Contract: A-01: Demolition

BID FORM

For Bids Due: January ~~14~~ **21**, 2020 To: ***Appoquinimink School District***
118 South Sixth Street
Odessa, DE 19730

Name of Bidder: _____

Bidder Address: _____

_____

Contact Name: _____ E-Mail Address: _____

Delaware Business License No.:_____ Taxpayer ID No.: _____

(Other License Nos.): _____
(A copy of Bidder's Delaware Business License must be attached to this form.)

Phone No.: ( ) _____ - _____ Fax No.: ( ) _____ - _____

The undersigned, representing that he has read and understands the Bidding Documents and that this bid is made in accordance therewith, that he has visited the site and has familiarized himself with the local conditions under which the Work is to be performed, and that his bid is based upon the materials, systems and equipment described in the Bidding Documents without exception, hereby proposes and agrees to provide all labor, materials, plant, equipment, supplies, transport and other facilities required to execute the work described by the aforesaid documents for the lump sum itemized below:

$_____ ($_____)

NOTE: The difference in price between Add and Deduct in the above Unit Prices should not exceed fifteen percent (15%).

I/We acknowledge Addendums numbered _____ and the price(s) submitted include any cost/schedule impact they may have.

This bid shall remain valid and cannot be withdrawn for sixty (60) days from the date of opening of bids, and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid.

The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.

This bid is based upon work being accomplished by the Sub-Contractors named on the list attached to this bid.

The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds, and Insurance Certificates, required by the Contract Documents.

I am / We are an Individual / a Partnership / a Corporation

By _____ Trading as _____
(Individual's / General Partner's / Corporate Name)

_____
(State of Corporation)

Business Address:_____
_____
_____
_____

Witness: _____ By: _____
(Authorized Signature)

(SEAL) _____
(Title)

Date: _____

ATTACHMENTS

Sub-Contractor List
Non-Collusion Statement
Bid Bond
Consent of Surety
Affidavit of Employee Drug Testing Program
Delaware Business License
Town of Middletown Contractor's License
(Others as Required by Project Manuals)

SUBCONTRACTOR LIST

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor must be listed for each category where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the Owner, **it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.**

Subcontractor Category	Subcontractor	Address (City & State)	**Subcontractors tax payer ID # or Delaware Business license #**
1. Demolition			
2. Waste Hauling			

NON-COLLUSION STATEMENT

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date **January 14, 2020.**

All the terms and conditions of **Contract: A-01: Demolition** have been thoroughly examined and are understood.

NAME OF BIDDER: _____

AUTHORIZED REPRESENTATIVE (TYPED): _____

AUTHORIZED REPRESENTATIVE (SIGNATURE): _____

TITLE: _____

ADDRESS OF BIDDER: _____

_____

_____

PHONE NUMBER: _____

Sworn to and Subscribed before me this _____ day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

BID BOND

TO ACCOMPANY PROPOSAL
(Not necessary if security is used)

KNOW ALL MEN BY THESE PRESENTS That: _____of _____in the County of _____ and State of _____ as Principal, and _____of _____in the County of _____ _____ and State of _____ as Surety, legally authorized to do business in the State of Delaware ('State"), are held and firmly unto the **Appoquinimink School District** in the sum of _____ Dollars (S_____), or percent not to exceed _____ _____ Dollars (S_____) of amount of bid on Contract No. _____ to be paid to the **Appoquinimink School District** for the use and benefit of the **Appoquinimink School District** for which payment well and truly to be made, we do bind ourselves, our and each of our heirs, executors, administrators, and successors, jointly and severally for and in the whole firmly by these presents.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH That if the above bounden Principal who has submitted to the **Appoquinimink School District** a certain proposal to enter into this contract for the furnishing of certain material and/or services within the State, shall be awarded this Contract, and if said Principal shall well and truly enter into and execute this Contract as may be required by the terms of this Contract and approved by the **Appoquinimink School District** this Contract to be entered into within twenty days after the date of official notice of the award thereof in accordance with the terms of said proposal, then this obligation shall be void or else to be and remain in full force and virtue.

Sealed with _____seal and dated this____day of _____in the year of our Lord two thousand and _____(20__).

SEALED, AND DELIVERED IN THE PRESENCE OF

_____
Name of Bidder (Organization)

Corporate Seal

By:_____
Authorized Signature

Attest _____

_____
Title

_____
Name of Surety

Witness_____

_____

_____
Title

CONSENT OF SURETY

DATE_____

To: **Appoquinimink School District**
118 South Sixth Street
Odessa, DE 19730

Gentlemen:

We, the _____

_____
(Surety Company's Address)

_____

a Surety Company authorized to do business in the State of Delaware hereby agrees that if

_____
(Contractor)

_____
(Address)

_____

is awarded the Contract No. _____

We will write the required Performance and/or Labor and Material Bond required by Paragraph 9 of the Instructions to Bidders.

_____
(Surety Company)

By _____
(Attorney-in-Fact)

AFFIDAVIT
OF
EMPLOYEE DRUG TESTING PROGRAM

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds.

We hereby certify that we have in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for our employees on the jobsite, including subcontractors that complies with this regulation:

Contractor/Subcontractor Name: _____

Contractor/Subcontractor Address: _____

_____

_____

Authorized Representative (typed or printed): _____

Authorized Representative (signature): _____

Title: _____

Sworn to and Subscribed before me this _____day of_____ 20_____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

Contract: A-02: Sitework

BID FORM

For Bids Due: January ~~14~~ **21**, 2020 To: ***Appoquinimink School District***
118 South Sixth Street
Odessa, DE 19730

Name of Bidder: _____

Bidder Address: _____

_____

Contact Name: _____ E-Mail Address: _____

Delaware Business License No.: _____ Taxpayer ID No.: _____

(Other License Nos.): _____
(A copy of Bidder's Delaware Business License must be attached to this form.)

Phone No.: ( ) _____ - _____ Fax No.: ( ) _____ - _____

The undersigned, representing that he has read and understands the Bidding Documents and that this bid is made in accordance therewith, that he has visited the site and has familiarized himself with the local conditions under which the Work is to be performed, and that his bid is based upon the materials, systems and equipment described in the Bidding Documents without exception, hereby proposes and agrees to provide all labor, materials, plant, equipment, supplies, transport and other facilities required to execute the work described by the aforesaid documents for the lump sum itemized below:

$_____ ($_____)

ALTERNATES
Alternate prices conform to applicable project specification section. Refer to specifications for a complete description of the following Alternates. An "ADD" or "DEDUCT" amount is indicated by the crossed out part that does not apply.

Alternate No. 1: Increase the Size of the Gymnasium

Add/Deduct _____($_____)

Alternate No. 8: Add Outdoor Classroom in the Courtyard

Add/Deduct _____($_____)

Alternate No. 9: Courtyard Landscaping

Add/Deduct _____($_____)

Alternate No. 10: Courtyard Irrigation

Add/Deduct _____($_____)

UNIT PRICES

Unit prices conform to applicable project specification section. Refer to the specifications for a complete description of the following Unit Prices:

		BULK		TRENCH	
		Add	Deduct	Add	Deduct
1.	Unit Price No. 1 Price per cubic yard for excavation disposal of unsatisfactory material.	_____	_____	_____	_____
2.	Unit Price No. 2 Price per square foot for replacement of 4" concrete sidewalk and stone base	_____	_____	_____	_____
3.	Unit Price No. 4 Price per square yard for full depth pavement replacement	_____	_____	_____	_____

NOTE: The difference in price between Add and Deduct in the above Unit Prices should not exceed fifteen percent (15%).

I/We acknowledge Addendums numbered _____ and the price(s) submitted include any cost/schedule impact they may have.

This bid shall remain valid and cannot be withdrawn for sixty (60) days from the date of opening of bids, and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid.

The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.

This bid is based upon work being accomplished by the Sub-Contractors named on the list attached to this bid.

The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or

indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds, and Insurance Certificates, required by the Contract Documents.

I am / We are an Individual / a Partnership / a Corporation

By _____ Trading as _____
(Individual's / General Partner's / Corporate Name)

_____
(State of Corporation)

Business Address:_____
_____
_____
_____

Witness: _____ By: _____
(Authorized Signature)

(SEAL) _____
(Title)

Date: _____

ATTACHMENTS

Sub-Contractor List
Non-Collusion Statement
Bid Bond
Consent of Surety
Affidavit of Employee Drug Testing Program
Delaware Business License
Town of Middletown Contractor's License
(Others as Required by Project Manuals)

SUBCONTRACTOR LIST

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor must be listed for each category where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the Owner, **it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.**

Subcontractor Category	Subcontractor	Address (City & State)	**Subcontractors tax payer ID # or Delaware Business license #**
1. Sitework			
2. Paving			
3. Landscaping			
4. Concrete			

NON-COLLUSION STATEMENT

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date **January 14, 2020.**

All the terms and conditions of **Contract: A-02: Sitework** have been thoroughly examined and are understood.

NAME OF BIDDER: _____

AUTHORIZED REPRESENTATIVE (TYPED): _____

AUTHORIZED REPRESENTATIVE (SIGNATURE): _____

TITLE: _____

ADDRESS OF BIDDER: _____

_____

_____

PHONE NUMBER: _____

Sworn to and Subscribed before me this _____ day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

BID BOND

TO ACCOMPANY PROPOSAL
(Not necessary if security is used)

KNOW ALL MEN BY THESE PRESENTS That: _____of _____in the County of _____ and State of _____ as Principal, and _____of _____in the County of _____ _____ and State of _____ as Surety, legally authorized to do business in the State of Delaware ('State"), are held and firmly unto the **Appoquinimink School District** in the sum of _____ Dollars (S_____), or percent not to exceed _____ _____ Dollars (S_____) of amount of bid on Contract No. _____ to be paid to the **Appoquinimink School District** for the use and benefit of the **Appoquinimink School District** for which payment well and truly to be made, we do bind ourselves, our and each of our heirs, executors, administrators, and successors, jointly and severally for and in the whole firmly by these presents.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH That if the above bounden Principal who has submitted to the **Appoquinimink School District** a certain proposal to enter into this contract for the furnishing of certain material and/or services within the State, shall be awarded this Contract, and if said Principal shall well and truly enter into and execute this Contract as may be required by the terms of this Contract and approved by the **Appoquinimink School District** this Contract to be entered into within twenty days after the date of official notice of the award thereof in accordance with the terms of said proposal, then this obligation shall be void or else to be and remain in full force and virtue.

Sealed with _____seal and dated this____day of _____in the year of our Lord two thousand and _____(20__).

SEALED, AND DELIVERED IN THE PRESENCE OF

_____
Name of Bidder (Organization)

Corporate Seal

By:_____
Authorized Signature

Attest _____

_____
Title

_____
Name of Surety

Witness_____

_____

_____
Title

CONSENT OF SURETY

DATE_____

To: **Appoquinimink School District**
118 South Sixth Street
Odessa, DE 19730

Gentlemen:

We, the _____

_____
(Surety Company's Address)

_____

a Surety Company authorized to do business in the State of Delaware hereby agrees that if

_____
(Contractor)

_____
(Address)

_____

is awarded the Contract No. _____

We will write the required Performance and/or Labor and Material Bond required by Paragraph 9 of the Instructions to Bidders.

_____
(Surety Company)

By _____
(Attorney-in-Fact)

AFFIDAVIT
OF
EMPLOYEE DRUG TESTING PROGRAM

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds.

We hereby certify that we have in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for our employees on the jobsite, including subcontractors that complies with this regulation:

Contractor/Subcontractor Name: _____

Contractor/Subcontractor Address: _____

_____

_____

Authorized Representative (typed or printed): _____

Authorized Representative (signature): _____

Title: _____

Sworn to and Subscribed before me this _____day of_____ 20_____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

Contract: A-03: Concrete

BID FORM

For Bids Due: January ~~14~~ **21**, 2020 To: ***Appoquinimink School District***
118 South Sixth Street
Odessa, DE 19730

Name of Bidder: _____

Bidder Address: _____

_____

Contact Name: _____ E-Mail Address: _____

Delaware Business License No.: _____ Taxpayer ID No.: _____

(Other License Nos.): _____
(A copy of Bidder's Delaware Business License must be attached to this form.)

Phone No.: ( ) _____ - _____ Fax No.: ( ) _____ - _____

The undersigned, representing that he has read and understands the Bidding Documents and that this bid is made in accordance therewith, that he has visited the site and has familiarized himself with the local conditions under which the Work is to be performed, and that his bid is based upon the materials, systems and equipment described in the Bidding Documents without exception, hereby proposes and agrees to provide all labor, materials, plant, equipment, supplies, transport and other facilities required to execute the work described by the aforesaid documents for the lump sum itemized below:

$_____ ($_____)

ALTERNATES
Alternate prices conform to applicable project specification section. Refer to specifications for a complete description of the following Alternates. An "ADD" or "DEDUCT" amount is indicated by the crossed out part that does not apply.

Alternate No. 1: Increase the Size of the Gymnasium

Add/Deduct _____($_____)

Alternate No. 3: Add Decorative Cast Stone at Windows

Add/Deduct _____($_____)

UNIT PRICES

Unit prices conform to applicable project specification section. Refer to the specifications for a complete description of the following Unit Prices:

		BULK		TRENCH	
		Add	Deduct	Add	Deduct
1.	Unit Price No. 3 Price per cubic yard for replacement of reinforced CIP conc. slab on grade	_____	_____	_____	_____

I/We acknowledge Addendums numbered _____ and the price(s) submitted include any cost/schedule impact they may have.

This bid shall remain valid and cannot be withdrawn for sixty (60) days from the date of opening of bids, and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid.

The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.

This bid is based upon work being accomplished by the Sub-Contractors named on the list attached to this bid.

The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds, and Insurance Certificates, required by the Contract Documents.

I am / We are an Individual / a Partnership / a Corporation

By _____ Trading as _____
(Individual's / General Partner's / Corporate Name)

_____
(State of Corporation)

Business Address:_____
_____
_____
_____

Witness: _____ By: _____
(Authorized Signature)

(SEAL) _____
(Title)

Date: _____

ATTACHMENTS

Sub-Contractor List
Non-Collusion Statement
Bid Bond
Consent of Surety
Affidavit of Employee Drug Testing Program
Delaware Business License
Town of Middletown Contractor's License
(Others as Required by Project Manuals)

SUBCONTRACTOR LIST

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor must be listed for each category where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the Owner, **it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.**

Subcontractor Category	Subcontractor	Address (City & State)	**Subcontractors tax payer ID # or Delaware Business license #**
1. Concrete	_____	_____	_____

NON-COLLUSION STATEMENT

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date **January 14, 2020.**

All the terms and conditions of **Contract: A-03: Concrete** have been thoroughly examined and are understood.

NAME OF BIDDER: _____

AUTHORIZED REPRESENTATIVE (TYPED): _____

AUTHORIZED REPRESENTATIVE (SIGNATURE): _____

TITLE: _____

ADDRESS OF BIDDER: _____

_____

_____

PHONE NUMBER: _____

Sworn to and Subscribed before me this _____ day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

BID BOND

TO ACCOMPANY PROPOSAL
(Not necessary if security is used)

KNOW ALL MEN BY THESE PRESENTS That: _____of _____in the County of _____ and State of _____ as Principal, and _____of _____in the County of _____ _____ and State of _____ as Surety, legally authorized to do business in the State of Delaware ('State"), are held and firmly unto the **Appoquinimink School District** in the sum of _____ Dollars (S_____), or percent not to exceed _____ _____ Dollars (S_____) of amount of bid on Contract No. _____ to be paid to the **Appoquinimink School District** for the use and benefit of the **Appoquinimink School District** for which payment well and truly to be made, we do bind ourselves, our and each of our heirs, executors, administrators, and successors, jointly and severally for and in the whole firmly by these presents.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH That if the above bounden Principal who has submitted to the **Appoquinimink School District** a certain proposal to enter into this contract for the furnishing of certain material and/or services within the State, shall be awarded this Contract, and if said Principal shall well and truly enter into and execute this Contract as may be required by the terms of this Contract and approved by the **Appoquinimink School District** this Contract to be entered into within twenty days after the date of official notice of the award thereof in accordance with the terms of said proposal, then this obligation shall be void or else to be and remain in full force and virtue.

Sealed with _____seal and dated this____day of _____in the year of our Lord two thousand and _____(20__).

SEALED, AND DELIVERED IN THE PRESENCE OF

_____
Name of Bidder (Organization)

Corporate Seal

By:_____
Authorized Signature

Attest _____

_____
Title

_____
Name of Surety

Witness_____

_____

_____
Title

CONSENT OF SURETY

DATE_____

To: **Appoquinimink School District**
118 South Sixth Street
Odessa, DE 19730

Gentlemen:

We, the _____

_____
(Surety Company's Address)

_____

a Surety Company authorized to do business in the State of Delaware hereby agrees that if

_____
(Contractor)

_____
(Address)

_____

is awarded the Contract No. _____

We will write the required Performance and/or Labor and Material Bond required by Paragraph 9 of the Instructions to Bidders.

_____
(Surety Company)

By _____
(Attorney-in-Fact)

AFFIDAVIT
OF
EMPLOYEE DRUG TESTING PROGRAM

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds.

We hereby certify that we have in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for our employees on the jobsite, including subcontractors that complies with this regulation:

Contractor/Subcontractor Name: _____

Contractor/Subcontractor Address: _____

_____

_____

Authorized Representative (typed or printed): _____

Authorized Representative (signature): _____

Title: _____

Sworn to and Subscribed before me this _____day of_____ 20_____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

Contract: A-04: Masonry

BID FORM

For Bids Due: January ~~14~~ **21**, 2020 To: ***Appoquinimink School District***
118 South Sixth Street
Odessa, DE 19730

Name of Bidder: _____

Bidder Address: _____

_____

Contact Name: _____ E-Mail Address: _____

Delaware Business License No.: _____ Taxpayer ID No.: _____

(Other License Nos.): _____
(A copy of Bidder's Delaware Business License must be attached to this form.)

Phone No.: ( ) _____ - _____ Fax No.: ( ) _____ - _____

The undersigned, representing that he has read and understands the Bidding Documents and that this bid is made in accordance therewith, that he has visited the site and has familiarized himself with the local conditions under which the Work is to be performed, and that his bid is based upon the materials, systems and equipment described in the Bidding Documents without exception, hereby proposes and agrees to provide all labor, materials, plant, equipment, supplies, transport and other facilities required to execute the work described by the aforesaid documents for the lump sum itemized below:

$_____ ($_____)

ALTERNATES
Alternate prices conform to applicable project specification section. Refer to specifications for a complete description of the following Alternates. An "ADD" or "DEDUCT" amount is indicated by the crossed out part that does not apply.

Alternate No. 1: Increase the Size of the Gymnasium

Add/Deduct _____($_____)

Alternate No. 2a: Change Veneer on Gymnasium (Alt. No. 1 – Base Bid)

Add/Deduct _____($_____)

Alternate No. 2b: Change Veneer on Gymnasium (Alt. No. 1 – Alternate)

Add/Deduct _____($_____)

Alternate No. 3: Add Decorative Cast Stone at Windows

Add/Deduct _____($_____)

Alternate No. 8: Add Outdoor Classroom in the Courtyard

Add/Deduct _____($_____)

I/We acknowledge Addendums numbered _____ and the price(s) submitted include any cost/schedule impact they may have.

This bid shall remain valid and cannot be withdrawn for sixty (60) days from the date of opening of bids, and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid.

The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.

This bid is based upon work being accomplished by the Sub-Contractors named on the list attached to this bid.

The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds, and Insurance Certificates, required by the Contract Documents.

I am / We are an Individual / a Partnership / a Corporation

By _____ Trading as _____
(Individual's / General Partner's / Corporate Name)

_____
(State of Corporation)

Business Address:_____
_____
_____
_____

Witness: _____ By: _____
(Authorized Signature)

(SEAL) _____
(Title)

Date: _____

ATTACHMENTS

Sub-Contractor List
Non-Collusion Statement
Bid Bond
Consent of Surety
Affidavit of Employee Drug Testing Program
Delaware Business License
Town of Middletown Contractor's License
(Others as Required by Project Manuals)

SUBCONTRACTOR LIST

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor must be listed for each category where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the Owner, **it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.**

Subcontractor Category	Subcontractor	Address (City & State)	**Subcontractors tax payer ID # or Delaware Business license #**
1. Masonry	_____	_____	_____
2. Caulking	_____	_____	_____
3. Spray Foam Insulator	_____	_____	_____

NON-COLLUSION STATEMENT

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date **January 14, 2020.**

All the terms and conditions of **Contract: A-04: Masonry** have been thoroughly examined and are understood.

NAME OF BIDDER: _____

AUTHORIZED REPRESENTATIVE (TYPED): _____

AUTHORIZED REPRESENTATIVE (SIGNATURE): _____

TITLE: _____

ADDRESS OF BIDDER: _____

_____

_____

PHONE NUMBER: _____

Sworn to and Subscribed before me this _____ day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

BID BOND

TO ACCOMPANY PROPOSAL
(Not necessary if security is used)

KNOW ALL MEN BY THESE PRESENTS That: _____of _____in the County of _____ and State of _____ as Principal, and _____of _____in the County of _____ _____ and State of _____ as Surety, legally authorized to do business in the State of Delaware ('State"), are held and firmly unto the **Appoquinimink School District** in the sum of _____ Dollars (S_____), or percent not to exceed _____ _____ Dollars (S_____) of amount of bid on Contract No. _____ to be paid to the **Appoquinimink School District** for the use and benefit of the **Appoquinimink School District** for which payment well and truly to be made, we do bind ourselves, our and each of our heirs, executors, administrators, and successors, jointly and severally for and in the whole firmly by these presents.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH That if the above bounden Principal who has submitted to the **Appoquinimink School District** a certain proposal to enter into this contract for the furnishing of certain material and/or services within the State, shall be awarded this Contract, and if said Principal shall well and truly enter into and execute this Contract as may be required by the terms of this Contract and approved by the **Appoquinimink School District** this Contract to be entered into within twenty days after the date of official notice of the award thereof in accordance with the terms of said proposal, then this obligation shall be void or else to be and remain in full force and virtue.

Sealed with _____seal and dated this____day of _____in the year of our Lord two thousand and _____(20__).

SEALED, AND DELIVERED IN THE PRESENCE OF

_____
Name of Bidder (Organization)

Corporate Seal

By:_____
Authorized Signature

Attest _____

_____
Title

_____
Name of Surety

Witness_____

_____

_____
Title

CONSENT OF SURETY

DATE_____

To: **Appoquinimink School District**
118 South Sixth Street
Odessa, DE 19730

Gentlemen:

We, the _____

_____
(Surety Company's Address)

_____

a Surety Company authorized to do business in the State of Delaware hereby agrees that if

_____
(Contractor)

_____
(Address)

_____

is awarded the Contract No. _____

We will write the required Performance and/or Labor and Material Bond required by Paragraph 9 of the Instructions to Bidders.

_____
(Surety Company)

By _____
(Attorney-in-Fact)

AFFIDAVIT
OF
EMPLOYEE DRUG TESTING PROGRAM

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds.

We hereby certify that we have in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for our employees on the jobsite, including subcontractors that complies with this regulation:

Contractor/Subcontractor Name: _____

Contractor/Subcontractor Address: _____

_____

_____

Authorized Representative (typed or printed): _____

Authorized Representative (signature): _____

Title: _____

Sworn to and Subscribed before me this _____day of_____ 20_____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

Contract: A-05: Structural Steel & Miscellaneous Metals

BID FORM

For Bids Due: January ~~14~~ **21**, 2020 To: ***Appoquinimink School District***
118 South Sixth Street
Odessa, DE 19730

Name of Bidder: _____

Bidder Address: _____

_____

Contact Name: _____ E-Mail Address: _____

Delaware Business License No.: _____ Taxpayer ID No.: _____

(Other License Nos.): _____
(A copy of Bidder's Delaware Business License must be attached to this form.)

