1) CONDUIT SIZED AS REQUIRED BY NATIONAL AND LOCAL ELECTRICAL CODES FOR SIX (6) 120 VAC SINGLE PHASE 20A BRANCH CIRCUITS SHALL BE ROUTED TO THE EMERGENCY POWER BREAKER PANEL. HARDWIRE EMERGENCY POWER INTO "ELT-1" FOR PROVIDING ELECTRICAL POWER DURING AN EMERGENCY. EMERGENCY POWER SHALL BE SPECIFIED BY DIVISION 26. COORDINATE REQUIREMENTS FOR EMERGENCY LIGHTING WITH DIVISION 26.
 - ONE CONDUIT SIZED AS REQUIRED BY NATIONAL AND LOCAL ELECTRICAL CODES FOR SIX (6) 120 VAC SINGLE PHASE 20A BRANCH CIRCUITS SHALL BE ROUTED TO RELAY PANEL "RP-1" FOR HOUSE LIGHTING OPERATION DURING NORMAL POWER.
 - NORMAL POWER SENSE FOR "ELT-1" SHALL BE PROVIDED VIA PANIC SIGNAL FROM EMERGENCY BYPASS DETECTION KIT "EDK". NORMAL POWER SENSE TO BE SPECIFIED/VERIFIED BY DIVISION 26.
 - SEE ELECTRICAL DRAWINGS FOR CONDUIT REQUIREMENTS BETWEEN TRANSFER SWITCH AND NORMAL/EMERGENCY HOUSE LIGHTING FIXTURES.



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L-102

AUDITORIUM NEW WORK PLAN - CATWALK

SCALE: 1/4" = 1'-0"



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FLOOR PLANS - NEW WORK

Sheet No:
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1. ALL CONTROL WIRING IS PROVIDED BY DIVISION 26 (UNLESS NOTED OTHERWISE).

2. ALL ETC RUNS SHALL BE CONTINUOUS, UNSPICED RUNS (LESS THAN 300 FEET (90 METERS)). ALL NETWORK CONNECTIONS TO BE TIA/EIA-568B.

3. TOTAL COMBINED LENGTH OF UNISON WIRING RUNS CANNOT EXCEED 100 FEET (30 METERS).

4. ALL TOUCHSCREEN STATIONS REQUIRE (1) #14 AWG, STRANDED GROUND WIRE.

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