Phone No.: ( ) _____ - _____ Fax No.: ( ) _____ - _____

The undersigned, representing that he has read and understands the Bidding Documents and that this bid is made in accordance therewith, that he has visited the site and has familiarized himself with the local conditions under which the Work is to be performed, and that his bid is based upon the materials, systems and equipment described in the Bidding Documents without exception, hereby proposes and agrees to provide all labor, materials, plant, equipment, supplies, transport and other facilities required to execute the work described by the aforesaid documents for the lump sum itemized below:

1. **LUMP SUM PRICE FOR THE CONTRACT WORK** **$**_____
2. **LUMP SUM PRICE FOR BIM COORDINATION** **$**_____

TOTAL BASE BID AMOUNT **$**_____

(AMOUNT IN DOLLARS & CENTS)

$_____

(TOTAL AMOUNT IN WRITTEN WORDS)

(BPA ADDENDUM NO. 4)

ALTERNATES
Alternate prices conform to applicable project specification section. Refer to specifications for a complete description of the following Alternates. An "ADD" or "DEDUCT" amount is indicated by the crossed out part that does not apply.

Alternate No. 1: Increase the Size of the Gymnasium

Add/Deduct _____ ($_____)

Alternate No. 2a: Change Veneer on Gymnasium (Alt. No. 1 – Base Bid)

Add/Deduct _____ ($_____)

Alternate No. 2b: Change Veneer on Gymnasium (Alt. No. 1 – Alternate)

Add/Deduct _____ ($_____)

Alternate No. 4: Operable Windows

Add/Deduct _____ ($_____)

Alternate No. 8: Add Outdoor Classroom in the Courtyard

Add/Deduct _____ ($_____)

Alternate No. 9: Courtyard Landscaping

Add/Deduct _____ ($_____)

Alternate No. 11: Add FRP Doors/Frames at Classrooms into Courtyard

Add/Deduct _____ ($_____)

I/We acknowledge Addendums numbered _____ and the price(s) submitted include any cost/schedule impact they may have.

This bid shall remain valid and cannot be withdrawn for sixty (60) days from the date of opening of bids, and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid.

The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.

This bid is based upon work being accomplished by the Sub-Contractors named on the list attached to this bid.

The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or

indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds, and Insurance Certificates, required by the Contract Documents.

I am / We are an Individual / a Partnership / a Corporation

By _____ Trading as _____
(Individual's / General Partner's / Corporate Name)

_____
(State of Corporation)

Business Address:_____
_____
_____
_____

Witness: _____ By: _____
(Authorized Signature)

(SEAL) _____
(Title)

Date: _____

ATTACHMENTS

Sub-Contractor List
Non-Collusion Statement
Bid Bond
Consent of Surety
Affidavit of Employee Drug Testing Program
Delaware Business License
Town of Middletown Contractor's License
(Others as Required by Project Manuals)

SUBCONTRACTOR LIST

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor must be listed for each category where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the Owner, **it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.**

Subcontractor Category	Subcontractor	Address (City & State)	**Subcontractors tax payer ID # or Delaware Business license #**
1. Structural Steel			
2. Misc. Metals			

NON-COLLUSION STATEMENT

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date **January 14, 2020.**

All the terms and conditions of **Contract: A-05: Structural Steel & Miscellaneous Metals** have been thoroughly examined and are understood.

NAME OF BIDDER: _____

AUTHORIZED REPRESENTATIVE (TYPED): _____

AUTHORIZED REPRESENTATIVE (SIGNATURE): _____

TITLE: _____

ADDRESS OF BIDDER: _____

_____

_____

PHONE NUMBER: _____

Sworn to and Subscribed before me this _____ day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

BID BOND

TO ACCOMPANY PROPOSAL
(Not necessary if security is used)

KNOW ALL MEN BY THESE PRESENTS That: _____of _____in the County of _____ and State of _____ as Principal, and _____of _____in the County of _____ _____ and State of _____ as Surety, legally authorized to do business in the State of Delaware ('State"), are held and firmly unto the **Appoquinimink School District** in the sum of _____ Dollars (S_____), or percent not to exceed _____ _____ Dollars (S_____) of amount of bid on Contract No. _____ to be paid to the **Appoquinimink School District** for the use and benefit of the **Appoquinimink School District** for which payment well and truly to be made, we do bind ourselves, our and each of our heirs, executors, administrators, and successors, jointly and severally for and in the whole firmly by these presents.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH That if the above bounden Principal who has submitted to the **Appoquinimink School District** a certain proposal to enter into this contract for the furnishing of certain material and/or services within the State, shall be awarded this Contract, and if said Principal shall well and truly enter into and execute this Contract as may be required by the terms of this Contract and approved by the **Appoquinimink School District** this Contract to be entered into within twenty days after the date of official notice of the award thereof in accordance with the terms of said proposal, then this obligation shall be void or else to be and remain in full force and virtue.

Sealed with _____seal and dated this____day of _____in the year of our Lord two thousand and _____(20__).

SEALED, AND DELIVERED IN THE PRESENCE OF

_____
Name of Bidder (Organization)

Corporate Seal

By:_____
Authorized Signature

Attest _____

_____
Title

_____
Name of Surety

Witness_____

_____

_____
Title

CONSENT OF SURETY

DATE_____

To: **Appoquinimink School District**
118 South Sixth Street
Odessa, DE 19730

Gentlemen:

We, the _____

_____
(Surety Company's Address)

_____

a Surety Company authorized to do business in the State of Delaware hereby agrees that if

_____
(Contractor)

_____
(Address)

_____

is awarded the Contract No. _____

We will write the required Performance and/or Labor and Material Bond required by Paragraph 9 of the Instructions to Bidders.

_____
(Surety Company)

By _____
(Attorney-in-Fact)

AFFIDAVIT
OF
EMPLOYEE DRUG TESTING PROGRAM

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds.

We hereby certify that we have in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for our employees on the jobsite, including subcontractors that complies with this regulation:

Contractor/Subcontractor Name: _____

Contractor/Subcontractor Address: _____

_____

_____

Authorized Representative (typed or printed): _____

Authorized Representative (signature): _____

Title: _____

Sworn to and Subscribed before me this _____day of_____ 20_____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

Contract: A-06: Carpentry & General Work

BID FORM

For Bids Due: January ~~14~~ **21**, 2020 To: ***Appoquinimink School District***
118 South Sixth Street
Odessa, DE 19730

Name of Bidder: _____

Bidder Address: _____

_____

Contact Name: _____ E-Mail Address: _____

Delaware Business License No.: _____ Taxpayer ID No.: _____

(Other License Nos.): _____
(A copy of Bidder's Delaware Business License must be attached to this form.)

Phone No.: ( ) _____ - _____ Fax No.: ( ) _____ - _____

The undersigned, representing that he has read and understands the Bidding Documents and that this bid is made in accordance therewith, that he has visited the site and has familiarized himself with the local conditions under which the Work is to be performed, and that his bid is based upon the materials, systems and equipment described in the Bidding Documents without exception, hereby proposes and agrees to provide all labor, materials, plant, equipment, supplies, transport and other facilities required to execute the work described by the aforesaid documents for the lump sum itemized below:

$_____ ($_____)

ALTERNATES
Alternate prices conform to applicable project specification section. Refer to specifications for a complete description of the following Alternates. An "ADD" or "DEDUCT" amount is indicated by the crossed out part that does not apply.

Alternate No. 1: Increase the Size of the Gymnasium

Add/Deduct _____($_____)

Alternate No. 2a: Change Veneer on Gymnasium (Alt. No. 1 – Base Bid)

Add/Deduct _____($_____)

Alternate No. 2b: Change Veneer on Gymnasium (Alt. No. 1 – Alternate)

Add/Deduct _____ ($_____)

Alternate No. 3: Add Decorative Cast Stone at Windows

Add/Deduct _____ ($_____)

Alternate No. 4: Operable Windows

Add/Deduct _____ ($_____)

Alternate No. 5a: Change Gymnasium Floor to Wood (Alt. No. 1 – Base Bid)

Add/Deduct _____ ($_____)

Alternate No. 5b: Change Gymnasium Floor to Wood (Alt. No. 1 – Alternate)

Add/Deduct _____ ($_____)

Alternate No. 7: Add Decorative Ceilings in Common Areas

Add/Deduct _____ ($_____)

Alternate No. 8: Add Outdoor Classroom in the Courtyard

Add/Deduct _____ ($_____)

Alternate No. 11: Add FRP Doors/Frames at Classrooms into Courtyard

Add/Deduct _____ ($_____)

I/We acknowledge Addendums numbered _____ and the price(s) submitted include any cost/schedule impact they may have.

This bid shall remain valid and cannot be withdrawn for sixty (60) days from the date of opening of bids, and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid.

The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.

This bid is based upon work being accomplished by the Sub-Contractors named on the list attached to this bid.

The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the

contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds, and Insurance Certificates, required by the Contract Documents.

I am / We are an Individual / a Partnership / a Corporation

By _____ Trading as _____
(Individual's / General Partner's / Corporate Name)

_____
(State of Corporation)

Business Address:_____
_____
_____
_____

Witness: _____ By: _____
(Authorized Signature)

(SEAL) _____
(Title)

Date: _____

ATTACHMENTS

Sub-Contractor List
Non-Collusion Statement
Bid Bond
Consent of Surety
Affidavit of Employee Drug Testing Program
Delaware Business License
Town of Middletown Contractor's License
(Others as Required by Project Manuals)

SUBCONTRACTOR LIST

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor must be listed for each category where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the Owner, **it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.**

Subcontractor Category	Subcontractor	Address (City & State)	**Subcontractors tax payer ID # or Delaware Business license #**
1. Rough Carpentry			
2. Overhead Doors			
3. Caulking			
4. Doors, Frames & Hardware			
5. Wheelchair Lift			

NON-COLLUSION STATEMENT

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date **January 14, 2020.**

All the terms and conditions of **Contract: A-06: Carpentry & General Work** have been thoroughly examined and are understood.

NAME OF BIDDER: _____

AUTHORIZED REPRESENTATIVE (TYPED): _____

AUTHORIZED REPRESENTATIVE (SIGNATURE): _____

TITLE: _____

ADDRESS OF BIDDER: _____

_____

_____

PHONE NUMBER: _____

Sworn to and Subscribed before me this _____ day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

BID BOND

TO ACCOMPANY PROPOSAL
(Not necessary if security is used)

KNOW ALL MEN BY THESE PRESENTS That: _____of _____in the County of _____ and State of _____ as Principal, and _____of _____in the County of _____ _____ and State of _____ as Surety, legally authorized to do business in the State of Delaware ('State"), are held and firmly unto the **Appoquinimink School District** in the sum of _____ Dollars (S_____), or percent not to exceed _____ _____ Dollars (S_____) of amount of bid on Contract No. _____ to be paid to the **Appoquinimink School District** for the use and benefit of the **Appoquinimink School District** for which payment well and truly to be made, we do bind ourselves, our and each of our heirs, executors, administrators, and successors, jointly and severally for and in the whole firmly by these presents.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH That if the above bounden Principal who has submitted to the **Appoquinimink School District** a certain proposal to enter into this contract for the furnishing of certain material and/or services within the State, shall be awarded this Contract, and if said Principal shall well and truly enter into and execute this Contract as may be required by the terms of this Contract and approved by the **Appoquinimink School District** this Contract to be entered into within twenty days after the date of official notice of the award thereof in accordance with the terms of said proposal, then this obligation shall be void or else to be and remain in full force and virtue.

Sealed with _____seal and dated this____day of _____in the year of our Lord two thousand and _____(20__).

SEALED, AND DELIVERED IN THE PRESENCE OF

_____
Name of Bidder (Organization)

Corporate Seal

By:_____
Authorized Signature

Attest _____

_____
Title

_____
Name of Surety

Witness_____

_____

_____
Title

CONSENT OF SURETY

DATE_____

To: **Appoquinimink School District**
118 South Sixth Street
Odessa, DE 19730

Gentlemen:

We, the _____

_____
(Surety Company's Address)

_____

a Surety Company authorized to do business in the State of Delaware hereby agrees that if

_____
(Contractor)

_____
(Address)

_____

is awarded the Contract No. _____

We will write the required Performance and/or Labor and Material Bond required by Paragraph 9 of the Instructions to Bidders.

_____
(Surety Company)

By _____
(Attorney-in-Fact)

AFFIDAVIT
OF
EMPLOYEE DRUG TESTING PROGRAM

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds.

We hereby certify that we have in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for our employees on the jobsite, including subcontractors that complies with this regulation:

Contractor/Subcontractor Name: _____

Contractor/Subcontractor Address: _____

_____

_____

Authorized Representative (typed or printed): _____

Authorized Representative (signature): _____

Title: _____

Sworn to and Subscribed before me this _____day of_____ 20_____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

Contract: A-07: Roofing

BID FORM

For Bids Due: January ~~14~~ **21**, 2020 To: ***Appoquinimink School District***
118 South Sixth Street
Odessa, DE 19730

Name of Bidder: _____

Bidder Address: _____

_____

Contact Name: _____ E-Mail Address: _____

Delaware Business License No.: _____ Taxpayer ID No.: _____

(Other License Nos.): _____
(A copy of Bidder's Delaware Business License must be attached to this form.)

Phone No.: ( ) _____ - _____ Fax No.: ( ) _____ - _____

The undersigned, representing that he has read and understands the Bidding Documents and that this bid is made in accordance therewith, that he has visited the site and has familiarized himself with the local conditions under which the Work is to be performed, and that his bid is based upon the materials, systems and equipment described in the Bidding Documents without exception, hereby proposes and agrees to provide all labor, materials, plant, equipment, supplies, transport and other facilities required to execute the work described by the aforesaid documents for the lump sum itemized below:

$_____ ($_____)

ALTERNATES
Alternate prices conform to applicable project specification section. Refer to specifications for a complete description of the following Alternates. An "ADD" or "DEDUCT" amount is indicated by the crossed out part that does not apply.

Alternate No. 1: Increase the Size of the Gymnasium

Add/Deduct _____($_____)

Alternate No. 12: Provide Lightning Protection System (BP1 ADDENDUM NO. 2)

Add/Deduct _____($_____)

I/We acknowledge Addendums numbered _____ and the price(s) submitted include any cost/schedule impact they may have.

This bid shall remain valid and cannot be withdrawn for sixty (60) days from the date of opening of bids, and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid.

The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.

This bid is based upon work being accomplished by the Sub-Contractors named on the list attached to this bid.

The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds, and Insurance Certificates, required by the Contract Documents.

I am / We are an Individual / a Partnership / a Corporation

By _____ Trading as _____
(Individual's / General Partner's / Corporate Name)

_____
(State of Corporation)

Business Address:_____
_____
_____
_____

Witness: _____ By: _____
(Authorized Signature)

(SEAL) _____
(Title)

Date: _____

ATTACHMENTS
Sub-Contractor List

Non-Collusion Statement
Bid Bond
Consent of Surety
Affidavit of Employee Drug Testing Program
Delaware Business License
Town of Middletown Contractor's License
(Others as Required by Project Manuals)

SUBCONTRACTOR LIST

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor must be listed for each category where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the Owner, **it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.**

Subcontractor Category	Subcontractor	Address (City & State)	**Subcontractors tax payer ID # or Delaware Business license #**
1. EPDM Membrane Roof System	_____	_____	_____
2. Asphalt Shingle Roof System	_____	_____	_____

NON-COLLUSION STATEMENT

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date **January 14, 2020.**

All the terms and conditions of **Contract: A-07: Roofing** have been thoroughly examined and are understood.

NAME OF BIDDER: _____

AUTHORIZED REPRESENTATIVE (TYPED): _____

AUTHORIZED REPRESENTATIVE (SIGNATURE): _____

TITLE: _____

ADDRESS OF BIDDER: _____

_____

_____

PHONE NUMBER: _____

Sworn to and Subscribed before me this _____ day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

BID BOND

TO ACCOMPANY PROPOSAL
(Not necessary if security is used)

KNOW ALL MEN BY THESE PRESENTS That: _____of _____in the County of _____ and State of _____ as Principal, and _____of _____in the County of _____ _____ and State of _____ as Surety, legally authorized to do business in the State of Delaware ('State"), are held and firmly unto the **Appoquinimink School District** in the sum of _____ Dollars (S_____), or percent not to exceed _____ _____ Dollars (S_____) of amount of bid on Contract No. _____ to be paid to the **Appoquinimink School District** for the use and benefit of the **Appoquinimink School District** for which payment well and truly to be made, we do bind ourselves, our and each of our heirs, executors, administrators, and successors, jointly and severally for and in the whole firmly by these presents.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH That if the above bounden Principal who has submitted to the **Appoquinimink School District** a certain proposal to enter into this contract for the furnishing of certain material and/or services within the State, shall be awarded this Contract, and if said Principal shall well and truly enter into and execute this Contract as may be required by the terms of this Contract and approved by the **Appoquinimink School District** this Contract to be entered into within twenty days after the date of official notice of the award thereof in accordance with the terms of said proposal, then this obligation shall be void or else to be and remain in full force and virtue.

Sealed with _____seal and dated this____day of _____in the year of our Lord two thousand and _____(20__).

SEALED, AND DELIVERED IN THE PRESENCE OF

_____
Name of Bidder (Organization)

Corporate Seal

By:_____
Authorized Signature

Attest _____

_____
Title

_____
Name of Surety

Witness_____

_____

_____
Title

CONSENT OF SURETY

DATE_____

To: **Appoquinimink School District**
118 South Sixth Street
Odessa, DE 19730

Gentlemen:

We, the _____

_____
(Surety Company's Address)

_____

a Surety Company authorized to do business in the State of Delaware hereby agrees that if

_____
(Contractor)

_____
(Address)

_____

is awarded the Contract No. _____

We will write the required Performance and/or Labor and Material Bond required by Paragraph 9 of the Instructions to Bidders.

_____
(Surety Company)

By _____
(Attorney-in-Fact)

AFFIDAVIT
OF
EMPLOYEE DRUG TESTING PROGRAM

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds.

We hereby certify that we have in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for our employees on the jobsite, including subcontractors that complies with this regulation:

Contractor/Subcontractor Name: _____

Contractor/Subcontractor Address: _____

_____

_____

Authorized Representative (typed or printed): _____

Authorized Representative (signature): _____

Title: _____

Sworn to and Subscribed before me this _____day of_____ 20_____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

Contract: A-08: Metal Studs & Drywall

BID FORM

For Bids Due: January ~~14~~ **21**, 2020 To: ***Appoquinimink School District***
118 South Sixth Street
Odessa, DE 19730

Name of Bidder: _____

Bidder Address: _____

_____

Contact Name: _____ E-Mail Address: _____

Delaware Business License No.: _____ Taxpayer ID No.: _____

(Other License Nos.): _____
(A copy of Bidder's Delaware Business License must be attached to this form.)

Phone No.: ( ) _____ - _____ Fax No.: ( ) _____ - _____

The undersigned, representing that he has read and understands the Bidding Documents and that this bid is made in accordance therewith, that he has visited the site and has familiarized himself with the local conditions under which the Work is to be performed, and that his bid is based upon the materials, systems and equipment described in the Bidding Documents without exception, hereby proposes and agrees to provide all labor, materials, plant, equipment, supplies, transport and other facilities required to execute the work described by the aforesaid documents for the lump sum itemized below:

1. **LUMP SUM PRICE FOR THE CONTRACT WORK** **$**_____
2. **LUMP SUM PRICE FOR BIM COORDINATION** **$**_____

TOTAL BASE BID AMOUNT **$**_____

(AMOUNT IN DOLLARS & CENTS)

$_____

(TOTAL AMOUNT IN WRITTEN WORDS)

(BPA ADDENDUM NO. 4)

ALTERNATES
Alternate prices conform to applicable project specification section. Refer to specifications for a complete description of the following Alternates. An "ADD" or "DEDUCT" amount is indicated by the crossed out part that does not apply.

Alternate No. 1: Increase the Size of the Gymnasium

Add/Deduct _____ ($_____)

Alternate No. 2a: Change Veneer on Gymnasium (Alt. No. 1 – Base Bid)

Add/Deduct _____ ($_____)

Alternate No. 2b: Change Veneer on Gymnasium (Alt. No. 1 – Alternate)

Add/Deduct _____ ($_____)

Alternate No. 3: Add Decorative Cast Stone at Windows

Add/Deduct _____ ($_____)

Alternate No. 4: Operable Windows

Add/Deduct _____ ($_____)

I/We acknowledge Addendums numbered _____ and the price(s) submitted include any cost/schedule impact they may have.

This bid shall remain valid and cannot be withdrawn for sixty (60) days from the date of opening of bids, and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid.

The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.

This bid is based upon work being accomplished by the Sub-Contractors named on the list attached to this bid.

The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds, and Insurance Certificates, required by the Contract Documents.

I am / We are an Individual / a Partnership / a Corporation

By _____ Trading as _____
(Individual's / General Partner's / Corporate Name)

_____
(State of Corporation)

Business Address:_____
_____
_____
_____

Witness: _____ By: _____
(Authorized Signature)

(SEAL) _____
(Title)

Date: _____

ATTACHMENTS

Sub-Contractor List
Non-Collusion Statement
Bid Bond
Consent of Surety
Affidavit of Employee Drug Testing Program
Delaware Business License
Town of Middletown Contractor's License
(Others as Required by Project Manuals)

SUBCONTRACTOR LIST

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor must be listed for each category where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the Owner, **it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.**

Subcontractor Category	Subcontractor	Address (City & State)	**Subcontractors tax payer ID # or Delaware Business license #**
1. Metal Stud Framing			
2. Exterior Siding			
3. Insulation			
4. Caulking			

NON-COLLUSION STATEMENT

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date **January 14, 2020.**

All the terms and conditions of **Contract: A-08: Metal Studs & Drywall** have been thoroughly examined and are understood.

NAME OF BIDDER: _____

AUTHORIZED REPRESENTATIVE (TYPED): _____

AUTHORIZED REPRESENTATIVE (SIGNATURE): _____

TITLE: _____

ADDRESS OF BIDDER: _____

_____

_____

PHONE NUMBER: _____

Sworn to and Subscribed before me this _____ day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

BID BOND

TO ACCOMPANY PROPOSAL
(Not necessary if security is used)

KNOW ALL MEN BY THESE PRESENTS That: _____of _____in the County of _____ and State of _____ as Principal, and _____of _____in the County of _____ _____ and State of _____ as Surety, legally authorized to do business in the State of Delaware ('State"), are held and firmly unto the **Appoquinimink School District** in the sum of _____ Dollars (S_____), or percent not to exceed _____ _____ Dollars (S_____) of amount of bid on Contract No. _____ to be paid to the **Appoquinimink School District** for the use and benefit of the **Appoquinimink School District** for which payment well and truly to be made, we do bind ourselves, our and each of our heirs, executors, administrators, and successors, jointly and severally for and in the whole firmly by these presents.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH That if the above bounden Principal who has submitted to the **Appoquinimink School District** a certain proposal to enter into this contract for the furnishing of certain material and/or services within the State, shall be awarded this Contract, and if said Principal shall well and truly enter into and execute this Contract as may be required by the terms of this Contract and approved by the **Appoquinimink School District** this Contract to be entered into within twenty days after the date of official notice of the award thereof in accordance with the terms of said proposal, then this obligation shall be void or else to be and remain in full force and virtue.

Sealed with _____seal and dated this____day of _____in the year of our Lord two thousand and _____(20__).

SEALED, AND DELIVERED IN THE PRESENCE OF

_____
Name of Bidder (Organization)

Corporate Seal

By:_____
Authorized Signature

Attest _____

_____
Title

_____
Name of Surety

Witness_____

_____

_____
Title

CONSENT OF SURETY

DATE_____

To: **Appoquinimink School District**
118 South Sixth Street
Odessa, DE 19730

Gentlemen:

We, the _____

_____
(Surety Company's Address)

_____

a Surety Company authorized to do business in the State of Delaware hereby agrees that if

_____
(Contractor)

_____
(Address)

_____

is awarded the Contract No. _____

We will write the required Performance and/or Labor and Material Bond required by Paragraph 9 of the Instructions to Bidders.

_____
(Surety Company)

By _____
(Attorney-in-Fact)

AFFIDAVIT
OF
EMPLOYEE DRUG TESTING PROGRAM

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds.

We hereby certify that we have in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for our employees on the jobsite, including subcontractors that complies with this regulation:

Contractor/Subcontractor Name: _____

Contractor/Subcontractor Address: _____

_____

_____

Authorized Representative (typed or printed): _____

Authorized Representative (signature): _____

Title: _____

Sworn to and Subscribed before me this _____day of_____ 20_____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

Contract: A-09: Glass & Glazing

BID FORM

For Bids Due: January ~~14~~ **21**, 2020 To: ***Appoquinimink School District***
118 South Sixth Street
Odessa, DE 19730

Name of Bidder: _____

Bidder Address: _____

_____

Contact Name: _____ E-Mail Address: _____

Delaware Business License No.: _____ Taxpayer ID No.: _____

(Other License Nos.): _____
(A copy of Bidder's Delaware Business License must be attached to this form.)

Phone No.: ( ) _____ - _____ Fax No.: ( ) _____ - _____

The undersigned, representing that he has read and understands the Bidding Documents and that this bid is made in accordance therewith, that he has visited the site and has familiarized himself with the local conditions under which the Work is to be performed, and that his bid is based upon the materials, systems and equipment described in the Bidding Documents without exception, hereby proposes and agrees to provide all labor, materials, plant, equipment, supplies, transport and other facilities required to execute the work described by the aforesaid documents for the lump sum itemized below:

$_____ ($_____)

ALTERNATES
Alternate prices conform to applicable project specification section. Refer to specifications for a complete description of the following Alternates. An "ADD" or "DEDUCT" amount is indicated by the crossed out part that does not apply.

Alternate No. 1: Increase the Size of the Gymnasium

Add/Deduct _____($_____)

Alternate No. 2a: Change Veneer on Gymnasium (Alt. No. 1 – Base Bid)

Add/Deduct _____($_____)

Alternate No. 2b: Change Veneer on Gymnasium (Alt. No. 1 – Alternate)

Add/Deduct _____ ($_____)

Alternate No. 3: Add Decorative Cast Stone at Windows

Add/Deduct _____ ($_____)

Alternate No. 4: Operable Windows

Add/Deduct _____ ($_____)

Alternate No. 11: Add FRP Doors/Frames at Classrooms into Courtyard

Add/Deduct _____ ($_____)

I/We acknowledge Addendums numbered _____ and the price(s) submitted include any cost/schedule impact they may have.

This bid shall remain valid and cannot be withdrawn for sixty (60) days from the date of opening of bids, and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid.

The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.

This bid is based upon work being accomplished by the Sub-Contractors named on the list attached to this bid.

The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds, and Insurance Certificates, required by the Contract Documents.

I am / We are an Individual / a Partnership / a Corporation

By _____ Trading as _____
(Individual's / General Partner's / Corporate Name)

_____
(State of Corporation)

Business Address:_____
_____
_____
_____

Witness: _____ By: _____
(Authorized Signature)

(SEAL) _____
(Title)

Date: _____

ATTACHMENTS

Sub-Contractor List
Non-Collusion Statement
Bid Bond
Consent of Surety
Affidavit of Employee Drug Testing Program
Delaware Business License
Town of Middletown Contractor's License
(Others as Required by Project Manuals)

SUBCONTRACTOR LIST

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor must be listed for each category where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the Owner, **it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.**

Subcontractor Category	Subcontractor	Address (City & State)	**Subcontractors tax payer ID # or Delaware Business license #**
1. Exterior Systems			
2. Interior Systems			
3. Caulking			

NON-COLLUSION STATEMENT

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date **January 14, 2020.**

All the terms and conditions of **Contract: A-09: Glass & Glazing** have been thoroughly examined and are understood.

NAME OF BIDDER: _____

AUTHORIZED REPRESENTATIVE (TYPED): _____

AUTHORIZED REPRESENTATIVE (SIGNATURE): _____

TITLE: _____

ADDRESS OF BIDDER: _____

_____

_____

PHONE NUMBER: _____

Sworn to and Subscribed before me this _____ day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

BID BOND

TO ACCOMPANY PROPOSAL
(Not necessary if security is used)

KNOW ALL MEN BY THESE PRESENTS That: _____of _____in the County of _____ and State of _____ as Principal, and _____of _____in the County of _____ _____ and State of _____ as Surety, legally authorized to do business in the State of Delaware ('State"), are held and firmly unto the **Appoquinimink School District** in the sum of _____ Dollars (S_____), or percent not to exceed _____ _____ Dollars (S_____) of amount of bid on Contract No. _____ to be paid to the **Appoquinimink School District** for the use and benefit of the **Appoquinimink School District** for which payment well and truly to be made, we do bind ourselves, our and each of our heirs, executors, administrators, and successors, jointly and severally for and in the whole firmly by these presents.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH That if the above bounden Principal who has submitted to the **Appoquinimink School District** a certain proposal to enter into this contract for the furnishing of certain material and/or services within the State, shall be awarded this Contract, and if said Principal shall well and truly enter into and execute this Contract as may be required by the terms of this Contract and approved by the **Appoquinimink School District** this Contract to be entered into within twenty days after the date of official notice of the award thereof in accordance with the terms of said proposal, then this obligation shall be void or else to be and remain in full force and virtue.

Sealed with _____seal and dated this____day of _____in the year of our Lord two thousand and _____(20__).

SEALED, AND DELIVERED IN THE PRESENCE OF

_____
Name of Bidder (Organization)

Corporate Seal

By:_____
Authorized Signature

Attest _____

_____
Title

_____
Name of Surety

Witness_____

_____

_____
Title

CONSENT OF SURETY

DATE_____

To: **Appoquinimink School District**
118 South Sixth Street
Odessa, DE 19730

Gentlemen:

We, the _____

_____
(Surety Company's Address)

_____

a Surety Company authorized to do business in the State of Delaware hereby agrees that if

_____
(Contractor)

_____
(Address)

_____

is awarded the Contract No. _____

We will write the required Performance and/or Labor and Material Bond required by Paragraph 9 of the Instructions to Bidders.

_____
(Surety Company)

By _____
(Attorney-in-Fact)

AFFIDAVIT
OF
EMPLOYEE DRUG TESTING PROGRAM

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds.

We hereby certify that we have in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for our employees on the jobsite, including subcontractors that complies with this regulation:

Contractor/Subcontractor Name: _____

Contractor/Subcontractor Address: _____

_____

_____

Authorized Representative (typed or printed): _____

Authorized Representative (signature): _____

Title: _____

Sworn to and Subscribed before me this _____day of_____ 20_____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

Contract: A-10: Casework & Millwork

BID FORM

For Bids Due: January ~~14~~ **21**, 2020 To: ***Appoquinimink School District***
118 South Sixth Street
Odessa, DE 19730

Name of Bidder: _____

Bidder Address: _____

_____

Contact Name: _____ E-Mail Address: _____

Delaware Business License No.:_____ Taxpayer ID No.: _____

(Other License Nos.): _____
(A copy of Bidder's Delaware Business License must be attached to this form.)

Phone No.: ( ) _____ - _____ Fax No.: ( ) _____ - _____

The undersigned, representing that he has read and understands the Bidding Documents and that this bid is made in accordance therewith, that he has visited the site and has familiarized himself with the local conditions under which the Work is to be performed, and that his bid is based upon the materials, systems and equipment described in the Bidding Documents without exception, hereby proposes and agrees to provide all labor, materials, plant, equipment, supplies, transport and other facilities required to execute the work described by the aforesaid documents for the lump sum itemized below:

$_____ ($_____)

I/We acknowledge Addendums numbered _____ and the price(s) submitted include any cost/schedule impact they may have.

This bid shall remain valid and cannot be withdrawn for sixty (60) days from the date of opening of bids, and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid.

The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.

This bid is based upon work being accomplished by the Sub-Contractors named on the list attached to this bid.

The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or

indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds, and Insurance Certificates, required by the Contract Documents.

I am / We are an Individual / a Partnership / a Corporation

By _____ Trading as _____
(Individual's / General Partner's / Corporate Name)

_____
(State of Corporation)

Business Address:_____
_____
_____
_____

Witness: _____ By: _____
(Authorized Signature)

(SEAL) _____
(Title)

Date: _____

ATTACHMENTS

Sub-Contractor List
Non-Collusion Statement
Bid Bond
Consent of Surety
Affidavit of Employee Drug Testing Program
Delaware Business License
Town of Middletown Contractor's License
(Others as Required by Project Manuals)

SUBCONTRACTOR LIST

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor must be listed for each category where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the Owner, **it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.**

Subcontractor Category	Subcontractor	Address (City & State)	**Subcontractors tax payer ID # or Delaware Business license #**
1. Casework Manufacturer			
2. Casework Installer			
3. Caulking			

NON-COLLUSION STATEMENT

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date **January 14, 2020.**

All the terms and conditions of ***Contract: A-10: Casework & Millwork*** have been thoroughly examined and are understood.

NAME OF BIDDER: _____

AUTHORIZED REPRESENTATIVE (TYPED): _____

AUTHORIZED REPRESENTATIVE (SIGNATURE): _____

TITLE: _____

ADDRESS OF BIDDER: _____

_____

_____

PHONE NUMBER: _____

Sworn to and Subscribed before me this _____ day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

BID BOND

TO ACCOMPANY PROPOSAL
(Not necessary if security is used)

KNOW ALL MEN BY THESE PRESENTS That: _____of _____in the County of _____ and State of _____ as Principal, and _____of _____in the County of _____ _____ and State of _____ as Surety, legally authorized to do business in the State of Delaware ('State"), are held and firmly unto the **Appoquinimink School District** in the sum of _____ Dollars (S_____), or percent not to exceed _____ _____ Dollars (S_____) of amount of bid on Contract No. _____ to be paid to the **Appoquinimink School District** for the use and benefit of the **Appoquinimink School District** for which payment well and truly to be made, we do bind ourselves, our and each of our heirs, executors, administrators, and successors, jointly and severally for and in the whole firmly by these presents.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH That if the above bounden Principal who has submitted to the **Appoquinimink School District** a certain proposal to enter into this contract for the furnishing of certain material and/or services within the State, shall be awarded this Contract, and if said Principal shall well and truly enter into and execute this Contract as may be required by the terms of this Contract and approved by the **Appoquinimink School District** this Contract to be entered into within twenty days after the date of official notice of the award thereof in accordance with the terms of said proposal, then this obligation shall be void or else to be and remain in full force and virtue.

Sealed with _____seal and dated this____day of _____in the year of our Lord two thousand and _____(20__).

SEALED, AND DELIVERED IN THE PRESENCE OF

_____
Name of Bidder (Organization)

Corporate Seal

By:_____
Authorized Signature

Attest _____

_____
Title

_____
Name of Surety

Witness_____

_____

_____
Title

CONSENT OF SURETY

DATE_____

To: **Appoquinimink School District**
118 South Sixth Street
Odessa, DE 19730

Gentlemen:

We, the _____

_____
(Surety Company's Address)

_____

a Surety Company authorized to do business in the State of Delaware hereby agrees that if

_____
(Contractor)

_____
(Address)

_____

is awarded the Contract No. _____

We will write the required Performance and/or Labor and Material Bond required by Paragraph 9 of the Instructions to Bidders.

_____
(Surety Company)

By _____
(Attorney-in-Fact)

AFFIDAVIT
OF
EMPLOYEE DRUG TESTING PROGRAM

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds.

We hereby certify that we have in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for our employees on the jobsite, including subcontractors that complies with this regulation:

Contractor/Subcontractor Name: _____

Contractor/Subcontractor Address: _____

_____

_____

Authorized Representative (typed or printed): _____

Authorized Representative (signature): _____

Title: _____

Sworn to and Subscribed before me this _____day of_____ 20_____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

Contract: A-11: Folding Partitions

BID FORM

For Bids Due: January ~~14~~ **21**, 2020 To: ***Appoquinimink School District***
118 South Sixth Street
Odessa, DE 19730

Name of Bidder: _____

Bidder Address: _____

_____

Contact Name: _____ E-Mail Address: _____

Delaware Business License No.:_____ Taxpayer ID No.: _____

(Other License Nos.): _____
(A copy of Bidder's Delaware Business License must be attached to this form.)

Phone No.: ( ) _____ - _____ Fax No.: ( ) _____ - _____

The undersigned, representing that he has read and understands the Bidding Documents and that this bid is made in accordance therewith, that he has visited the site and has familiarized himself with the local conditions under which the Work is to be performed, and that his bid is based upon the materials, systems and equipment described in the Bidding Documents without exception, hereby proposes and agrees to provide all labor, materials, plant, equipment, supplies, transport and other facilities required to execute the work described by the aforesaid documents for the lump sum itemized below:

$_____ ($_____)

I/We acknowledge Addendums numbered _____ and the price(s) submitted include any cost/schedule impact they may have.

This bid shall remain valid and cannot be withdrawn for sixty (60) days from the date of opening of bids, and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid.

The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.

This bid is based upon work being accomplished by the Sub-Contractors named on the list attached to this bid.

The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or

indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds, and Insurance Certificates, required by the Contract Documents.

I am / We are an Individual / a Partnership / a Corporation

By _____ Trading as _____
(Individual's / General Partner's / Corporate Name)

_____
(State of Corporation)

Business Address:_____
_____
_____
_____

Witness: _____ By: _____
(Authorized Signature)

(SEAL) _____
(Title)

Date: _____

ATTACHMENTS

Sub-Contractor List
Non-Collusion Statement
Bid Bond
Consent of Surety
Affidavit of Employee Drug Testing Program
Delaware Business License
Town of Middletown Contractor's License
(Others as Required by Project Manuals)

SUBCONTRACTOR LIST

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor must be listed for each category where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the Owner, **it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.**

Subcontractor Category	Subcontractor	Address (City & State)	**Subcontractors tax payer ID # or Delaware Business license #**
1. Folding Partitions Manufacturer	_____	_____	_____
2. Folding Partitions Installer	_____	_____	_____

NON-COLLUSION STATEMENT

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date **January 14, 2020.**

All the terms and conditions of **Contract: A-11: Folding Partitions** have been thoroughly examined and are understood.

NAME OF BIDDER: _____

AUTHORIZED REPRESENTATIVE (TYPED): _____

AUTHORIZED REPRESENTATIVE (SIGNATURE): _____

TITLE: _____

ADDRESS OF BIDDER: _____

_____

_____

PHONE NUMBER: _____

Sworn to and Subscribed before me this _____ day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

BID BOND

TO ACCOMPANY PROPOSAL
(Not necessary if security is used)

KNOW ALL MEN BY THESE PRESENTS That: _____of _____in the County of _____ and State of _____ as Principal, and _____of _____in the County of _____ _____ and State of _____ as Surety, legally authorized to do business in the State of Delaware ('State"), are held and firmly unto the **Appoquinimink School District** in the sum of _____ Dollars (S_____), or percent not to exceed _____ _____ Dollars (S_____) of amount of bid on Contract No. _____ to be paid to the **Appoquinimink School District** for the use and benefit of the **Appoquinimink School District** for which payment well and truly to be made, we do bind ourselves, our and each of our heirs, executors, administrators, and successors, jointly and severally for and in the whole firmly by these presents.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH That if the above bounden Principal who has submitted to the **Appoquinimink School District** a certain proposal to enter into this contract for the furnishing of certain material and/or services within the State, shall be awarded this Contract, and if said Principal shall well and truly enter into and execute this Contract as may be required by the terms of this Contract and approved by the **Appoquinimink School District** this Contract to be entered into within twenty days after the date of official notice of the award thereof in accordance with the terms of said proposal, then this obligation shall be void or else to be and remain in full force and virtue.

Sealed with _____seal and dated this____day of _____in the year of our Lord two thousand and _____(20__).

SEALED, AND DELIVERED IN THE PRESENCE OF

_____
Name of Bidder (Organization)

Corporate Seal

By:_____
Authorized Signature

Attest _____

_____
Title

_____
Name of Surety

Witness_____

_____

_____
Title

CONSENT OF SURETY

DATE_____

To: **Appoquinimink School District**
118 South Sixth Street
Odessa, DE 19730

Gentlemen:

We, the _____

_____
(Surety Company's Address)

_____

a Surety Company authorized to do business in the State of Delaware hereby agrees that if

_____
(Contractor)

_____
(Address)

_____

is awarded the Contract No. _____

We will write the required Performance and/or Labor and Material Bond required by Paragraph 9 of the Instructions to Bidders.

_____
(Surety Company)

By _____
(Attorney-in-Fact)

AFFIDAVIT
OF
EMPLOYEE DRUG TESTING PROGRAM

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds.

We hereby certify that we have in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for our employees on the jobsite, including subcontractors that complies with this regulation:

Contractor/Subcontractor Name: _____

Contractor/Subcontractor Address: _____

_____

_____

Authorized Representative (typed or printed): _____

Authorized Representative (signature): _____

Title: _____

Sworn to and Subscribed before me this _____day of_____ 20_____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

Contract: A-12: Painting

BID FORM

For Bids Due: January ~~14~~ **21**, 2020 To: ***Appoquinimink School District***
118 South Sixth Street
Odessa, DE 19730

Name of Bidder: _____

Bidder Address: _____

_____

Contact Name: _____ E-Mail Address: _____

Delaware Business License No.: _____ Taxpayer ID No.: _____

(Other License Nos.): _____
(A copy of Bidder's Delaware Business License must be attached to this form.)

Phone No.: ( ) _____ - _____ Fax No.: ( ) _____ - _____

The undersigned, representing that he has read and understands the Bidding Documents and that this bid is made in accordance therewith, that he has visited the site and has familiarized himself with the local conditions under which the Work is to be performed, and that his bid is based upon the materials, systems and equipment described in the Bidding Documents without exception, hereby proposes and agrees to provide all labor, materials, plant, equipment, supplies, transport and other facilities required to execute the work described by the aforesaid documents for the lump sum itemized below:

$_____ ($_____)

ALTERNATES
Alternate prices conform to applicable project specification section. Refer to specifications for a complete description of the following Alternates. An "ADD" or "DEDUCT" amount is indicated by the crossed out part that does not apply.

Alternate No. 1: Increase the Size of the Gymnasium

Add/Deduct _____($_____)

Alternate No. 11: Add FRP Doors/Frames at Classrooms into Courtyard

Add/Deduct _____($_____)

I/We acknowledge Addendums numbered _____ and the price(s) submitted include any cost/schedule impact they may have.

This bid shall remain valid and cannot be withdrawn for sixty (60) days from the date of opening of bids, and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid.

The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.

This bid is based upon work being accomplished by the Sub-Contractors named on the list attached to this bid.

The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds, and Insurance Certificates, required by the Contract Documents.

I am / We are an Individual / a Partnership / a Corporation

By _____ Trading as _____
(Individual's / General Partner's / Corporate Name)

_____
(State of Corporation)

Business Address:_____
_____
_____
_____

Witness: _____ By: _____
(Authorized Signature)

(SEAL) _____
(Title)

Date: _____

ATTACHMENTS
Sub-Contractor List
Non-Collusion Statement

Bid Bond
Consent of Surety
Affidavit of Employee Drug Testing Program
Delaware Business License
Town of Middletown Contractor's License
(Others as Required by Project Manuals)

SUBCONTRACTOR LIST

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor must be listed for each category where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the Owner, **it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.**

Subcontractor Category	Subcontractor	Address (City & State)	**Subcontractors tax payer ID # or Delaware Business license #**
1. Painting			
2. Caulking			

NON-COLLUSION STATEMENT

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date **January 14, 2020.**

All the terms and conditions of **Contract: A-12: Painting** have been thoroughly examined and are understood.

NAME OF BIDDER: _____

AUTHORIZED REPRESENTATIVE (TYPED): _____

AUTHORIZED REPRESENTATIVE (SIGNATURE): _____

TITLE: _____

ADDRESS OF BIDDER: _____

_____

_____

PHONE NUMBER: _____

Sworn to and Subscribed before me this _____ day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

BID BOND

TO ACCOMPANY PROPOSAL
(Not necessary if security is used)

KNOW ALL MEN BY THESE PRESENTS That: _____of _____in the County of _____ and State of _____ as Principal, and _____of _____in the County of _____ _____ and State of _____ as Surety, legally authorized to do business in the State of Delaware ('State"), are held and firmly unto the **Appoquinimink School District** in the sum of _____ Dollars (S_____), or percent not to exceed _____ _____ Dollars (S_____) of amount of bid on Contract No. _____ to be paid to the **Appoquinimink School District** for the use and benefit of the **Appoquinimink School District** for which payment well and truly to be made, we do bind ourselves, our and each of our heirs, executors, administrators, and successors, jointly and severally for and in the whole firmly by these presents.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH That if the above bounden Principal who has submitted to the **Appoquinimink School District** a certain proposal to enter into this contract for the furnishing of certain material and/or services within the State, shall be awarded this Contract, and if said Principal shall well and truly enter into and execute this Contract as may be required by the terms of this Contract and approved by the **Appoquinimink School District** this Contract to be entered into within twenty days after the date of official notice of the award thereof in accordance with the terms of said proposal, then this obligation shall be void or else to be and remain in full force and virtue.

Sealed with _____seal and dated this____day of _____in the year of our Lord two thousand and _____(20__).

SEALED, AND DELIVERED IN THE PRESENCE OF

_____
Name of Bidder (Organization)

Corporate Seal

By:_____
Authorized Signature

Attest _____

_____
Title

_____
Name of Surety

Witness_____

_____

_____
Title

CONSENT OF SURETY

DATE_____

To: **Appoquinimink School District**
118 South Sixth Street
Odessa, DE 19730

Gentlemen:

We, the _____

_____
(Surety Company's Address)

_____

a Surety Company authorized to do business in the State of Delaware hereby agrees that if

_____
(Contractor)

_____
(Address)

_____

is awarded the Contract No. _____

We will write the required Performance and/or Labor and Material Bond required by Paragraph 9 of the Instructions to Bidders.

_____
(Surety Company)

By _____
(Attorney-in-Fact)

AFFIDAVIT
OF
EMPLOYEE DRUG TESTING PROGRAM

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds.

We hereby certify that we have in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for our employees on the jobsite, including subcontractors that complies with this regulation:

Contractor/Subcontractor Name: _____

Contractor/Subcontractor Address: _____

_____

_____

Authorized Representative (typed or printed): _____

Authorized Representative (signature): _____

Title: _____

Sworn to and Subscribed before me this _____day of_____ 20_____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

Contract: A-13: Acoustical Ceilings

BID FORM

For Bids Due: January ~~14~~ **21**, 2020 To: ***Appoquinimink School District***
118 South Sixth Street
Odessa, DE 19730

Name of Bidder: _____

Bidder Address: _____

_____

Contact Name: _____ E-Mail Address: _____

Delaware Business License No.: _____ Taxpayer ID No.: _____

(Other License Nos.): _____
(A copy of Bidder's Delaware Business License must be attached to this form.)

Phone No.: ( ) _____ - _____ Fax No.: ( ) _____ - _____

The undersigned, representing that he has read and understands the Bidding Documents and that this bid is made in accordance therewith, that he has visited the site and has familiarized himself with the local conditions under which the Work is to be performed, and that his bid is based upon the materials, systems and equipment described in the Bidding Documents without exception, hereby proposes and agrees to provide all labor, materials, plant, equipment, supplies, transport and other facilities required to execute the work described by the aforesaid documents for the lump sum itemized below:

$_____ ($_____)

ALTERNATES
Alternate prices conform to applicable project specification section. Refer to specifications for a complete description of the following Alternates. An "ADD" or "DEDUCT" amount is indicated by the crossed out part that does not apply.

Alternate No. 1: Increase the Size of the Gymnasium

Add/Deduct _____($_____)

Alternate No. 6a: Add Acoustical Treatments in the Gymnasium (Alt. No. 1 – Base Bid)

Add/Deduct _____($_____)

Alternate No. 6b: Add Acoustical Treatments in the Gymnasium (Alt. No. 1 – Alternate)

Add/Deduct _____($_____)

Alternate No. 7: Add Decorative Ceilings in Common Areas

Add/Deduct _____($_____)

Alternate No. 8: Add Outdoor Classroom in the Courtyard

Add/Deduct _____($_____)

I/We acknowledge Addendums numbered _____ and the price(s) submitted include any cost/schedule impact they may have.

This bid shall remain valid and cannot be withdrawn for sixty (60) days from the date of opening of bids, and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid.

The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.

This bid is based upon work being accomplished by the Sub-Contractors named on the list attached to this bid.

The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds, and Insurance Certificates, required by the Contract Documents.

I am / We are an Individual / a Partnership / a Corporation

By _____ Trading as _____
(Individual's / General Partner's / Corporate Name)

_____
(State of Corporation)

Business Address:_____
_____
_____
_____

Witness: _____ By: _____
(Authorized Signature)

(SEAL) _____
(Title)

Date: _____

ATTACHMENTS

Sub-Contractor List
Non-Collusion Statement
Bid Bond
Consent of Surety
Affidavit of Employee Drug Testing Program
Delaware Business License
Town of Middletown Contractor's License
(Others as Required by Project Manuals)

SUBCONTRACTOR LIST

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor must be listed for each category where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the Owner, **it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.**

Subcontractor Category	Subcontractor	Address (City & State)	**Subcontractors tax payer ID # or Delaware Business license #**
1. Acoustical Ceilings			
2. Acoustical Treatment			

NON-COLLUSION STATEMENT

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date **January 14, 2020.**

All the terms and conditions of **Contract: A-13: Acoustical Ceilings** have been thoroughly examined and are understood.

NAME OF BIDDER: _____

AUTHORIZED REPRESENTATIVE (TYPED): _____

AUTHORIZED REPRESENTATIVE (SIGNATURE): _____

TITLE: _____

ADDRESS OF BIDDER: _____

_____

_____

PHONE NUMBER: _____

Sworn to and Subscribed before me this _____ day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

BID BOND

TO ACCOMPANY PROPOSAL
(Not necessary if security is used)

KNOW ALL MEN BY THESE PRESENTS That: _____of _____in the County of _____ and State of _____ as Principal, and _____of _____in the County of _____ _____ and State of _____ as Surety, legally authorized to do business in the State of Delaware ('State"), are held and firmly unto the **Appoquinimink School District** in the sum of _____ Dollars (S_____), or percent not to exceed _____ _____ Dollars (S_____) of amount of bid on Contract No. _____ to be paid to the **Appoquinimink School District** for the use and benefit of the **Appoquinimink School District** for which payment well and truly to be made, we do bind ourselves, our and each of our heirs, executors, administrators, and successors, jointly and severally for and in the whole firmly by these presents.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH That if the above bounden Principal who has submitted to the **Appoquinimink School District** a certain proposal to enter into this contract for the furnishing of certain material and/or services within the State, shall be awarded this Contract, and if said Principal shall well and truly enter into and execute this Contract as may be required by the terms of this Contract and approved by the **Appoquinimink School District** this Contract to be entered into within twenty days after the date of official notice of the award thereof in accordance with the terms of said proposal, then this obligation shall be void or else to be and remain in full force and virtue.

Sealed with _____seal and dated this____day of _____in the year of our Lord two thousand and _____(20__).

SEALED, AND DELIVERED IN THE PRESENCE OF

_____
Name of Bidder (Organization)

Corporate Seal

By:_____
Authorized Signature

Attest _____

_____
Title

_____
Name of Surety

Witness_____

_____

_____
Title

CONSENT OF SURETY

DATE_____

To: **Appoquinimink School District**
118 South Sixth Street
Odessa, DE 19730

Gentlemen:

We, the _____

_____
(Surety Company's Address)

_____

a Surety Company authorized to do business in the State of Delaware hereby agrees that if

_____
(Contractor)

_____
(Address)

_____

is awarded the Contract No. _____

We will write the required Performance and/or Labor and Material Bond required by Paragraph 9 of the Instructions to Bidders.

_____
(Surety Company)

By _____
(Attorney-in-Fact)

AFFIDAVIT
OF
EMPLOYEE DRUG TESTING PROGRAM

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds.

We hereby certify that we have in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for our employees on the jobsite, including subcontractors that complies with this regulation:

Contractor/Subcontractor Name: _____

Contractor/Subcontractor Address: _____

_____

_____

Authorized Representative (typed or printed): _____

Authorized Representative (signature): _____

Title: _____

Sworn to and Subscribed before me this _____day of_____ 20_____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

Contract: A-14: Flooring

BID FORM

For Bids Due: January ~~14~~ **21**, 2020 To: ***Appoquinimink School District***
118 South Sixth Street
Odessa, DE 19730

Name of Bidder: _____

Bidder Address: _____

_____

Contact Name: _____ E-Mail Address: _____

Delaware Business License No.: _____ Taxpayer ID No.: _____

(Other License Nos.): _____
(A copy of Bidder's Delaware Business License must be attached to this form.)

Phone No.: ( ) _____ - _____ Fax No.: ( ) _____ - _____

The undersigned, representing that he has read and understands the Bidding Documents and that this bid is made in accordance therewith, that he has visited the site and has familiarized himself with the local conditions under which the Work is to be performed, and that his bid is based upon the materials, systems and equipment described in the Bidding Documents without exception, hereby proposes and agrees to provide all labor, materials, plant, equipment, supplies, transport and other facilities required to execute the work described by the aforesaid documents for the lump sum itemized below:

$_____ ($_____)

ALTERNATES
Alternate prices conform to applicable project specification section. Refer to specifications for a complete description of the following Alternates. An "ADD" or "DEDUCT" amount is indicated by the crossed out part that does not apply.

Alternate No. 1: Increase the Size of the Gymnasium

Add/Deduct _____($_____)

Alternate No. 5a: Change Gymnasium Floor to Wood (Alt. No. 1 – Base Bid)

Add/Deduct _____($_____)

Alternate No. 5b: Change Gymnasium Floor to Wood (Alt. No. 1 – Alternate)

Add/Deduct _____($_____)

I/We acknowledge Addendums numbered _____ and the price(s) submitted include any cost/schedule impact they may have.

This bid shall remain valid and cannot be withdrawn for sixty (60) days from the date of opening of bids, and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid.

The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.

This bid is based upon work being accomplished by the Sub-Contractors named on the list attached to this bid.

The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds, and Insurance Certificates, required by the Contract Documents.

I am / We are an Individual / a Partnership / a Corporation

By _____ Trading as _____
(Individual's / General Partner's / Corporate Name)

_____
(State of Corporation)

Business Address:_____
_____
_____
_____

Witness: _____ By: _____
(Authorized Signature)

(SEAL) _____
(Title)

Date: _____

ATTACHMENTS

Sub-Contractor List
Non-Collusion Statement
Bid Bond
Consent of Surety
Affidavit of Employee Drug Testing Program
Delaware Business License
Town of Middletown Contractor's License
(Others as Required by Project Manuals)

SUBCONTRACTOR LIST

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor must be listed for each category where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the Owner, **it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.**

Subcontractor Category	Subcontractor	Address (City & State)	**Subcontractors tax payer ID # or Delaware Business license #**
1. Carpet			
2. Wood Flooring			
3. Resilient Tile			
4. Resilient Sheet			
5. Caulking			

NON-COLLUSION STATEMENT

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date **January 14, 2020.**

All the terms and conditions of **Contract: A-14: Flooring** have been thoroughly examined and are understood.

NAME OF BIDDER: _____

AUTHORIZED REPRESENTATIVE (TYPED): _____

AUTHORIZED REPRESENTATIVE (SIGNATURE): _____

TITLE: _____

ADDRESS OF BIDDER: _____

_____

_____

PHONE NUMBER: _____

Sworn to and Subscribed before me this _____ day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

BID BOND

TO ACCOMPANY PROPOSAL
(Not necessary if security is used)

KNOW ALL MEN BY THESE PRESENTS That: _____of _____in the County of _____ and State of _____ as Principal, and _____of _____in the County of _____ _____ and State of _____ as Surety, legally authorized to do business in the State of Delaware ('State"), are held and firmly unto the **Appoquinimink School District** in the sum of _____ Dollars (S_____), or percent not to exceed _____ _____ Dollars (S_____) of amount of bid on Contract No. _____ to be paid to the **Appoquinimink School District** for the use and benefit of the **Appoquinimink School District** for which payment well and truly to be made, we do bind ourselves, our and each of our heirs, executors, administrators, and successors, jointly and severally for and in the whole firmly by these presents.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH That if the above bounden Principal who has submitted to the **Appoquinimink School District** a certain proposal to enter into this contract for the furnishing of certain material and/or services within the State, shall be awarded this Contract, and if said Principal shall well and truly enter into and execute this Contract as may be required by the terms of this Contract and approved by the **Appoquinimink School District** this Contract to be entered into within twenty days after the date of official notice of the award thereof in accordance with the terms of said proposal, then this obligation shall be void or else to be and remain in full force and virtue.

Sealed with _____seal and dated this____day of _____in the year of our Lord two thousand and _____(20__).

SEALED, AND DELIVERED IN THE PRESENCE OF

_____
Name of Bidder (Organization)

Corporate Seal

By:_____
Authorized Signature

Attest _____

_____
Title

_____
Name of Surety

Witness_____

_____

_____
Title

CONSENT OF SURETY

DATE_____

To: **Appoquinimink School District**
118 South Sixth Street
Odessa, DE 19730

Gentlemen:

We, the _____

_____
(Surety Company's Address)

_____

a Surety Company authorized to do business in the State of Delaware hereby agrees that if

_____
(Contractor)

_____
(Address)

_____

is awarded the Contract No. _____

We will write the required Performance and/or Labor and Material Bond required by Paragraph 9 of the Instructions to Bidders.

_____
(Surety Company)

By _____
(Attorney-in-Fact)

AFFIDAVIT
OF
EMPLOYEE DRUG TESTING PROGRAM

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds.

We hereby certify that we have in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for our employees on the jobsite, including subcontractors that complies with this regulation:

Contractor/Subcontractor Name: _____

Contractor/Subcontractor Address: _____

_____

_____

Authorized Representative (typed or printed): _____

Authorized Representative (signature): _____

Title: _____

Sworn to and Subscribed before me this _____day of_____ 20_____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

Contract: A-15: Resinous Flooring

BID FORM

For Bids Due: January ~~14~~ **21**, 2020 To: ***Appoquinimink School District***
118 South Sixth Street
Odessa, DE 19730

Name of Bidder: _____

Bidder Address: _____

_____

Contact Name: _____ E-Mail Address: _____

Delaware Business License No.:_____ Taxpayer ID No.: _____

(Other License Nos.): _____
(A copy of Bidder's Delaware Business License must be attached to this form.)

Phone No.: ( ) _____ - _____ Fax No.: ( ) _____ - _____

The undersigned, representing that he has read and understands the Bidding Documents and that this bid is made in accordance therewith, that he has visited the site and has familiarized himself with the local conditions under which the Work is to be performed, and that his bid is based upon the materials, systems and equipment described in the Bidding Documents without exception, hereby proposes and agrees to provide all labor, materials, plant, equipment, supplies, transport and other facilities required to execute the work described by the aforesaid documents for the lump sum itemized below:

$_____ ($_____)

I/We acknowledge Addendums numbered _____ and the price(s) submitted include any cost/schedule impact they may have.

This bid shall remain valid and cannot be withdrawn for sixty (60) days from the date of opening of bids, and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid.

The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.

This bid is based upon work being accomplished by the Sub-Contractors named on the list attached to this bid.

The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or

indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds, and Insurance Certificates, required by the Contract Documents.

I am / We are an Individual / a Partnership / a Corporation

By _____ Trading as _____
(Individual's / General Partner's / Corporate Name)

_____
(State of Corporation)

Business Address:_____
_____
_____
_____

Witness: _____ By: _____
(Authorized Signature)

(SEAL) _____
(Title)

Date: _____

ATTACHMENTS

Sub-Contractor List
Non-Collusion Statement
Bid Bond
Consent of Surety
Affidavit of Employee Drug Testing Program
Delaware Business License
Town of Middletown Contractor's License
(Others as Required by Project Manuals)

SUBCONTRACTOR LIST

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor must be listed for each category where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the Owner, **it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.**

Subcontractor Category	Subcontractor	Address (City & State)	**Subcontractors tax payer ID # or Delaware Business license #**
1. Resinous Flooring	_____	_____	_____

NON-COLLUSION STATEMENT

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date **January 14, 2020.**

All the terms and conditions of **Contract: A-15: Resinous Flooring** have been thoroughly examined and are understood.

NAME OF BIDDER: _____

AUTHORIZED REPRESENTATIVE (TYPED): _____

AUTHORIZED REPRESENTATIVE (SIGNATURE): _____

TITLE: _____

ADDRESS OF BIDDER: _____

_____

_____

PHONE NUMBER: _____

Sworn to and Subscribed before me this _____ day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

BID BOND

TO ACCOMPANY PROPOSAL
(Not necessary if security is used)

KNOW ALL MEN BY THESE PRESENTS That: _____of _____in the County of _____ and State of _____ as Principal, and _____of _____in the County of _____ _____ and State of _____ as Surety, legally authorized to do business in the State of Delaware ('State"), are held and firmly unto the **Appoquinimink School District** in the sum of _____ Dollars (S_____), or percent not to exceed _____ _____ Dollars (S_____) of amount of bid on Contract No. _____ to be paid to the **Appoquinimink School District** for the use and benefit of the **Appoquinimink School District** for which payment well and truly to be made, we do bind ourselves, our and each of our heirs, executors, administrators, and successors, jointly and severally for and in the whole firmly by these presents.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH That if the above bounden Principal who has submitted to the **Appoquinimink School District** a certain proposal to enter into this contract for the furnishing of certain material and/or services within the State, shall be awarded this Contract, and if said Principal shall well and truly enter into and execute this Contract as may be required by the terms of this Contract and approved by the **Appoquinimink School District** this Contract to be entered into within twenty days after the date of official notice of the award thereof in accordance with the terms of said proposal, then this obligation shall be void or else to be and remain in full force and virtue.

Sealed with _____seal and dated this____day of _____in the year of our Lord two thousand and _____(20__).

SEALED, AND DELIVERED IN THE PRESENCE OF

_____
Name of Bidder (Organization)

Corporate Seal

By:_____
Authorized Signature

Attest _____

_____
Title

_____
Name of Surety

Witness_____

_____

_____
Title

CONSENT OF SURETY

DATE_____

To: **Appoquinimink School District**
118 South Sixth Street
Odessa, DE 19730

Gentlemen:

We, the _____

_____
(Surety Company's Address)

_____

a Surety Company authorized to do business in the State of Delaware hereby agrees that if

_____
(Contractor)

_____
(Address)

_____

is awarded the Contract No. _____

We will write the required Performance and/or Labor and Material Bond required by Paragraph 9 of the Instructions to Bidders.

_____
(Surety Company)

By _____
(Attorney-in-Fact)

AFFIDAVIT
OF
EMPLOYEE DRUG TESTING PROGRAM

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds.

We hereby certify that we have in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for our employees on the jobsite, including subcontractors that complies with this regulation:

Contractor/Subcontractor Name: _____

Contractor/Subcontractor Address: _____

_____

_____

Authorized Representative (typed or printed): _____

Authorized Representative (signature): _____

Title: _____

Sworn to and Subscribed before me this _____day of_____ 20_____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

Contract: A-16: Ceramic Tile

BID FORM

For Bids Due: January ~~14~~ **21**, 2020 To: ***Appoquinimink School District***
118 South Sixth Street
Odessa, DE 19730

Name of Bidder: _____

Bidder Address: _____

_____

Contact Name: _____ E-Mail Address: _____

Delaware Business License No.:_____ Taxpayer ID No.: _____

(Other License Nos.): _____
(A copy of Bidder's Delaware Business License must be attached to this form.)

Phone No.: ( ) _____ - _____ Fax No.: ( ) _____ - _____

The undersigned, representing that he has read and understands the Bidding Documents and that this bid is made in accordance therewith, that he has visited the site and has familiarized himself with the local conditions under which the Work is to be performed, and that his bid is based upon the materials, systems and equipment described in the Bidding Documents without exception, hereby proposes and agrees to provide all labor, materials, plant, equipment, supplies, transport and other facilities required to execute the work described by the aforesaid documents for the lump sum itemized below:

$_____ ($_____)

I/We acknowledge Addendums numbered _____ and the price(s) submitted include any cost/schedule impact they may have.

This bid shall remain valid and cannot be withdrawn for sixty (60) days from the date of opening of bids, and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid.

The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.

This bid is based upon work being accomplished by the Sub-Contractors named on the list attached to this bid.

The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or

indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds, and Insurance Certificates, required by the Contract Documents.

I am / We are an Individual / a Partnership / a Corporation

By _____ Trading as _____
(Individual's / General Partner's / Corporate Name)

_____
(State of Corporation)

Business Address:_____
_____
_____
_____

Witness: _____ By: _____
(Authorized Signature)

(SEAL) _____
(Title)

Date: _____

ATTACHMENTS

Sub-Contractor List
Non-Collusion Statement
Bid Bond
Consent of Surety
Affidavit of Employee Drug Testing Program
Delaware Business License
Town of Middletown Contractor's License
(Others as Required by Project Manuals)

SUBCONTRACTOR LIST

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor must be listed for each category where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the Owner, **it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.**

Subcontractor Category	Subcontractor	Address (City & State)	**Subcontractors tax payer ID # or Delaware Business license #**
1. Ceramic Tile			
2. Caulking			

NON-COLLUSION STATEMENT

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date **January 14, 2020.**

All the terms and conditions of **Contract: A-16: Ceramic Tile** have been thoroughly examined and are understood.

NAME OF BIDDER: _____

AUTHORIZED REPRESENTATIVE (TYPED): _____

AUTHORIZED REPRESENTATIVE (SIGNATURE): _____

TITLE: _____

ADDRESS OF BIDDER: _____

_____

_____

PHONE NUMBER: _____

Sworn to and Subscribed before me this _____ day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

BID BOND

TO ACCOMPANY PROPOSAL
(Not necessary if security is used)

KNOW ALL MEN BY THESE PRESENTS That: _____of _____in the County of _____ and State of _____ as Principal, and _____of _____in the County of _____ _____ and State of _____ as Surety, legally authorized to do business in the State of Delaware ('State"), are held and firmly unto the **Appoquinimink School District** in the sum of _____ Dollars (S_____), or percent not to exceed _____ _____ Dollars (S_____) of amount of bid on Contract No. _____ to be paid to the **Appoquinimink School District** for the use and benefit of the **Appoquinimink School District** for which payment well and truly to be made, we do bind ourselves, our and each of our heirs, executors, administrators, and successors, jointly and severally for and in the whole firmly by these presents.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH That if the above bounden Principal who has submitted to the **Appoquinimink School District** a certain proposal to enter into this contract for the furnishing of certain material and/or services within the State, shall be awarded this Contract, and if said Principal shall well and truly enter into and execute this Contract as may be required by the terms of this Contract and approved by the **Appoquinimink School District** this Contract to be entered into within twenty days after the date of official notice of the award thereof in accordance with the terms of said proposal, then this obligation shall be void or else to be and remain in full force and virtue.

Sealed with _____seal and dated this____day of _____in the year of our Lord two thousand and _____(20__).

SEALED, AND DELIVERED IN THE PRESENCE OF

_____
Name of Bidder (Organization)

Corporate Seal

By:_____
Authorized Signature

Attest _____

_____
Title

_____
Name of Surety

Witness_____

_____

_____
Title

CONSENT OF SURETY

DATE_____

To: **Appoquinimink School District**
118 South Sixth Street
Odessa, DE 19730

Gentlemen:

We, the _____

_____
(Surety Company's Address)

_____

a Surety Company authorized to do business in the State of Delaware hereby agrees that if

_____
(Contractor)

_____
(Address)

_____

is awarded the Contract No. _____

We will write the required Performance and/or Labor and Material Bond required by Paragraph 9 of the Instructions to Bidders.

_____
(Surety Company)

By _____
(Attorney-in-Fact)

AFFIDAVIT
OF
EMPLOYEE DRUG TESTING PROGRAM

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds.

We hereby certify that we have in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for our employees on the jobsite, including subcontractors that complies with this regulation:

Contractor/Subcontractor Name: _____

Contractor/Subcontractor Address: _____

_____

_____

Authorized Representative (typed or printed): _____

Authorized Representative (signature): _____

Title: _____

Sworn to and Subscribed before me this _____day of_____ 20_____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

Contract: A-17: Kitchen Equipment

BID FORM

For Bids Due: January ~~14~~ **21**, 2020 To: ***Appoquinimink School District***
118 South Sixth Street
Odessa, DE 19730

Name of Bidder: _____

Bidder Address: _____

_____

Contact Name: _____ E-Mail Address: _____

Delaware Business License No.:_____ Taxpayer ID No.: _____

(Other License Nos.): _____
(A copy of Bidder's Delaware Business License must be attached to this form.)

Phone No.: ( ) _____ - _____ Fax No.: ( ) _____ - _____

The undersigned, representing that he has read and understands the Bidding Documents and that this bid is made in accordance therewith, that he has visited the site and has familiarized himself with the local conditions under which the Work is to be performed, and that his bid is based upon the materials, systems and equipment described in the Bidding Documents without exception, hereby proposes and agrees to provide all labor, materials, plant, equipment, supplies, transport and other facilities required to execute the work described by the aforesaid documents for the lump sum itemized below:

$_____ ($_____)

I/We acknowledge Addendums numbered _____ and the price(s) submitted include any cost/schedule impact they may have.

This bid shall remain valid and cannot be withdrawn for sixty (60) days from the date of opening of bids, and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid.

The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.

This bid is based upon work being accomplished by the Sub-Contractors named on the list attached to this bid.

The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or

indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds, and Insurance Certificates, required by the Contract Documents.

I am / We are an Individual / a Partnership / a Corporation

By _____ Trading as _____
(Individual's / General Partner's / Corporate Name)

_____
(State of Corporation)

Business Address:_____
_____
_____
_____

Witness: _____ By: _____
(Authorized Signature)

(SEAL) _____
(Title)

Date: _____

ATTACHMENTS

Sub-Contractor List
Non-Collusion Statement
Bid Bond
Consent of Surety
Affidavit of Employee Drug Testing Program
Delaware Business License
Town of Middletown Contractor's License
(Others as Required by Project Manuals)

SUBCONTRACTOR LIST

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor must be listed for each category where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the Owner, **it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.**

Subcontractor Category	Subcontractor	Address (City & State)	**Subcontractors tax payer ID # or Delaware Business license #**
1. Kitchen Equipment			

NON-COLLUSION STATEMENT

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date **January 14, 2020.**

All the terms and conditions of **Contract: A-17: Kitchen Equipment** have been thoroughly examined and are understood.

NAME OF BIDDER: _____

AUTHORIZED REPRESENTATIVE (TYPED): _____

AUTHORIZED REPRESENTATIVE (SIGNATURE): _____

TITLE: _____

ADDRESS OF BIDDER: _____

_____

_____

PHONE NUMBER: _____

Sworn to and Subscribed before me this _____ day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

BID BOND

TO ACCOMPANY PROPOSAL
(Not necessary if security is used)

KNOW ALL MEN BY THESE PRESENTS That: _____of _____in the County of _____ and State of _____ as Principal, and _____of _____in the County of _____ _____ and State of _____ as Surety, legally authorized to do business in the State of Delaware ('State"), are held and firmly unto the **Appoquinimink School District** in the sum of _____ Dollars (S_____), or percent not to exceed _____ _____ Dollars (S_____) of amount of bid on Contract No. _____ to be paid to the **Appoquinimink School District** for the use and benefit of the **Appoquinimink School District** for which payment well and truly to be made, we do bind ourselves, our and each of our heirs, executors, administrators, and successors, jointly and severally for and in the whole firmly by these presents.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH That if the above bounden Principal who has submitted to the **Appoquinimink School District** a certain proposal to enter into this contract for the furnishing of certain material and/or services within the State, shall be awarded this Contract, and if said Principal shall well and truly enter into and execute this Contract as may be required by the terms of this Contract and approved by the **Appoquinimink School District** this Contract to be entered into within twenty days after the date of official notice of the award thereof in accordance with the terms of said proposal, then this obligation shall be void or else to be and remain in full force and virtue.

Sealed with _____seal and dated this____day of _____in the year of our Lord two thousand and _____(20__).

SEALED, AND DELIVERED IN THE PRESENCE OF

_____
Name of Bidder (Organization)

Corporate Seal

By:_____
Authorized Signature

Attest _____

_____
Title

_____
Name of Surety

Witness_____

_____

_____
Title

CONSENT OF SURETY

DATE_____

To: **Appoquinimink School District**
118 South Sixth Street
Odessa, DE 19730

Gentlemen:

We, the _____

_____
(Surety Company's Address)

_____

a Surety Company authorized to do business in the State of Delaware hereby agrees that if

_____
(Contractor)

_____
(Address)

_____

is awarded the Contract No. _____

We will write the required Performance and/or Labor and Material Bond required by Paragraph 9 of the Instructions to Bidders.

_____
(Surety Company)

By _____
(Attorney-in-Fact)

AFFIDAVIT
OF
EMPLOYEE DRUG TESTING PROGRAM

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds.

We hereby certify that we have in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for our employees on the jobsite, including subcontractors that complies with this regulation:

Contractor/Subcontractor Name: _____

Contractor/Subcontractor Address: _____

_____

_____

Authorized Representative (typed or printed): _____

Authorized Representative (signature): _____

Title: _____

Sworn to and Subscribed before me this _____day of_____ 20_____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

Contract: A-18: Fire Protection

BID FORM

For Bids Due: January ~~14~~ **21**, 2020 To: ***Appoquinimink School District***
118 South Sixth Street
Odessa, DE 19730

Name of Bidder: _____

Bidder Address: _____

_____

Contact Name: _____ E-Mail Address: _____

Delaware Business License No.:_____ Taxpayer ID No.: _____

(Other License Nos.): _____
(A copy of Bidder's Delaware Business License must be attached to this form.)

Phone No.: ( ) _____ - _____ Fax No.: ( ) _____ - _____

The undersigned, representing that he has read and understands the Bidding Documents and that this bid is made in accordance therewith, that he has visited the site and has familiarized himself with the local conditions under which the Work is to be performed, and that his bid is based upon the materials, systems and equipment described in the Bidding Documents without exception, hereby proposes and agrees to provide all labor, materials, plant, equipment, supplies, transport and other facilities required to execute the work described by the aforesaid documents for the lump sum itemized below:

1. **LUMP SUM PRICE FOR THE CONTRACT WORK** **$**_____
2. **LUMP SUM PRICE FOR BIM COORDINATION** **$**_____

TOTAL BASE BID AMOUNT **$**_____

(AMOUNT IN DOLLARS & CENTS)

$_____

(TOTAL AMOUNT IN WRITTEN WORDS)

(BPA ADDENDUM NO. 4)

ALTERNATES
Alternate prices conform to applicable project specification section. Refer to specifications for a complete description of the following Alternates. An "ADD" or "DEDUCT" amount is indicated by the crossed out part that does not apply.

Alternate No. 1: Increase the Size of the Gymnasium

Add/Deduct _____($_____)

Alternate No. 7: Add Decorative Ceilings in Common Areas

Add/Deduct _____($_____)

Alternate No. 8: Add Outdoor Classroom in the Courtyard

Add/Deduct _____($_____)

I/We acknowledge Addendums numbered _____ and the price(s) submitted include any cost/schedule impact they may have.

This bid shall remain valid and cannot be withdrawn for sixty (60) days from the date of opening of bids, and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid.

The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.

This bid is based upon work being accomplished by the Sub-Contractors named on the list attached to this bid.

The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds, and Insurance Certificates, required by the Contract Documents.

I am / We are an Individual / a Partnership / a Corporation

By _____ Trading as _____
(Individual's / General Partner's / Corporate Name)

_____
(State of Corporation)

Business Address:_____

_____

_____
_____

Witness: _____ By: _____
(Authorized Signature)

(SEAL) _____
(Title)

Date: _____

ATTACHMENTS

Sub-Contractor List
Non-Collusion Statement
Bid Bond
Consent of Surety
Affidavit of Employee Drug Testing Program
Delaware Business License
Town of Middletown Contractor's License
(Others as Required by Project Manuals)

SUBCONTRACTOR LIST

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor must be listed for each category where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the Owner, **it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.**

Subcontractor Category	Subcontractor	Address (City & State)	**Subcontractors tax payer ID # or Delaware Business license #**
1. Fire Protection			
2. Caulking			

NON-COLLUSION STATEMENT

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date **January 14, 2020.**

All the terms and conditions of **Contract: A-18: Fire Protection** have been thoroughly examined and are understood.

NAME OF BIDDER: _____

AUTHORIZED REPRESENTATIVE (TYPED): _____

AUTHORIZED REPRESENTATIVE (SIGNATURE): _____

TITLE: _____

ADDRESS OF BIDDER: _____

_____

_____

PHONE NUMBER: _____

Sworn to and Subscribed before me this _____ day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

BID BOND

TO ACCOMPANY PROPOSAL
(Not necessary if security is used)

KNOW ALL MEN BY THESE PRESENTS That: _____of _____in the County of _____ and State of _____ as Principal, and _____of _____in the County of _____ _____ and State of _____ as Surety, legally authorized to do business in the State of Delaware ('State"), are held and firmly unto the **Appoquinimink School District** in the sum of _____ Dollars (S_____), or percent not to exceed _____ _____ Dollars (S_____) of amount of bid on Contract No. _____ to be paid to the **Appoquinimink School District** for the use and benefit of the **Appoquinimink School District** for which payment well and truly to be made, we do bind ourselves, our and each of our heirs, executors, administrators, and successors, jointly and severally for and in the whole firmly by these presents.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH That if the above bounden Principal who has submitted to the **Appoquinimink School District** a certain proposal to enter into this contract for the furnishing of certain material and/or services within the State, shall be awarded this Contract, and if said Principal shall well and truly enter into and execute this Contract as may be required by the terms of this Contract and approved by the **Appoquinimink School District** this Contract to be entered into within twenty days after the date of official notice of the award thereof in accordance with the terms of said proposal, then this obligation shall be void or else to be and remain in full force and virtue.

Sealed with _____seal and dated this____day of _____in the year of our Lord two thousand and _____(20__).

SEALED, AND DELIVERED IN THE PRESENCE OF

_____
Name of Bidder (Organization)

Corporate Seal

By:_____
Authorized Signature

Attest _____

_____
Title

_____
Name of Surety

Witness_____

_____

_____
Title

CONSENT OF SURETY

DATE_____

To: **Appoquinimink School District**
118 South Sixth Street
Odessa, DE 19730

Gentlemen:

We, the _____

_____
(Surety Company's Address)

_____

a Surety Company authorized to do business in the State of Delaware hereby agrees that if

_____
(Contractor)

_____
(Address)

_____

is awarded the Contract No. _____

We will write the required Performance and/or Labor and Material Bond required by Paragraph 9 of the Instructions to Bidders.

_____
(Surety Company)

By _____
(Attorney-in-Fact)

AFFIDAVIT
OF
EMPLOYEE DRUG TESTING PROGRAM

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds.

We hereby certify that we have in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for our employees on the jobsite, including subcontractors that complies with this regulation:

Contractor/Subcontractor Name: _____

Contractor/Subcontractor Address: _____

_____

_____

Authorized Representative (typed or printed): _____

Authorized Representative (signature): _____

Title: _____

Sworn to and Subscribed before me this _____day of_____ 20_____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

Contract: A-19: Mechanical & Plumbing

BID FORM

For Bids Due: January ~~14~~ **21**, 2020 To: ***Appoquinimink School District***
118 South Sixth Street
Odessa, DE 19730

Name of Bidder: _____

Bidder Address: _____

_____

Contact Name: _____ E-Mail Address: _____

Delaware Business License No.: _____ Taxpayer ID No.: _____

(Other License Nos.): _____
(A copy of Bidder's Delaware Business License must be attached to this form.)

Phone No.: ( ) _____ - _____ Fax No.: ( ) _____ - _____

The undersigned, representing that he has read and understands the Bidding Documents and that this bid is made in accordance therewith, that he has visited the site and has familiarized himself with the local conditions under which the Work is to be performed, and that his bid is based upon the materials, systems and equipment described in the Bidding Documents without exception, hereby proposes and agrees to provide all labor, materials, plant, equipment, supplies, transport and other facilities required to execute the work described by the aforesaid documents for the lump sum itemized below:

1. **LUMP SUM PRICE FOR THE CONTRACT WORK** **$**_____
2. **LUMP SUM PRICE FOR BIM COORDINATION** **$**_____

TOTAL BASE BID AMOUNT **$**_____

(AMOUNT IN DOLLARS & CENTS)

$_____

(TOTAL AMOUNT IN WRITTEN WORDS)

(BPA ADDENDUM NO. 4)

ALTERNATES
Alternate prices conform to applicable project specification section. Refer to specifications for a complete description of the following Alternates. An "ADD" or "DEDUCT" amount is indicated by the crossed out part that does not apply.

Alternate No. 1: Increase the Size of the Gymnasium

Add/Deduct _____($_____)

Alternate No. 7: Add Decorative Ceilings in Common Areas

Add/Deduct _____($_____)

I/We acknowledge Addendums numbered _____ and the price(s) submitted include any cost/schedule impact they may have.

This bid shall remain valid and cannot be withdrawn for sixty (60) days from the date of opening of bids, and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid.

The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.

This bid is based upon work being accomplished by the Sub-Contractors named on the list attached to this bid.

The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds, and Insurance Certificates, required by the Contract Documents.

I am / We are an Individual / a Partnership / a Corporation

By _____ Trading as _____
(Individual's / General Partner's / Corporate Name)

_____
(State of Corporation)

Business Address:_____
_____
_____
_____

Witness: _____ By: _____
(Authorized Signature)

(SEAL) _____
(Title)

Date: _____

ATTACHMENTS

Sub-Contractor List
Non-Collusion Statement
Bid Bond
Consent of Surety
Affidavit of Employee Drug Testing Program
Delaware Business License
Town of Middletown Contractor's License
(Others as Required by Project Manuals)

SUBCONTRACTOR LIST

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor must be listed for each category where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the Owner, **it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.**

Subcontractor Category	Subcontractor	Address (City & State)	**Subcontractors tax payer ID # or Delaware Business license #**
1. Mechanical			
2. Plumbing			
3. Ductwork			
4. Insulation			
5. Welded Pipe Installer			
6. Grease Trap			

NON-COLLUSION STATEMENT

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date **January 14, 2020.**

All the terms and conditions of **Contract: A-19: Mechanical & Plumbing** have been thoroughly examined and are understood.

NAME OF BIDDER: _____

AUTHORIZED REPRESENTATIVE (TYPED): _____

AUTHORIZED REPRESENTATIVE (SIGNATURE): _____

TITLE: _____

ADDRESS OF BIDDER: _____

_____

_____

PHONE NUMBER: _____

Sworn to and Subscribed before me this _____ day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

BID BOND

TO ACCOMPANY PROPOSAL
(Not necessary if security is used)

KNOW ALL MEN BY THESE PRESENTS That: _____of _____in the County of _____ and State of _____ as Principal, and _____of _____in the County of _____ _____ and State of _____ as Surety, legally authorized to do business in the State of Delaware ('State"), are held and firmly unto the **Appoquinimink School District** in the sum of _____ Dollars (S_____), or percent not to exceed _____ _____ Dollars (S_____) of amount of bid on Contract No. _____ to be paid to the **Appoquinimink School District** for the use and benefit of the **Appoquinimink School District** for which payment well and truly to be made, we do bind ourselves, our and each of our heirs, executors, administrators, and successors, jointly and severally for and in the whole firmly by these presents.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH That if the above bounden Principal who has submitted to the **Appoquinimink School District** a certain proposal to enter into this contract for the furnishing of certain material and/or services within the State, shall be awarded this Contract, and if said Principal shall well and truly enter into and execute this Contract as may be required by the terms of this Contract and approved by the **Appoquinimink School District** this Contract to be entered into within twenty days after the date of official notice of the award thereof in accordance with the terms of said proposal, then this obligation shall be void or else to be and remain in full force and virtue.

Sealed with _____seal and dated this____day of _____in the year of our Lord two thousand and _____(20__).

SEALED, AND DELIVERED IN THE PRESENCE OF

_____
Name of Bidder (Organization)

Corporate Seal

By:_____
Authorized Signature

Attest _____

_____
Title

_____
Name of Surety

Witness_____

_____

_____
Title

CONSENT OF SURETY

DATE_____

To: **Appoquinimink School District**
118 South Sixth Street
Odessa, DE 19730

Gentlemen:

We, the _____

_____
(Surety Company's Address)

_____

a Surety Company authorized to do business in the State of Delaware hereby agrees that if

_____
(Contractor)

_____
(Address)

_____

is awarded the Contract No. _____

We will write the required Performance and/or Labor and Material Bond required by Paragraph 9 of the Instructions to Bidders.

_____
(Surety Company)

By _____
(Attorney-in-Fact)

AFFIDAVIT
OF
EMPLOYEE DRUG TESTING PROGRAM

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds.

We hereby certify that we have in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for our employees on the jobsite, including subcontractors that complies with this regulation:

Contractor/Subcontractor Name: _____

Contractor/Subcontractor Address: _____

_____

_____

Authorized Representative (typed or printed): _____

Authorized Representative (signature): _____

Title: _____

Sworn to and Subscribed before me this _____day of_____ 20_____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

Contract: A-20: Building Management Systems

BID FORM

For Bids Due: January ~~14~~ **21**, 2020 To: ***Appoquinimink School District***
118 South Sixth Street
Odessa, DE 19730

Name of Bidder: _____

Bidder Address: _____

_____

Contact Name: _____ E-Mail Address: _____

Delaware Business License No.: _____ Taxpayer ID No.: _____

(Other License Nos.): _____
(A copy of Bidder's Delaware Business License must be attached to this form.)

Phone No.: ( ) _____ - _____ Fax No.: ( ) _____ - _____

The undersigned, representing that he has read and understands the Bidding Documents and that this bid is made in accordance therewith, that he has visited the site and has familiarized himself with the local conditions under which the Work is to be performed, and that his bid is based upon the materials, systems and equipment described in the Bidding Documents without exception, hereby proposes and agrees to provide all labor, materials, plant, equipment, supplies, transport and other facilities required to execute the work described by the aforesaid documents for the lump sum itemized below:

$_____ ($_____)

ALTERNATES
Alternate prices conform to applicable project specification section. Refer to specifications for a complete description of the following Alternates. An "ADD" or "DEDUCT" amount is indicated by the crossed out part that does not apply.

Alternate No. 1: Increase the Size of the Gymnasium

Add/Deduct _____($_____)

I/We acknowledge Addendums numbered _____ and the price(s) submitted include any cost/schedule impact they may have.

This bid shall remain valid and cannot be withdrawn for sixty (60) days from the date of opening of bids, and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid.

The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.

This bid is based upon work being accomplished by the Sub-Contractors named on the list attached to this bid.

The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds, and Insurance Certificates, required by the Contract Documents.

I am / We are an Individual / a Partnership / a Corporation

By _____ Trading as _____
(Individual's / General Partner's / Corporate Name)

_____
(State of Corporation)

Business Address:_____
_____
_____
_____

Witness: _____ By: _____
(Authorized Signature)

(SEAL) _____
(Title)

Date: _____

ATTACHMENTS

Sub-Contractor List
Non-Collusion Statement
Bid Bond
Consent of Surety
Affidavit of Employee Drug Testing Program
Delaware Business License
Town of Middletown Contractor's License
(Others as Required by Project Manuals)

SUBCONTRACTOR LIST

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor must be listed for each category where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the Owner, **it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.**

Subcontractor Category	Subcontractor	Address (City & State)	**Subcontractors tax payer ID # or Delaware Business license #**
1. Building Management System			

NON-COLLUSION STATEMENT

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date **January 14, 2020.**

All the terms and conditions of **Contract: A-20: Building Management Systems** have been thoroughly examined and are understood.

NAME OF BIDDER: _____

AUTHORIZED REPRESENTATIVE (TYPED): _____

AUTHORIZED REPRESENTATIVE (SIGNATURE): _____

TITLE: _____

ADDRESS OF BIDDER: _____

_____

_____

PHONE NUMBER: _____

Sworn to and Subscribed before me this _____ day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

BID BOND

TO ACCOMPANY PROPOSAL
(Not necessary if security is used)

KNOW ALL MEN BY THESE PRESENTS That: _____of _____in the County of _____ and State of _____ as Principal, and _____of _____in the County of _____ _____ and State of _____ as Surety, legally authorized to do business in the State of Delaware ('State"), are held and firmly unto the **Appoquinimink School District** in the sum of _____ Dollars (S_____), or percent not to exceed _____ _____ Dollars (S_____) of amount of bid on Contract No. _____ to be paid to the **Appoquinimink School District** for the use and benefit of the **Appoquinimink School District** for which payment well and truly to be made, we do bind ourselves, our and each of our heirs, executors, administrators, and successors, jointly and severally for and in the whole firmly by these presents.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH That if the above bounden Principal who has submitted to the **Appoquinimink School District** a certain proposal to enter into this contract for the furnishing of certain material and/or services within the State, shall be awarded this Contract, and if said Principal shall well and truly enter into and execute this Contract as may be required by the terms of this Contract and approved by the **Appoquinimink School District** this Contract to be entered into within twenty days after the date of official notice of the award thereof in accordance with the terms of said proposal, then this obligation shall be void or else to be and remain in full force and virtue.

Sealed with _____seal and dated this____day of _____in the year of our Lord two thousand and _____(20__).

SEALED, AND DELIVERED IN THE PRESENCE OF

_____
Name of Bidder (Organization)

Corporate Seal

By:_____
Authorized Signature

Attest _____

_____
Title

_____
Name of Surety

Witness_____

_____

_____
Title

CONSENT OF SURETY

DATE_____

To: **Appoquinimink School District**
118 South Sixth Street
Odessa, DE 19730

Gentlemen:

We, the _____

_____
(Surety Company's Address)

_____

a Surety Company authorized to do business in the State of Delaware hereby agrees that if

_____
(Contractor)

_____
(Address)

_____

is awarded the Contract No. _____

We will write the required Performance and/or Labor and Material Bond required by Paragraph 9 of the Instructions to Bidders.

_____
(Surety Company)

By _____
(Attorney-in-Fact)

AFFIDAVIT
OF
EMPLOYEE DRUG TESTING PROGRAM

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds.

We hereby certify that we have in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for our employees on the jobsite, including subcontractors that complies with this regulation:

Contractor/Subcontractor Name: _____

Contractor/Subcontractor Address: _____

_____

_____

Authorized Representative (typed or printed): _____

Authorized Representative (signature): _____

Title: _____

Sworn to and Subscribed before me this _____day of_____ 20_____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

Contract: A-21: Electrical

BID FORM

For Bids Due: January ~~14~~ **21**, 2020 To: ***Appoquinimink School District***
118 South Sixth Street
Odessa, DE 19730

Name of Bidder: _____

Bidder Address: _____

_____

Contact Name: _____ E-Mail Address: _____

Delaware Business License No.: _____ Taxpayer ID No.: _____

(Other License Nos.): _____
(A copy of Bidder's Delaware Business License must be attached to this form.)

Phone No.: ( ) _____ - _____ Fax No.: ( ) _____ - _____

The undersigned, representing that he has read and understands the Bidding Documents and that this bid is made in accordance therewith, that he has visited the site and has familiarized himself with the local conditions under which the Work is to be performed, and that his bid is based upon the materials, systems and equipment described in the Bidding Documents without exception, hereby proposes and agrees to provide all labor, materials, plant, equipment, supplies, transport and other facilities required to execute the work described by the aforesaid documents for the lump sum itemized below:

1. **LUMP SUM PRICE FOR THE CONTRACT WORK** **$**_____
2. **LUMP SUM PRICE FOR BIM COORDINATION** **$**_____

TOTAL BASE BID AMOUNT **$**_____

(AMOUNT IN DOLLARS & CENTS)

$_____

(TOTAL AMOUNT IN WRITTEN WORDS)

(BPA ADDENDUM NO. 4)

ALTERNATES
Alternate prices conform to applicable project specification section. Refer to specifications for a complete description of the following Alternates. An "ADD" or "DEDUCT" amount is indicated by the crossed out part that does not apply.

Alternate No. 1: Increase the Size of the Gymnasium

Add/Deduct _____ ($_____)

~~Alternate No. 5a: Change Gymnasium Floor to Wood (Alt. No. 1 – Base Bid)~~

~~Add/Deduct _____ ($_____)~~

~~Alternate No. 5b: Change Gymnasium Floor to Wood (Alt. No. 1 – Alternate)~~ **(BP1 ADDENDUM NO. 2)**

~~Add/Deduct _____ ($_____)~~

Alternate No. 7: Add Decorative Ceilings in Common Areas

Add/Deduct _____ ($_____)

~~Alternate No. 8: Add Outdoor Classroom in the Courtyard~~ **(BP1 ADDENDUM NO. 2)**

~~Add/Deduct _____ ($_____)~~

~~Alternate No. 9: Courtyard Landscaping~~ **(BP1 ADDENDUM NO. 2)**

~~Add/Deduct _____ ($_____)~~

Alternate No. 12: Provide Lightning Protection System (BP1 ADDENDUM NO. 2)

Add/Deduct _____ ($_____)

I/We acknowledge Addendums numbered _____ and the price(s) submitted include any cost/schedule impact they may have.

This bid shall remain valid and cannot be withdrawn for sixty (60) days from the date of opening of bids, and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid.

The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.

This bid is based upon work being accomplished by the Sub-Contractors named on the list attached to this bid.

The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or

indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds, and Insurance Certificates, required by the Contract Documents.

I am / We are an Individual / a Partnership / a Corporation

By _____ Trading as _____
(Individual's / General Partner's / Corporate Name)

_____
(State of Corporation)

Business Address:_____
_____
_____
_____

Witness: _____ By: _____
(Authorized Signature)

(SEAL) _____
(Title)

Date: _____

ATTACHMENTS

Sub-Contractor List
Non-Collusion Statement
Bid Bond
Consent of Surety
Affidavit of Employee Drug Testing Program
Delaware Business License
Town of Middletown Contractor's License
(Others as Required by Project Manuals)

SUBCONTRACTOR LIST

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor must be listed for each category where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the Owner, **it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.**

Subcontractor Category	Subcontractor	Address (City & State)	**Subcontractors tax payer ID # or Delaware Business license #**
1. Electrical			
2. Caulking			

NON-COLLUSION STATEMENT

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date **January 14, 2020.**

All the terms and conditions of **Contract: A-21: Electrical** have been thoroughly examined and are understood.

NAME OF BIDDER: _____

AUTHORIZED REPRESENTATIVE (TYPED): _____

AUTHORIZED REPRESENTATIVE (SIGNATURE): _____

TITLE: _____

ADDRESS OF BIDDER: _____

_____

_____

PHONE NUMBER: _____

Sworn to and Subscribed before me this _____ day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

BID BOND

TO ACCOMPANY PROPOSAL
(Not necessary if security is used)

KNOW ALL MEN BY THESE PRESENTS That: _____of _____in the County of _____ and State of _____ as Principal, and _____of _____in the County of _____ _____ and State of _____ as Surety, legally authorized to do business in the State of Delaware ('State"), are held and firmly unto the **Appoquinimink School District** in the sum of _____ Dollars (S_____), or percent not to exceed _____ _____ Dollars (S_____) of amount of bid on Contract No. _____ to be paid to the **Appoquinimink School District** for the use and benefit of the **Appoquinimink School District** for which payment well and truly to be made, we do bind ourselves, our and each of our heirs, executors, administrators, and successors, jointly and severally for and in the whole firmly by these presents.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH That if the above bounden Principal who has submitted to the **Appoquinimink School District** a certain proposal to enter into this contract for the furnishing of certain material and/or services within the State, shall be awarded this Contract, and if said Principal shall well and truly enter into and execute this Contract as may be required by the terms of this Contract and approved by the **Appoquinimink School District** this Contract to be entered into within twenty days after the date of official notice of the award thereof in accordance with the terms of said proposal, then this obligation shall be void or else to be and remain in full force and virtue.

Sealed with _____seal and dated this____day of _____in the year of our Lord two thousand and _____(20__).

SEALED, AND DELIVERED IN THE PRESENCE OF

_____
Name of Bidder (Organization)

Corporate Seal

By:_____
Authorized Signature

Attest _____

_____
Title

_____
Name of Surety

Witness_____

_____

_____
Title

CONSENT OF SURETY

DATE_____

To: **Appoquinimink School District**
118 South Sixth Street
Odessa, DE 19730

Gentlemen:

We, the _____

_____
(Surety Company's Address)

_____

a Surety Company authorized to do business in the State of Delaware hereby agrees that if

_____
(Contractor)

_____
(Address)

_____

is awarded the Contract No. _____

We will write the required Performance and/or Labor and Material Bond required by Paragraph 9 of the Instructions to Bidders.

_____
(Surety Company)

By _____
(Attorney-in-Fact)

AFFIDAVIT
OF
EMPLOYEE DRUG TESTING PROGRAM

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds.

We hereby certify that we have in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for our employees on the jobsite, including subcontractors that complies with this regulation:

Contractor/Subcontractor Name: _____

Contractor/Subcontractor Address: _____

_____

_____

Authorized Representative (typed or printed): _____

Authorized Representative (signature): _____

Title: _____

Sworn to and Subscribed before me this _____day of_____ 20_____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

Contract: A-22: Special Systems

BID FORM

For Bids Due: January ~~14~~ **21**, 2020 To: ***Appoquinimink School District***
118 South Sixth Street
Odessa, DE 19730

Name of Bidder: _____

Bidder Address: _____

_____

Contact Name: _____ E-Mail Address: _____

Delaware Business License No.: _____ Taxpayer ID No.: _____

(Other License Nos.): _____
(A copy of Bidder's Delaware Business License must be attached to this form.)

Phone No.: ( ) _____ - _____ Fax No.: ( ) _____ - _____

The undersigned, representing that he has read and understands the Bidding Documents and that this bid is made in accordance therewith, that he has visited the site and has familiarized himself with the local conditions under which the Work is to be performed, and that his bid is based upon the materials, systems and equipment described in the Bidding Documents without exception, hereby proposes and agrees to provide all labor, materials, plant, equipment, supplies, transport and other facilities required to execute the work described by the aforesaid documents for the lump sum itemized below:

$_____ ($_____)

ALTERNATES
Alternate prices conform to applicable project specification section. Refer to specifications for a complete description of the following Alternates. An "ADD" or "DEDUCT" amount is indicated by the crossed out part that does not apply.

Alternate No. 1: Increase the Size of the Gymnasium

Add/Deduct _____($_____)

Alternate No. 8: Add Outdoor Classroom in the Courtyard

Add/Deduct _____($_____)

I/We acknowledge Addendums numbered _____ and the price(s) submitted include any cost/schedule impact they may have.

This bid shall remain valid and cannot be withdrawn for sixty (60) days from the date of opening of bids, and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid.

The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.

This bid is based upon work being accomplished by the Sub-Contractors named on the list attached to this bid.

The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds, and Insurance Certificates, required by the Contract Documents.

I am / We are an Individual / a Partnership / a Corporation

By _____ Trading as _____
(Individual's / General Partner's / Corporate Name)

_____
(State of Corporation)

Business Address:_____
_____
_____
_____

Witness: _____ By: _____
(Authorized Signature)

(SEAL) _____
(Title)

Date: _____

ATTACHMENTS
Sub-Contractor List
Non-Collusion Statement

Bid Bond
Consent of Surety
Affidavit of Employee Drug Testing Program
Delaware Business License
Town of Middletown Contractor's License
(Others as Required by Project Manuals)

SUBCONTRACTOR LIST

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor must be listed for each category where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the Owner, **it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.**

Subcontractor Category	Subcontractor	Address (City & State)	**Subcontractors tax payer ID # or Delaware Business license #**
1. Fire Alarm			
2. Audio/Visual Systems			
3. Intrusion System			
4. Wireless Clock System			
5. Access Control System			
6. CCTV System			

NON-COLLUSION STATEMENT

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date **January 14, 2020.**

All the terms and conditions of **Contract: A-22: Special Systems** have been thoroughly examined and are understood.

NAME OF BIDDER: _____

AUTHORIZED REPRESENTATIVE (TYPED): _____

AUTHORIZED REPRESENTATIVE (SIGNATURE): _____

TITLE: _____

ADDRESS OF BIDDER: _____

_____

_____

PHONE NUMBER: _____

Sworn to and Subscribed before me this _____ day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

BID BOND

TO ACCOMPANY PROPOSAL
(Not necessary if security is used)

KNOW ALL MEN BY THESE PRESENTS That: _____of _____in the County of _____ and State of _____ as Principal, and _____of _____in the County of _____ _____ and State of _____ as Surety, legally authorized to do business in the State of Delaware ('State"), are held and firmly unto the **Appoquinimink School District** in the sum of _____ Dollars (S_____), or percent not to exceed _____ _____ Dollars (S_____) of amount of bid on Contract No. _____ to be paid to the **Appoquinimink School District** for the use and benefit of the **Appoquinimink School District** for which payment well and truly to be made, we do bind ourselves, our and each of our heirs, executors, administrators, and successors, jointly and severally for and in the whole firmly by these presents.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH That if the above bounden Principal who has submitted to the **Appoquinimink School District** a certain proposal to enter into this contract for the furnishing of certain material and/or services within the State, shall be awarded this Contract, and if said Principal shall well and truly enter into and execute this Contract as may be required by the terms of this Contract and approved by the **Appoquinimink School District** this Contract to be entered into within twenty days after the date of official notice of the award thereof in accordance with the terms of said proposal, then this obligation shall be void or else to be and remain in full force and virtue.

Sealed with _____seal and dated this____day of _____in the year of our Lord two thousand and _____(20__).

SEALED, AND DELIVERED IN THE PRESENCE OF

_____
Name of Bidder (Organization)

Corporate Seal

By:_____
Authorized Signature

Attest _____

_____
Title

_____
Name of Surety

Witness_____

_____

_____
Title

CONSENT OF SURETY

DATE_____

To: **Appoquinimink School District**
118 South Sixth Street
Odessa, DE 19730

Gentlemen:

We, the _____

_____
(Surety Company's Address)

_____

a Surety Company authorized to do business in the State of Delaware hereby agrees that if

_____
(Contractor)

_____
(Address)

_____

is awarded the Contract No. _____

We will write the required Performance and/or Labor and Material Bond required by Paragraph 9 of the Instructions to Bidders.

_____
(Surety Company)

By _____
(Attorney-in-Fact)

AFFIDAVIT
OF
EMPLOYEE DRUG TESTING PROGRAM

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds.

We hereby certify that we have in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for our employees on the jobsite, including subcontractors that complies with this regulation:

Contractor/Subcontractor Name: _____

Contractor/Subcontractor Address: _____

_____

_____

Authorized Representative (typed or printed): _____

Authorized Representative (signature): _____

Title: _____

Sworn to and Subscribed before me this _____day of_____ 20_____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

Contract: A-23: Structured Cable

BID FORM

For Bids Due: January ~~14~~ **21**, 2020 To: ***Appoquinimink School District***
118 South Sixth Street
Odessa, DE 19730

Name of Bidder: _____

Bidder Address: _____

_____

Contact Name: _____ E-Mail Address: _____

Delaware Business License No.: _____ Taxpayer ID No.: _____

(Other License Nos.): _____
(A copy of Bidder's Delaware Business License must be attached to this form.)

Phone No.: ( ) _____ - _____ Fax No.: ( ) _____ - _____

The undersigned, representing that he has read and understands the Bidding Documents and that this bid is made in accordance therewith, that he has visited the site and has familiarized himself with the local conditions under which the Work is to be performed, and that his bid is based upon the materials, systems and equipment described in the Bidding Documents without exception, hereby proposes and agrees to provide all labor, materials, plant, equipment, supplies, transport and other facilities required to execute the work described by the aforesaid documents for the lump sum itemized below:

$_____ ($_____)

ALTERNATES
Alternate prices conform to applicable project specification section. Refer to specifications for a complete description of the following Alternates. An "ADD" or "DEDUCT" amount is indicated by the crossed out part that does not apply.

Alternate No. 1: Increase the Size of the Gymnasium

Add/Deduct _____($_____)

Alternate No. 8: Add Outdoor Classroom in the Courtyard

Add/Deduct _____($_____)

I/We acknowledge Addendums numbered _____ and the price(s) submitted include any cost/schedule impact they may have.

This bid shall remain valid and cannot be withdrawn for sixty (60) days from the date of opening of bids, and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid.

The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.

This bid is based upon work being accomplished by the Sub-Contractors named on the list attached to this bid.

The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds, and Insurance Certificates, required by the Contract Documents.

I am / We are an Individual / a Partnership / a Corporation

By _____ Trading as _____
(Individual's / General Partner's / Corporate Name)

_____
(State of Corporation)

Business Address:_____
_____
_____
_____

Witness: _____ By: _____
(Authorized Signature)

(SEAL) _____
(Title)

Date: _____

ATTACHMENTS
Sub-Contractor List
Non-Collusion Statement

Bid Bond
Consent of Surety
Affidavit of Employee Drug Testing Program
Delaware Business License
Town of Middletown Contractor's License
(Others as Required by Project Manuals)

SUBCONTRACTOR LIST

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor must be listed for each category where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the Owner, **it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.**

Subcontractor Category	Subcontractor	Address (City & State)	**Subcontractors tax payer ID # or Delaware Business license #**
1. Structured Cable			
2. Caulking			

NON-COLLUSION STATEMENT

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date **January 14, 2020.**

All the terms and conditions of **Contract: A-23: Structured Cable** have been thoroughly examined and are understood.

NAME OF BIDDER: _____

AUTHORIZED REPRESENTATIVE (TYPED): _____

AUTHORIZED REPRESENTATIVE (SIGNATURE): _____

TITLE: _____

ADDRESS OF BIDDER: _____

_____

_____

PHONE NUMBER: _____

Sworn to and Subscribed before me this _____ day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

BID BOND

TO ACCOMPANY PROPOSAL
(Not necessary if security is used)

KNOW ALL MEN BY THESE PRESENTS That: _____of _____in the County of _____ and State of _____ as Principal, and _____of _____in the County of _____ _____ and State of _____ as Surety, legally authorized to do business in the State of Delaware ('State"), are held and firmly unto the **Appoquinimink School District** in the sum of _____ Dollars (S_____), or percent not to exceed _____ _____ Dollars (S_____) of amount of bid on Contract No. _____ to be paid to the **Appoquinimink School District** for the use and benefit of the **Appoquinimink School District** for which payment well and truly to be made, we do bind ourselves, our and each of our heirs, executors, administrators, and successors, jointly and severally for and in the whole firmly by these presents.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH That if the above bounden Principal who has submitted to the **Appoquinimink School District** a certain proposal to enter into this contract for the furnishing of certain material and/or services within the State, shall be awarded this Contract, and if said Principal shall well and truly enter into and execute this Contract as may be required by the terms of this Contract and approved by the **Appoquinimink School District** this Contract to be entered into within twenty days after the date of official notice of the award thereof in accordance with the terms of said proposal, then this obligation shall be void or else to be and remain in full force and virtue.

Sealed with _____seal and dated this____day of _____in the year of our Lord two thousand and _____(20__).

SEALED, AND DELIVERED IN THE PRESENCE OF

_____
Name of Bidder (Organization)

Corporate Seal

By:_____
Authorized Signature

Attest _____

_____
Title

_____
Name of Surety

Witness_____

_____

_____
Title

CONSENT OF SURETY

DATE_____

To: **Appoquinimink School District**
118 South Sixth Street
Odessa, DE 19730

Gentlemen:

We, the _____

_____
(Surety Company's Address)

_____

a Surety Company authorized to do business in the State of Delaware hereby agrees that if

_____
(Contractor)

_____
(Address)

_____

is awarded the Contract No. _____

We will write the required Performance and/or Labor and Material Bond required by Paragraph 9 of the Instructions to Bidders.

_____
(Surety Company)

By _____
(Attorney-in-Fact)

AFFIDAVIT
OF
EMPLOYEE DRUG TESTING PROGRAM

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds.

We hereby certify that we have in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for our employees on the jobsite, including subcontractors that complies with this regulation:

Contractor/Subcontractor Name: _____

Contractor/Subcontractor Address: _____

_____

_____

Authorized Representative (typed or printed): _____

Authorized Representative (signature): _____

Title: _____

Sworn to and Subscribed before me this _____day of_____ 20_____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

Contract: A-24: Testing & Balancing

BID FORM

For Bids Due: January ~~14~~ **21**, 2020 To: ***Appoquinimink School District***
118 South Sixth Street
Odessa, DE 19730

Name of Bidder: _____

Bidder Address: _____

_____

Contact Name: _____ E-Mail Address: _____

Delaware Business License No.: _____ Taxpayer ID No.: _____

(Other License Nos.): _____
(A copy of Bidder's Delaware Business License must be attached to this form.)

Phone No.: ( ) _____ - _____ Fax No.: ( ) _____ - _____

The undersigned, representing that he has read and understands the Bidding Documents and that this bid is made in accordance therewith, that he has visited the site and has familiarized himself with the local conditions under which the Work is to be performed, and that his bid is based upon the materials, systems and equipment described in the Bidding Documents without exception, hereby proposes and agrees to provide all labor, materials, plant, equipment, supplies, transport and other facilities required to execute the work described by the aforesaid documents for the lump sum itemized below:

$_____ ($_____)

ALTERNATES
Alternate prices conform to applicable project specification section. Refer to specifications for a complete description of the following Alternates. An "ADD" or "DEDUCT" amount is indicated by the crossed out part that does not apply.

Alternate No. 1: Increase the Size of the Gymnasium

Add/Deduct _____($_____)

I/We acknowledge Addendums numbered _____ and the price(s) submitted include any cost/schedule impact they may have.

This bid shall remain valid and cannot be withdrawn for sixty (60) days from the date of opening of bids, and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid.

The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.

This bid is based upon work being accomplished by the Sub-Contractors named on the list attached to this bid.

The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds, and Insurance Certificates, required by the Contract Documents.

I am / We are an Individual / a Partnership / a Corporation

By _____ Trading as _____
(Individual's / General Partner's / Corporate Name)

_____
(State of Corporation)

Business Address:_____
_____
_____
_____

Witness: _____ By: _____
(Authorized Signature)

(SEAL) _____
(Title)

Date: _____

ATTACHMENTS

Sub-Contractor List
Non-Collusion Statement
Bid Bond
Consent of Surety
Affidavit of Employee Drug Testing Program
Delaware Business License
Town of Middletown Contractor's License
(Others as Required by Project Manuals)

SUBCONTRACTOR LIST

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor must be listed for each category where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the Owner, **it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.**

Subcontractor Category	Subcontractor	Address (City & State)	**Subcontractors tax payer ID # or Delaware Business license #**
1. Testing & Balancing			

NON-COLLUSION STATEMENT

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date **January 14, 2020.**

All the terms and conditions of **Contract: A-24: Testing & Balancing** have been thoroughly examined and are understood.

NAME OF BIDDER: _____

AUTHORIZED REPRESENTATIVE (TYPED): _____

AUTHORIZED REPRESENTATIVE (SIGNATURE): _____

TITLE: _____

ADDRESS OF BIDDER: _____

_____

_____

PHONE NUMBER: _____

Sworn to and Subscribed before me this _____ day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

BID BOND

TO ACCOMPANY PROPOSAL
(Not necessary if security is used)

KNOW ALL MEN BY THESE PRESENTS That: _____of _____in the County of _____ and State of _____ as Principal, and _____of _____in the County of _____ _____ and State of _____ as Surety, legally authorized to do business in the State of Delaware ('State"), are held and firmly unto the **Appoquinimink School District** in the sum of _____ Dollars (S_____), or percent not to exceed _____ _____ Dollars (S_____) of amount of bid on Contract No. _____ to be paid to the **Appoquinimink School District** for the use and benefit of the **Appoquinimink School District** for which payment well and truly to be made, we do bind ourselves, our and each of our heirs, executors, administrators, and successors, jointly and severally for and in the whole firmly by these presents.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH That if the above bounden Principal who has submitted to the **Appoquinimink School District** a certain proposal to enter into this contract for the furnishing of certain material and/or services within the State, shall be awarded this Contract, and if said Principal shall well and truly enter into and execute this Contract as may be required by the terms of this Contract and approved by the **Appoquinimink School District** this Contract to be entered into within twenty days after the date of official notice of the award thereof in accordance with the terms of said proposal, then this obligation shall be void or else to be and remain in full force and virtue.

Sealed with _____seal and dated this____day of _____in the year of our Lord two thousand and _____(20__).

SEALED, AND DELIVERED IN THE PRESENCE OF

_____
Name of Bidder (Organization)

Corporate Seal

By:_____
Authorized Signature

Attest _____

_____
Title

_____
Name of Surety

Witness_____

_____

_____
Title

CONSENT OF SURETY

DATE_____

To: **Appoquinimink School District**
118 South Sixth Street
Odessa, DE 19730

Gentlemen:

We, the _____

_____
(Surety Company's Address)

_____

a Surety Company authorized to do business in the State of Delaware hereby agrees that if

_____
(Contractor)

_____
(Address)

_____

is awarded the Contract No. _____

We will write the required Performance and/or Labor and Material Bond required by Paragraph 9 of the Instructions to Bidders.

_____
(Surety Company)

By _____
(Attorney-in-Fact)

AFFIDAVIT
OF
EMPLOYEE DRUG TESTING PROGRAM

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds.

We hereby certify that we have in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for our employees on the jobsite, including subcontractors that complies with this regulation:

Contractor/Subcontractor Name: _____

Contractor/Subcontractor Address: _____

_____

_____

Authorized Representative (typed or printed): _____

Authorized Representative (signature): _____

Title: _____

Sworn to and Subscribed before me this _____day of_____ 20_____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

Contract: A-25: Telephone System

BID FORM

For Bids Due: January ~~14~~ **21**, 2020 To: ***Appoquinimink School District***
118 South Sixth Street
Odessa, DE 19730

Name of Bidder: _____

Bidder Address: _____

_____

Contact Name: _____ E-Mail Address: _____

Delaware Business License No.:_____ Taxpayer ID No.: _____

(Other License Nos.): _____
(A copy of Bidder's Delaware Business License must be attached to this form.)

Phone No.: ( ) _____ - _____ Fax No.: ( ) _____ - _____

The undersigned, representing that he has read and understands the Bidding Documents and that this bid is made in accordance therewith, that he has visited the site and has familiarized himself with the local conditions under which the Work is to be performed, and that his bid is based upon the materials, systems and equipment described in the Bidding Documents without exception, hereby proposes and agrees to provide all labor, materials, plant, equipment, supplies, transport and other facilities required to execute the work described by the aforesaid documents for the lump sum itemized below:

$_____ ($_____)

I/We acknowledge Addendums numbered _____ and the price(s) submitted include any cost/schedule impact they may have.

This bid shall remain valid and cannot be withdrawn for sixty (60) days from the date of opening of bids, and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid.

The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.

This bid is based upon work being accomplished by the Sub-Contractors named on the list attached to this bid.

The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the

contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds, and Insurance Certificates, required by the Contract Documents.

I am / We are an Individual / a Partnership / a Corporation

By _____ Trading as _____
(Individual's / General Partner's / Corporate Name)

_____
(State of Corporation)

Business Address:_____
_____
_____
_____

Witness: _____ By: _____
(Authorized Signature)

(SEAL) _____
(Title)

Date: _____

ATTACHMENTS

Sub-Contractor List
Non-Collusion Statement
Bid Bond
Consent of Surety
Affidavit of Employee Drug Testing Program
Delaware Business License
Town of Middletown Contractor's License
(Others as Required by Project Manuals)

SUBCONTRACTOR LIST

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor must be listed for each category where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the Owner, **it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.**

Subcontractor Category	Subcontractor	Address (City & State)	**Subcontractors tax payer ID # or Delaware Business license #**
1. Telephone Systems			

NON-COLLUSION STATEMENT

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date **January 14, 2020.**

All the terms and conditions of **Contract: A-25: Telephone System** have been thoroughly examined and are understood.

NAME OF BIDDER: _____

AUTHORIZED REPRESENTATIVE (TYPED): _____

AUTHORIZED REPRESENTATIVE (SIGNATURE): _____

TITLE: _____

ADDRESS OF BIDDER: _____

_____

_____

PHONE NUMBER: _____

Sworn to and Subscribed before me this _____ day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

BID BOND

TO ACCOMPANY PROPOSAL
(Not necessary if security is used)

KNOW ALL MEN BY THESE PRESENTS That: _____of _____in the County of _____ and State of _____ as Principal, and _____of _____in the County of _____ _____ and State of _____ as Surety, legally authorized to do business in the State of Delaware ('State"), are held and firmly unto the **Appoquinimink School District** in the sum of _____ Dollars (S_____), or percent not to exceed _____ _____ Dollars (S_____) of amount of bid on Contract No. _____ to be paid to the **Appoquinimink School District** for the use and benefit of the **Appoquinimink School District** for which payment well and truly to be made, we do bind ourselves, our and each of our heirs, executors, administrators, and successors, jointly and severally for and in the whole firmly by these presents.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH That if the above bounden Principal who has submitted to the **Appoquinimink School District** a certain proposal to enter into this contract for the furnishing of certain material and/or services within the State, shall be awarded this Contract, and if said Principal shall well and truly enter into and execute this Contract as may be required by the terms of this Contract and approved by the **Appoquinimink School District** this Contract to be entered into within twenty days after the date of official notice of the award thereof in accordance with the terms of said proposal, then this obligation shall be void or else to be and remain in full force and virtue.

Sealed with _____seal and dated this____day of _____in the year of our Lord two thousand and _____(20__).

SEALED, AND DELIVERED IN THE PRESENCE OF

_____
Name of Bidder (Organization)

Corporate Seal

By:_____
Authorized Signature

Attest _____

_____
Title

_____
Name of Surety

Witness_____

_____

_____
Title

CONSENT OF SURETY

DATE_____

To: **Appoquinimink School District**
118 South Sixth Street
Odessa, DE 19730

Gentlemen:

We, the _____

_____
(Surety Company's Address)

_____

a Surety Company authorized to do business in the State of Delaware hereby agrees that if

_____
(Contractor)

_____
(Address)

_____

is awarded the Contract No. _____

We will write the required Performance and/or Labor and Material Bond required by Paragraph 9 of the Instructions to Bidders.

_____
(Surety Company)

By _____
(Attorney-in-Fact)

AFFIDAVIT
OF
EMPLOYEE DRUG TESTING PROGRAM

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds.

We hereby certify that we have in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for our employees on the jobsite, including subcontractors that complies with this regulation:

Contractor/Subcontractor Name: _____

Contractor/Subcontractor Address: _____

_____

_____

Authorized Representative (typed or printed): _____

Authorized Representative (signature): _____

Title: _____

Sworn to and Subscribed before me this _____day of_____ 20_____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

END OF SECTION

BIM EXECUTION PLAN

Silver Lake Elementary School
200 E. Cochran Street
Middletown, DE 19709

Appoquinimink School District

EDiS Company and EDiS BIM Services

BIM PROCESS IS MANDATORY

SECTION 013700 - BIM COORDINATION

1. CONTRACTOR 3D MODEL RESPONSIBILITY
The purpose of a three-dimensional model is to aid in project review development. Contractor and it's sub-contractors, as part of the Silver Lake Elementary School Additions and Renovations project, shall hold all responsibility to adhere to AIA G202-2013 Project Building Information Modeling Protocol Form Matrix (see Exhibit 1 and referenced attachments) while creating their BIM model respectively. This BIM model shall reflect the two-dimensional contract drawings provided in bidding package, RFI, and ASI. The Contractor's referenced and shared three-dimensional model is only utilized as a visual aid to begin per matrix LOD required by Contractor.

1A. Architect and their consultants will Furnish Contractor one set of Revit 2019 Building Information Modeling files (BIM) of Drawing for use in preparing coordination digital data files.
   a. Architect makes no representations as to the accuracy or completeness of digital data files as they relate to drawings.
   b. Digital data software program: Drawings are available in Revit 2019 digital data software working on the Windows operating system. Sheet views will be deleted to protect the architect and consultants. Full model will be available for coordination.
   c. Contractor shall execute a data licensing agreement in the form of the agreement included in the project manual.
   d. The Contractor and its prime contractors are responsible to execute all licensing for requested software to coordinate the project.

1B. BIM File Incorporation: Develop and incorporate coordination drawing information into Building Information Model established for Project.
   a. Each of the Prime Contractors shall model their respective systems in the BIM model that are part of their contract and provide updated files to the HVAC contractor.
   b. The HVAC contractor (Prime Coordinator) shall perform three-dimensional component conflict analysis as part of the preparation of coordination drawings. Resolve component conflicts with each Prime prior to submittal. Indicate where conflict resolution requires modification of design requirements by Architect and obtain approval of Architect.
   c. HVAC contractor shall revise the BIM model as necessary to reflect the coordination changes. HVAC contractor shall pay for the cost of revisions to the BIM model. HVAC contractor shall include all cost due to the revisions of project changes such as but not limited to RFI, ASI's and owner changes. All modifications, enhancements, additions, and changes to structural, mechanical, electrical, plumbing, fire protection, or HVAC components shall be made by the respective Prime Contractors responsible for that system as part of their contract.

2. DEFINITIONS
   2.1. **Base Structural Model** – the structural steel mill order drawing file showing all structural elements. This model is not necessarily fully detailed with all connections.
   2.2. **Base Architectural Model** – a combination of the Base Structural Model and key architectural elements. This model is to be used by all coordination participants as the background file in which to develop their work. No information within this model will be changed through the coordination process. It is for reference only.
   2.3. **Base Composite Model** – this model includes all trade drawing files within the Base Architectural Model as a representation of the completed systems. This model is used to run the intermediate clash reports and is considered a work in progress.
   2.4. **Final Coordination Model** – this model shows all trades' systems fully coordinated within the Base Architectural Model. All clashes have been resolved. No further coordination is required. The work shown within this model represents the upcoming installations of each system.
   2.5. **Completed Coordination Model** – this model is the close-out submittal to the Owner and includes the information within the Final Coordination Model as well as any project updates that have taken place during installations such as RFI responses, as-built conditions, etc.
   2.6. **Building Information Model -** A Building Information Model(s) is a digital representation of the physical and functional characteristics of the Project and is referred to in this document as the "Model(s)," which term may be used herein to describe a Model Element, a single Model or multiple Models used in the aggregate. "Building Information Modeling" means the process and technology used to create the Model.
   2.7. **Level of Development** - The Level(s) of Development (LOD) describes the level of completeness to which a Model Element is developed.
   2.8. **Model Element** - A Model Element is a portion of the Building Information Model representing a component, system or assembly within a building or building site. Model Elements are represented by the Construction Specifications Institute (CSI) UniFormat™ classification system in the Model Element Table in Exhibit 1 - Article 3.
   2.9. **Model Element Author** - The Model Element Author is the party responsible for developing the content of a specific Model Element to the LOD required for a particular phase of the Project. Model Element Authors are identified in the Model Element Table in Exhibit 1 - Article 3.
   2.10. **Model User** - The Model User refers to any individual or entity authorized to use the Model on the Project for analysis, estimating, or scheduling.
   2.11. **TCD** – Trade contract drawings developed by MEP contractor.

3. COORDINATION DRAWING PROCESS – GENERAL REQUIREMENTS.
   3.1. The coordination model shall be derived from the design base composite model which shall be in a (Program File Format – Ex: Revit 2017) format and utilized by all coordination participants. The A/E is to provide this base composite model as needed at each plan deliverable for coordination efforts. This model will be utilized to establish field installation sequence, resolve trade coordination issues prior to installation, and to make the most efficient use of installation space without sacrificing system performance for mechanical, electrical, structural and architectural systems. (Program File Format –

Ex: NAVISWORKS or IFC) design review software will be used to document, identify and resolve interferences between all trades.

3.2. Communication is a critical element to the success of this coordination process. All project team members must be in constant communication to keep the process moving

Meeting Type	Project Stage	Frequency	Participants	Location
BIM Requirement Kick-off	Construction	Once	EDiS Team & Contracts #	Site Trailer
BIM Coordination	Construction	Weekly	EDiS Team & Contracts #	Site Trailer
BIM Clash Detection	Construction	Weekly	EDiS Team Issue to Contracts	Site Trailer
Field Installation Process	Construction	Weekly	EDiS Team & Contracts #	Site Trailer

forward according to the sign-off schedule (5.1). Constant collaboration is expected of all team participants and each participant should be proactive in identifying and resolving design, engineering, and model interferences. Contractors avoiding the coordination process shall receive liquidated damages for missing meetings and negatively impacting project completion.

3.3. All trade contractors own their respective modeling for their contract work. EDiS Company will facilitate and lead the 3D coordination modeling process. It is the responsibility of all coordination participants to resolve discrepancies pertaining to their own model. All trades shall be responsible for collisions/clashes/coordination issues involving their respective trade(s) and proposed work. Coordinated work takes precedence over field routed systems. Each Contractor to provide LOD 350 total coordination models for sign off.

3.4. Coordination meetings will occur weekly starting TBD. Selected coordination team members are required to generate a clash-free model inclusive of all systems. The following participants are required to attend the weekly coordination meetings:

3.5. A mandatory coordination kick-off meeting for all participants will review; team collaboration, the execution process, the coordination schedule, establishing zones per system, use of the coordinated elements during construction, project specific information and requirements, and model/document standards.

3.6. Coordination meetings will be held at Virtual Goto Meeting to review the model's progress per the schedule and process indicated.

3.7. Utility corridors and above ceiling space for each trade, will be established by the group at the beginning of the process. These zones will be adjusted through the coordination process to meet installation requirements and feasibility.

3.8. All participants are required to identify the submittals required for accurate detailing of the coordination model (such as equipment, light fixtures, etc.) and to obtain final approval so the information can be incorporated into the modeling process.

3.9. The 3D coordination modeling process does not replace the standard submittal process and will not be considered as a submittal. Exceptions: The submittals issued to reflect the 3D model content issued to A/E.

3.10. Meeting Procedures:

Coordination Meetings				
TCD Drawings	Construction	Weekly	Contracts Mechanical	Site Trailer
Sign off on TCD Drawings	Construction	At completion	All Parties w/Contract	Site Trailer

NOTES: all contracted parties involved with coordination are required to sign off on all coordinated models via sign off TCD drawings. All clash reports issued to subcontractors require completion by next BIM meeting.

3.11. The coordination meeting:

3.11.1. The purpose is to review and resolve items on the current clash report in conjunction with the project coordination schedule. The meetings will focus on clashes that cannot be resolved by internal collaboration. EDiS Company will facilitate the meeting and will make final decisions on clash resolution that are the least impact to the project as a whole. COORDINATION MEETINGS WILL NOT BE USED TO RESOLVE INDIVIDUAL MODELER'S/ENGINEER'S/ARCHITECTURE'S/CONTRACTOR'S WORK. If a Contractor does not post a clash-free system of its own work or that only contains a very limited number of clashes internally (Example: Fire Sprinkler Clashing with Fire Sprinkler), that Contractor will be considered unprepared for the meeting and will be responsible for any delays to the project schedule and any associated costs due to that delay which shall be determined by EDiS Company.

3.11.2. Each team participant will review the clash report prior to the subsequent coordination meeting in order to clean up any clashes that can be made without review by all participants.

3.11.3. All project participants are expected to be prepared for the meeting with new drawing work of the next area to be coordinated per the coordination schedule and any drawing changes based on the published clash report. Each participant will have available any shop model, submittals or other materials required to solve identified or potential conflicts.

3.11.4. The coordination schedule will be maintained and all identified conflicts addressed and resolved per the construction schedule. The coordination schedule may change as a result of design and/or model changes requested and made by the Owner, Architect or Engineer. In addition, the coordination schedule assumes selection of equipment is made within the time frame of the construction schedule as needed so it is incorporated into the coordination efforts without delay.

3.11.5. All agreed upon corrections to identified clashes determined by the team at the Coordination Meeting are to be updated and resolved prior to the next meeting.

3.12. When an area of the model is fully coordinated and clash-free, each participant agrees:

3.12.1. That each trades work is fully coordinated and will be installed per the signed off area as reflected in the coordination model. Sign off drawings from each

trade are turned over in PDF form with projects title block. EDiS Company will include legend and title block for trade PDF file.

3.12.2. All trades to provide Total Coordination drawings at the time of sign off. TCD's are drawings which include all trades sign off models. Models are submitted for turn over to EDiS Company. The purpose for TCD's is to provide coordinated building models for jobsite coordination. Models from Contractors to include all but not limited to: item elevations, product type and all equipment tags.

3.12.3. During the installation of each trade's work, EDiS Company will refer to the signed off report and the 3D model to resolve any conflicts. Each installation firm agrees to install all work per the signed off drawings/model, without deviation. If a deviation, during installation, takes place without prior approval from all detailing parties, it will be the responsibility of the installing contractor to tear out the work and install it as shown on the signed off drawings/coordination model. The cost of this work will be evaluated when the issues arise; however, the party responsible for the conflict will be responsible for the cost of the fix, including the additional detailing time of all parties involved.

3.12.4. The model is not considered to be the final coordination model until the BIM Coordinator, EDiS Company's Project Manager, A/E, and Owner has approved all clash free systems and routings and documents are signed off by all parties (contractors).

3.13. Should a conflict arise during installation that was missed during the coordination process, and not a result of deviating from the signed off area, the coordination team will work together to find a solution that is optimal for all trades and the project.

3.14. The final coordination model shall be kept up to date by all participants during construction to include as-built information and any other pertinent data that is essential to the project. The data will be submitted electronically in Revit, AutoCAD, NWC, PDF format. Items to be included are:

3.14.1. RFI responses.

3.14.2. Design change orders or designs that are in addition to the original contract documents.

3.14.3. Equipment will be tagged with all (Owner required) identification information within the model (ex. Equipment schedule information and O&M Manuals). This identification information will be the same and correspond to all other close-out documentation. This close-out documentation including O&M manuals, maintenance information, etc. will be included in PDF form.

3.14.4. EDiS will provide a location for the Contractor to submit the required documentation at a later time. EDiS will generate the completed coordination model based on these documents for turn-over to the owner.

3.14.5. Tekla or Navisworks will be utilized to link PDF closeout documents, select RFI's, select Images, etc., to the closeout model. Contractors need to provide closeout documents in the format requested by EDiS for the closeout model as well as adding smart data to other model type files as determined necessary by EDiS within the time frame A/E dictates. For example, if Revit files are needed

to produce the closeout model, EDiS may direct Contractor to set up certain Revit views for the exporting of files which make up the as-built models. A/E may also request that the Contractor create viewpoints for their equipment in as-built model.

3.15. Data for coordination will be available on the Box.com, to be referenced by the other participants. Models and drawing files will never be tampered with by non-owners of the file. If a mistake occurs and a drawing is inadvertently modified, the responsible party is required to alert the project team. (See attachment)

3.16. The Owner's commissioning agent can attend the coordination meeting to review the detailing effort for commissioning related items.

3.17. All trades will provide Level of Development (LOD) (350) models for weekly coordination meeting.

4. REQUIREMENTS OF THE LEAD COORDINATOR

4.1. The Lead Coordinator will be EDiS Company.

4.2. Identification of a common insertion point for all drawing files. (Utilize Revit Models origin)

4.3. A/E to provide Lead Coordinator model exports to 2D/3D CAD of each trade component as needed to coordination. Origins to be maintained in exports.

4.4. Using the A/E's files, the Lead Coordinator will utilize & maintain the base architectural model.

4.4.1. The base architectural model is a combination of the base structural model and other architectural elements. These architectural elements will include all elevated 3D architectural elements including, but not limited to, all walls that extend to the deck, fire and smoke walls, soffits and associated framing, ceiling planes, and finish floor planes.

4.4.2. This model will consist of cleaned-up floor plans void of any excessive notations, leaders, bubbles, marks, grid lines, etc. that are not required for detailing development and that may potentially cause a conflict in the base composite model.

4.4.3. In the event of changes to the A/E's contract documents, the A/E must revise the base architectural model/MEP/structural models and distributed to all coordination participants. This will require Contractor participation as need by A/E to complete the revised models for directive. Revision work will be directed by Owner through an executed change order.

4.4.4. The base architectural models will be distributed and maintained by EDiS Company.

4.5. Collation of all trades' detailing models as posted to the project's web-based posting site into a Base Composite Model thru the use of Navisworks 2017.

4.5.1. Establish a standard two inch (2") soft tolerance within the clash detection software. This tolerance will result in a reported clash for any elements drawn closer than two inches (2") to one another.

4.5.2. Assess and include most current clash files including the generation of a clash reports and distribution to all project participants per the coordination schedule.

4.5.3. Collect final as-built files from all trades and generate a Final Coordination Model to submit to CM as part of the close-out requirements.

4.5.4. Coordination meeting minutes shall be kept by EDiS Company Lead Coordinator or EDiS' Project Manager showing issues and resolution dates.

5. REQUIREMENTS OF THE STRUCTURAL STEEL CONTRACTOR

5.1. Obtain from the A/E Structural Revit files to be used in the generation of the base structural model.

5.2. The structural Contractor will develop and provide the base structural model within the time frame dictated by EDiS and provide structural model updates to ensure the coordination team is coordinating the MEP/FP to the most up-to-date structural model.

5.3. All structural framing members in the final sizes and locations (typically referred to as a "mill order" or "procurement" model) will be shown in the model as 3D objects with surfaces. At the discretion of the lead coordinator, this model may be void of all hardware and secondary structural steel but should include the major components: primary steel, metal decking, slab on metal decking, and gusset plates.

5.4. The structural insertion/datum point must match the architectural insertion/datum location. No detailing work shall take place until the insertion points of the architectural and structural models match.

5.5. The steel Contractor is responsible for resolving their own modeling issues (i.e.: steel not to scale, missing key structural components, missing surface data, and model showing as wire frame data, model exported to proper file format, etc.). The steel Contractor is responsible to provide a steel design model in a usable format for all coordination participants to reference as the base structural model.

5.6. A FINAL 3D steel model and 2D shop drawings shall be submitted to the structural engineer of record, and used for field erection. It must be completed and submitted in accordance to the BIM schedule. This model shall consist of:

5.6.1. All primary and secondary steel including metal deck, slab on metal deck, actual gusset plate sizes, connection details, edge of slab details (pour stop), brick relief angles, embeds, anchor bolts, and other miscellaneous metals. Curtain Wall embeds modeled by others.

5.6.2. Submit final approved files to Lead Coordinator for insertion into the coordinated model, and to the design team in the form of shop drawings and/or Navisworks compatible model.

6. DETAILING REQUIREMENTS OF ALL PARTICIPANTS

6.1. File sharing information:

6.1.1. Site Contractor (SIT-1)

- Attend BIM trade coordination meetings
- Deliver three dimensional model to coordination team
- Required to deliver items identified in G201 matrix such as
- Develop appropriate tie-in locations of utilities with trades. Site contractor required to deliver main connections in model format

- Site underground items outside direct tie in locations not required in three dimensional models.
- Sanitary piping tie-in
- Storm water tie-in
- Domestic water tie-in

6.1.2. The in-progress (Coordination Software – Ex: IFC/NWC/Cad) naming convention will be: project-trade-level. Example:
Project Designation -MechPipe-1
Project Designation -HVAC-1
Project Designation –Fire Protection-1
Project Designation -Elec-1
Project Designation -Plumbing-1
Project Designation -TeleCom-1 or AV-1
Project Designation –Pneumatic Tube-1, etc.
Additional designations may be added based on project specific scope and deliverable requirements and/or deemed as a critical component to the coordination process.

6.1.3. Each model posted by the contractor shall contain sub-layers for the purpose of system identification and isolation during the clash detection process. Example:
HVAC-1 shall contain sub-layers for:

- Supply
- Return
- Exhaust
- Fire Smoke-Dampers
- VAV clearance
- AC Door Access
- Fan Coil Units
- FCU Access
- Equipment
- Equipment Pads
- Equipment Clearances
- Hangers (designated per system)

MechPipe-1 shall contain sub-layers for:

- Hydronic Pipe Supply
- Hydronic Pipe Return
- Chilled Pipe Supply
- Chilled Pipe Return
- Shutoff Access
- Equipment
- Equipment Pads
- Equipment Clearances
- Hangers

Plumbing-1 shall contain sub-layers for:

- Domestic Water Supply

- Domestic Water Return (with additional layer designations for hot and cold)
- Gas
- Med-Gas
- Shutoff Access (designated per system)
- Sanitary
- Vent
- Roof Drain
- Rain Conductors
- Equipment
- Equipment Pads
- Equipment Clearances
- Hangers (designated per system)

Elec-1 shall contain sub-layers for:

- Lights
- Light Clearance
- Conduit (with additional layer designation for power and data)
- Cable Tray
- Cable Tray Access Clearance
- Pull Boxes
- Pull Box Access Clearance
- J-Boxes
- Elec. Panels
- Elec. Panel Access Clearance
- Elec. Troughs
- Elec. Trough Access Clearance
- Equipment
- Equipment Clearances
- Equipment Pads
- Hangers

Fire Protection1 shall contain sub-layers for:

- Mains
- Branches
- Shutoff Access
- Hangers

Pneumatic Tube-1 shall contain sub-layers for:

- Equipment
- Equipment Access
- Hangers

Additional sub layers may be added based on project specific scope and deliverable requirements and/or deemed as a critical component to the coordination process.

6.1.4. Clash detection files will be posted to **BuildingBlok.com** before **12:00 PM**, on **Wednesday and Friday** by each of the trades. The lead coordinator will also post updated coordination models as needed. The lead coordinator will maintain the

master coordination files. The weekly coordination model will be name abbreviated Project Name-Floor-Coordination Model-Month-Day-Year.

All coordination participants will maintain a current control copy of their own drawing files outside of the project's web-based posting site. Control drawings are to include all previously posted files.

6.2. Trade Colors in the Coordination environment:
- Duct Supply – Dark Green
- Duct Return- Light Blue
- Duct Exhaust –Light Green
- Mech Pipe- Orange
- Pressure lines/Gas – Tan
- Sanitary/Vent – Brown
- Rain Conductors/Roof Drains – Maroon
- Domestic Water- Blue
- Fire – Red
- Pneumatic – Purple
- Electrical – Yellow
- All Base Architectural Elements (walls, soffits, ceiling & floor planes, etc.) will assume Arch model color scheme saved in the export or Lead Coordinator will modify select color scheme in the coordination model.
- Steel – Dark Grey
- Any hangers and equipment (that is fed per the designated system) will assume the same color of that system it is associated with. Additional color schemes may be added based on project specific scope and deliverable requirements and/or deemed as a critical component to the coordination process.

6.3. When posting drawing files for coordination:

6.3.1. Posted Contractor coordination files of each trades system should be clash-free with in their respective data. To clarify; trades should refrain from posting data that shows their systems clashing with itself.

6.3.2. When coordination of an area is completed there should not be any unresolved clashes remaining.

6.3.3. These files should be void of any text, dimensions or any other notations.

6.4. Each coordination participant is required to submit three (3) complete sets of installation drawings as well as electronic PDF's prior to any work being installed in the field. If A/E spec requires more or less than that will govern over this document. These complete drawings are to be fully dimensioned and notated. Items to be noted in the final, fully coordinated drawing paper and electronic files of each system include:

6.4.1. Bottom and top elevations of duct, pipe, conduit racks, cable trays etc. must be indicated (where applicable).

6.4.2. Dimensions shall be shown from the gridlines to the centerline of each element drawn (round duct, pipe, cable tray, etc.) and from finished floor.

6.4.3. Height to top of light housing assembly must be indicated.

6.4.4. Labeling of all equipment.

6.5. During the coordination drawing effort, priority will be given to those systems that have the least flexibility. The following list is a descending order of the system priority and

shall be used as a general guideline. Throughout the coordination drawing effort, adjustments and deviations to this list can be made with the approval of EDiS Company. (0'- 6") clear above the ceiling shall be maintained for access and construction of the ceiling, whenever possible. Required maintenance and/or code access spaces and set-backs take precedence over all systems.

6.5.1. Gravity Pipe
6.5.2. Plumbing Vent
6.5.3. Ductwork and appurtenances
6.5.4. Cable tray
6.5.5. Recessed light fixtures
6.5.6. Fire protection piping and fixtures
6.5.7. Electrical conduit over (3/4") in diameter
6.5.8. Pneumatic tube and other record or material conveying systems
6.5.9. HVAC piping
6.5.10. Plumbing, supply and medical gas piping
6.5.11. Electrical conduit smaller than 3/4" in diameter
6.5.12. Above ceiling miscellaneous metal supports
6.5.13. Provide all copper tube routes (racks) for mechanical systems, including valves, clearance zones and hangers.

6.6. Items to be included in the detailed drawing progress include:

6.6.1. All systems must be fully detailed and shown as individual elements including ductwork, all piping 3/4" and larger, pneumatic tubing, exterior wall connections, any piping that is smaller than ½" that is racked or banked, etc.
6.6.2. Ductwork is to include size, layout and routing of all metal and flex ductwork, re-heat coils, terminal units, filters registers, grilles, diffusers, and similar features; provide notation for diffuser boot sizes and heights and any other special features
6.6.3. All valves, dampers and VAV's or heat pumps will note any items requiring access for service and maintenance as well as access doors in inaccessible ceilings.
6.6.4. All piping valves, boxes, supports, etc. are to be fully detailed
6.6.5. Sprinkler head locations shall be shown on ceiling plans.
6.6.6. All electrical conduits two inches (2") or more in diameter are to be modeled and shown in addition to smaller diameter conduit that is racked or banked.
6.6.7. Electrical items such as hangers, supports, electrical fixtures, lights, speakers, detectors, sensors, cable trays, raceways, sleeves, pull boxes, and access space claims, etc. must be shown.
6.6.8. If an element is not shown, under the lead coordinators approval, it will be assumed to be field routed and to not interfere with the other elements that are shown or within code clearances. Contractors who field route their elements are responsible to ensure their installation will be feasible and void of creating a clash in the field. Coordinated items take precedence over field routing.
6.6.9. All major hangers and supports (including sway bracing, equipment bracing, hangers, etc.), penetrations, openings must be shown for all systems. Sharing of supports with other systems is discouraged, but can be accomplished with prior owner and/or field inspector approval.

6.6.10. All insulation must be shown with appropriate thicknesses. All insulation & clearance zones will be modeled or accounted for during the clash detection process.

6.6.11. Fire spray: If required by your building type, establish a safe thickness from all structural objects with which to run your clashes. Assume fire spray will be two inches (2") thick.

6.6.12. Engineered stud framing must be modeled for king studs and doors.

6.6.13. Code clearances and maintenance access clearances must be shown and maintained; these include, but are not limited to access to VAVs, air handling units, egresses around pumps and tanks, smoke FDs, electrical panels, pneumatic tube transfer units, cable tray access, pull boxes, valve access, etc.

6.6.14. All trades must coordinate and detail their systems with the intent of installing each system at the optimal elevation above ceiling, taking into consideration, access to equipment for maintenance, repairs, connections, filters and removal while eliminating or minimizing the impact to surrounding components.

6.7. Established Clash Files are to be incorporated to ensure proper coordination. List of those files to be provided by the Lead Coordinator.

6.8. Refer to Appendix B – Soft Clash Requirements for additional soft-clash requirements.

7. SCHEDULE OF DRAWING COMPLETION AND SIGN-OFF

7.1. The participants should plan on the coordination process taking three (3) months. The coordination schedule is as follows:
This table will be populated at the BIM Coordination Kick-off Meeting. OR Schedule to be developed as part of the master construction schedule development (see Section 00230).

Zone	Floor	Coordination Meeting	Sign-Off Date

7.2. At the completion of each floor, the team will determine the specific "priority walls" that will be constructed full-height ahead of other interior partitions and MEP installations.

7.3. 3D MEP/FP Coordination Team

7.3.1. The goal of the coordination team will be to integrate the architectural, structural, mechanical, electrical, fire protection, and project specific elements into a collaborative 3D model to identify and resolve issues pertaining to MEP/FP systems and to ensure succinct and expedited field installations of these systems following the release of each zone/floor after clash free conditions are met. (Filled out at BIM Coordination Kick-off Meeting)

7.3.2.

BIM Coordinator	**EDiS Company**
Main Contact	Chris Donahue
Phone Number	302-421-2963
Email Address	cdonahue@ediscompany.com
Project Manager	**EDiS Company**
Main Contact	**TBD**
Phone Number	
Email Address	
Project Engineer	**EDiS Company**
Main Contact	**TBD**
Phone Number	
Email Address	
Project Superintendent	**EDiS Company**
Main Contact	**TBD**
Phone Number	
Email Address	
Site Contractor	**TBD**
Main Contact	
Phone Number	
Email Address	
HVAC	**TBD**
Main Contact	
Phone Number	
Email Address	
Electrical	**TBD**
Main Contact	
Phone Number	
Email Address	
Concrete	**TBD**
Main Contact	
Phone Number	
Email Address	
Plumbing and Piping	**TBD**

Main Contact	
Phone Number	
Email Address	
Architectural	**TBD**
Main Contact	
Phone Number	
Email Address	
MEP/FP Engineers	**TBD**
Main Contact	
Phone Number	
Email Address	
Structural Steel	**TBD**
Main Contact	
Phone Number	
Email Address	
Miscellaneous Steel	**TBD**
Main Contact	
Phone Number	
Email Address	

EXHIBIT '1'

ARTICLE 1: GENERAL PROVISIONS

1.1 This document defines protocols, expected levels of development, and authorized uses of Building Information Models on this Project. It assigns specific responsibility for the development of each Model Element to a defined Level of Development at each Project phase. Where a provision in this Exhibit conflicts with a provision in the Agreement into which this Exhibit is incorporated, the provision in this Exhibit will prevail.

1.1.1 The parties agree to incorporate this Exhibit by reference into any other agreement for services or construction for the Project.

ARTICLE 2: LEVEL OF DEVELOPMENT (LOD)

2.1 The following LOD descriptions identify the specific content requirements and associated authorized uses for each Model Element at five progressively detailed levels of completeness. Each subsequent LOD builds on the previous level and includes all the characteristics of previous levels.

2.2 **LOD 350**

2.2.1 **Model Content Requirements**. Overall building massing indicative of area, height, volume, location, and orientation may be modeled in three dimensions or represented by other data.

2.2.2 **Authorized Uses**

2.2.2.1 **Analysis**. The Model may be analyzed based on volume, area and orientation by application of generalized performance criteria assigned to the representative Model Elements.

2.2.2.2 **Cost Estimating**. The Model may be used to develop a cost estimate based on current area, volume or similar conceptual estimating techniques (e.g., square feet of floor area, condominium unit, hospital bed, etc.).

2.2.2.3 **Schedule**. The Model may be used for project phasing and overall duration.

2.3 **LOD 300 and 350**

2.4.1 **Model Content Requirements**. Model Elements are modeled as specific assemblies accurate in terms of quantity, size, shape, location, and orientation. Existing building elements are modeled as shown on building record drawings. Non-geometric information such as object description and object tags (door number, equipment number, etc) and quantities should be included with each object. Examples of the details required for systems modeled to LOD 300 include, but are not limited to:

- Show all, but not limited to, unground utilities, plumbing and mechanical, concrete modeled as contract documents.
- Site Utilities (see matrix and 6.1 front end)
- Masonry
- Steel decking
- Correct slopes for gravity piping for sanitary, storm or wet fire suppression systems.

- Piping materials specifically called out on documents included with model element attributes (generic manufacturer for system components are acceptable).
- Insulation around Pipe and Ducting.
- Duct dampers included with the duct system.
- Doors/Frames (hollow metal and storefront)
- Owner Furnished Fixtures, Equipment, etc. generically modeled as space claims by the Model Element Author (MEA).
- Concrete
- Anchor bolts
- Structural steel
- Steel stairs, handrails
- Floor/roof penetration steel
- Significantly sized support hangers and sleeves for all systems
- Uni-Strut associated with system components if it is located in a tight overhead space (case by case basis)
- Architectural millwork/casework
- Metal panels and support steel
- Curtainwall system
- Steel stud framing including kickers and trusses at floor penetrations.
- Valve locations (clearance)
- Access panels (these should be modeled with the system they provide access to).
- Conduit racks or other substantially wide / bundled electrical routing. (these can be generically modeled, i.e. extruded boxes, space claims)
- Single conduit runs associated with any system (lighting, power, controls, etc) if needed to coordinate concrete coring.
- Kitchen equipment
- MEP/FP & Low Voltage Equipment
- MEP/FP & Low Voltage Systems
- Pull box locations and any extra space claims for their access.
- Telecom & Data

2.4.2 **Authorized Uses**

2.4.2.1 **Construction**. Suitable for the generation of traditional construction documents. Contractors may utilize this model for coordination purposes and creation of shop drawings.

2.4.2.2 **Analysis**. The Model may be analyzed for performance of selected systems by application of specific performance criteria assigned to the representative Model Elements.

2.4.2.3 **Schedule**. The Model may be used to show ordered, time-scaled appearance of detailed elements and systems.

ARTICLE 3: MODEL ELEMENTS

3.1 **Reliance on EDiS Company's Model Element Matrix**

3.1.1 The EDiS Company Model Element Matrix at the end of this section identifies (1) the LOD required for each Model Element at the end of each Project phase, and (2) the Model Element Author responsible for developing the Model Element to the LOD identified. Each Model Element Author's content is intended to be shared with subsequent Model Element Authors and Model Users throughout the course of the Project.

3.1.2 It is understood that while the content of a specific Model Element may include data that exceeds the required LOD identified in the Model Element Table for a particular phase, Model Users and subsequent Model Element Authors may rely on the accuracy and completeness of a Model Element consistent only with the content required for a LOD identified in the Model Element Table.

3.1.3 Any use of, or reliance on, a Model Element inconsistent with the LOD indicated in the Model Element Table by subsequent Model Element Authors or Model Users shall be at their sole risk and without liability to the Model Element Author. To the fullest extent permitted by law, subsequent Model Element Authors and Model Users shall indemnify and defend the Model Element Author from and against all claims arising from or related to the subsequent Model Element Author's or Model User's modification to, or unauthorized use of, the Model Element Author's content.

3.2 **Table Instructions**

3.2.1 The Model Element Table at the end of this section indicates the LOD to which each Model Element Author (MEA) is required to develop the content of the Model Element at the conclusion of each phase of the Project. EDiS Company holds the rights of this table and all ownership right for edits are performed via EDiS Company.

3.3 EDiS Company's Model Element Matrix AIA Document G202-2013 (attached).

3.4 Insertion Point (attached).

AIA® Document E203™ – 2013

Building Information Modeling and Digital Data Exhibit

This Exhibit dated the 3rd day of January in the year 2020 is incorporated into the agreement (the "Agreement") between the Parties for the following Project:
(Name and location or address of the Project)

Silver Lake Elementary School
200 E. Cochran Street
Middletown, DE 19709

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.

This document is intended to be incorporated into an agreement between the parties and used in conjunction with AIA Documents G201™–2013, Project Digital Data Protocol Form, and G202™–2013, Building Information Modeling Protocol Form. It is anticipated that other Project Participants will incorporate a project specific E203–2013 into their agreements, and that the Parties and other Project Participants will set forth the agreed-upon protocols in AIA Documents G201–2013 and G202–2013.

TABLE OF ARTICLES

1 GENERAL PROVISIONS

2 TRANSMISSION AND OWNERSHIP OF DIGITAL DATA

3 DIGITAL DATA PROTOCOLS

4 BUILDING INFORMATION MODELING PROTOCOLS

5 OTHER TERMS AND CONDITIONS

ARTICLE 1 GENERAL PROVISIONS

§ 1.1 This Exhibit provides for the establishment of protocols for the development, use, transmission, and exchange of Digital Data for the Project. If Building Information Modeling will be utilized, this Exhibit also provides for the establishment of the protocols necessary to implement the use of Building Information Modeling on the Project, including protocols that establish the expected Level of Development for Model Elements at various milestones of the Project, and the associated Authorized Uses of the Building Information Models.

§ 1.2 The Parties agree to incorporate this Exhibit into their agreements with any other Project Participants that may develop or make use of Digital Data on the Project. Prior to transmitting or allowing access to Digital Data, a Party may require any Project Participant to provide reasonable evidence that it has incorporated this Exhibit into its agreement for the Project, and agreed to the most recent Project specific versions of AIA Document G201™–2013, Project Digital Data Protocol Form and AIA Document G202™–2013, Project Building Information Modeling Protocol Form.

§ 1.2.1 The Parties agree that each of the Project Participants utilizing Digital Data on the Project is an intended third party beneficiary of the Section 1.2 obligation to incorporate this Exhibit into agreements with other Project Participants, and any rights and defenses associated with the enforcement of that obligation. This Exhibit does not create any third-party beneficiary rights other than those expressly identified in this Section 1.2.1.

§ 1.3 Adjustments to the Agreement

§ 1.3.1 If a Party believes that protocols established pursuant to Sections 3.2 or 4.5, and memorialized in AIA Documents G201–2013 and G202–2013, will result in a change in the Party's scope of work or services warranting an adjustment in compensation, contract sum, schedule or contract time, the Party shall notify the other Party. Failure to provide notice as required in this Section 1.3 shall result in a Party's waiver of any claims for

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User Notes:

adjustments in compensation, contract sum, schedule or contract time as a result of the established protocols.

§ 1.3.2 Upon such notice, the Parties shall discuss and negotiate revisions to the protocols or discuss and negotiate any adjustments in compensation, contract sum, schedule or contract time in accordance with the terms of the Agreement.

§ 1.3.3 Notice required under this Section 1.3 shall be provided within thirty days of receipt of the protocols, unless otherwise indicated below:
(If the Parties require a notice period other than thirty days from receipt of the protocols, indicate the notice period below.)

§ 1.4 Definitions

§ 1.4.1 Building Information Model. A Building Information Model is a digital representation of the Project, or a portion of the Project, and is referred to in this Exhibit as the "Model," which term may be used herein to describe a Model Element, a single model or multiple models used in the aggregate, as well as other data sets identified in AIA Document G202–2013, Project Building Information Modeling Protocol Form.

§ 1.4.2 Building Information Modeling. Building Information Modeling or Modeling means the process used to create the Model.

§ 1.4.3 Model Element. A Model Element is a portion of the Model representing a component, system or assembly within a building or building site.

§ 1.4.4 Level of Development. The Level of Development (LOD) describes the minimum dimensional, spatial, quantitative, qualitative, and other data included in a Model Element to support the Authorized Uses associated with such LOD.

§ 1.4.5 Authorized Uses. The term "Authorized Uses" refers to the permitted uses of Digital Data authorized in the Digital Data and/or Building Information Modeling protocols established pursuant to the terms of this Exhibit.

§ 1.4.6 Model Element Author. The Model Element Author is the entity (or individual) responsible for managing and coordinating the development of a specific Model Element to the LOD required for an identified Project milestone, regardless of who is responsible for providing the content in the Model Element. Model Element Authors are to be identified in Section 3.3, Model Element Table, of AIA Document G202–2013.

§ 1.4.7 Digital Data. Digital Data is information, including communications, drawings, specifications and designs, created or stored for the Project in digital form. Unless otherwise stated, the term Digital Data includes the Model.

§ 1.4.8 Confidential Digital Data. Confidential Digital Data is Digital Data containing confidential or business proprietary information that the transmitting party designates and clearly marks as "confidential."

§ 1.4.9 Written or In Writing. In addition to any definition in the Agreement to which this Exhibit is attached, for purposes of this Exhibit and the Agreement, "written" or "in writing" shall mean any communication prepared and sent using a transmission method set forth in this Exhibit, or the protocols developed pursuant to this Exhibit, that permits the recipient to print the communication.

§ 1.4.10 Written Notice. In addition to any terms in the Agreement to which this Exhibit is attached, for purposes of this Exhibit and the Agreement, "written notice" shall be deemed to have been duly served if transmitted electronically to an address provided in this Exhibit or the Agreement using a transmission method set forth in this Exhibit that permits the recipient to print the communication.

§ 1.4.11 Party and Parties. The terms "Party" and "Parties" refer to the signing parties to the Agreement.

§ 1.4.12 Project Participant. A Project Participant is an entity (or individual) providing services, work, equipment or materials on the Project and includes the Parties.

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ARTICLE 2 TRANSMISSION AND OWNERSHIP OF DIGITAL DATA

§ 2.1 The transmission of Digital Data constitutes a warranty by the Party transmitting Digital Data to the Party receiving Digital Data that the transmitting Party is the copyright owner of the Digital Data, or otherwise has permission to transmit the Digital Data for its use on the Project in accordance with the Authorized Uses of Digital Data established pursuant to the terms of this Exhibit.

§ 2.2 If a Party transmits Confidential Digital Data, the transmission of such Confidential Digital Data constitutes a warranty to the Party receiving such Confidential Digital Data that the transmitting Party is authorized to transmit the Confidential Digital Data. If a Party receives Confidential Digital Data, the receiving Party shall keep the Confidential Digital Data strictly confidential and shall not disclose it to any other person or entity except as set forth in Section 2.2.1.

§ 2.2.1 The receiving Party may disclose Confidential Digital Data as required by law or court order, including a subpoena or other form of compulsory legal process issued by a court or governmental entity. The receiving Party may also disclose the Confidential Digital Data to its employees, consultants or contractors in order to perform services or work solely and exclusively for the Project, provided those employees, consultants and contractors are subject to the restrictions on the disclosure and use of Confidential Digital Data as set forth in this Exhibit.

§ 2.3 By transmitting Digital Data, the transmitting Party does not convey any ownership right in the Digital Data or in the software used to generate the Digital Data. Unless otherwise granted in a separate license, the receiving Party's right to use, modify, or further transmit Digital Data is specifically limited to designing, constructing, using, maintaining, altering and adding to the Project consistent with the terms of this Exhibit, and nothing contained in this Exhibit conveys any other right to use the Digital Data.

§ 2.4 Where a provision in this Article 2 conflicts with a provision in the Agreement into which this Exhibit is incorporated, the provision in this Article 2 shall prevail.

ARTICLE 3 DIGITAL DATA PROTOCOLS

§ 3.1 Anticipated Types of Digital Data. The anticipated types of Digital Data to be used on the Project are as follows: *(Indicate below the information on the Project that shall be created and shared in a digital format. If the Parties indicate that Building Information Modeling will be utilized on the Project, the Parties shall also complete Article 4.)*

Anticipated Digital Data	**Applicability to the Project** *(Indicate Applicable or Not Applicable)*	**Location of Detailed Description** *(Section 3.1.1 below or in an attachment to this exhibit and identified below)*
Project Agreements and Modifications	Applicable	
Project communications	Via Email & BuildingBlok/Revizto	
Architect's pre-construction submittals	Not Applicable	Via Email & BuildingBlok
Contract Documents	Applicable	
Contractor's submittals	Applicable	
Subcontractor's submittals	Applicable	
Modifications	Applicable	
Project payment documents	Applicable	
Notices and claims	Applicable	
Building Information Modeling	Applicable	

(Row deleted)

§ 3.1.1 Insert a detailed description of the anticipated Digital Data identified in Section 3.1, if not further described in an attachment to this Exhibit.

See attached Exhibit

§ 3.2 As soon as practical following execution of the Agreement, the Parties shall further describe the uses of Digital Data, and establish necessary protocols governing the transmission and Authorized Uses of Digital Data, in consultation with the other Project Participants that are expected to utilize Digital Data on the Project.

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(892364598)

§ 3.2.1 Unless another Project Participant is identified below, the Architect shall prepare and distribute to the other Project Participants Digital Data protocols for review, revision and approval.
(If a Project Participant other than the Architect shall be responsible for preparing draft and final Digital Data protocols, identify that Project Participant.)

EDiS Company

§ 3.2.2 The agreed upon Digital Data protocols shall be set forth in AIA Document G201–2013 and each Project Participant shall memorialize their agreement in writing to such Digital Data protocols.

§ 3.2.3 The Parties, together with the other Project Participants, shall review and, if necessary, revise the Digital Data protocols at appropriate intervals as required by the conditions of the Project.

§ 3.3 The Parties shall transmit, use, store and archive Digital Data in accordance with the Digital Data protocols set forth in the latest version of AIA Document G201–2013 agreed to by the Project Participants.

§ 3.4 Unauthorized Use
§ 3.4.1 Prior to Establishment of Digital Data Protocols
If a Party receives Digital Data prior to the agreement to, and documentation of, the Digital Data protocols in AIA Document G201–2013, that Party is not authorized to use or rely on the Digital Data. Any use of, or reliance on, such Digital Data is at that Party's sole risk and without liability to the other Party and its contractors, consultants, agents and employees.

§ 3.4.2 Following Establishment of Digital Data Protocols
Following agreement to, and documentation of, the Digital Data protocols in AIA Document G201–2013, if a Party uses Digital Data inconsistent with the Authorized Uses identified in the Digital Data protocols, that use shall be at the sole risk of the Party using the Digital Data.

§ 3.5 Digital Data Management
§ 3.5.1 Centralized electronic document management system use on the Project shall be:
(Check the appropriate box. If the Parties do not check one of the boxes below, the default selection shall be that the Parties will not utilize a centralized electronic document management system on the Project.)

[**X**] The Parties intend to use a centralized electronic document management system on the Project.

[ ] The Parties do not intend to use a centralized electronic document management system on the Project.

§ 3.5.2 If the Project Participants intend to utilize a centralized electronic document management system on the Project, the Project Participants identified in Section 3.5.3 shall be responsible for managing and maintaining such system. The Project Participants responsible for managing and maintaining the centralized electronic document management system shall facilitate the establishment of protocols for transmission, use, storage and archiving of the centralized Digital Data and assist the Project Participants identified in Section 3.2.1 above in preparing Digital Data protocols. Upon agreement to, and documentation of, the Digital Data protocols in AIA Document G201–2013, the Project Participants identified in Section 3.5.3 shall manage and maintain the centralized electronic document management system consistent with the management protocols set forth in the latest version of G201–2013 approved by the Project Participants.

§ 3.5.3 Unless responsibility is assigned to another Project Participant, the Architect shall be responsible for managing and maintaining the centralized electronic document management system. If the responsibility for management and maintenance will be assigned to another Project Participant at an identified Project milestone, indicate below the Project Participant who shall assume that responsibility, and the Project milestone.
(Identify the Project Participant responsible for management and maintenance only if the Parties intend to utilize a centralized electronic document management system on the Project.)

Responsible Project Participant	**Project Milestone**
EDiS Company	

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ARTICLE 4 BUILDING INFORMATION MODELING PROTOCOLS

§ 4.1 If the Parties indicate in Section 3.1 that Building Information Modeling will be used on the Project, specify below the extent to which the Parties intend to utilize Building Information Modeling and identify the provisions of this Article 4 governing such use:

[ ] The Parties shall utilize Building Information Modeling on the Project for the sole purpose of fulfilling the obligations set forth in the Agreement without an expectation that the Model will be relied upon by the other Project Participants. Unless otherwise agreed in writing, any use of, transmission of, or reliance on the Model is at the receiving Party's sole risk. The remaining sections of this Article 4 shall have no force or effect.

[ ] The Parties shall develop, share, use and rely upon the Model in accordance with Sections 4.2 through 4.10 of this Exhibit.

§ 4.2 Anticipated Building Information Modeling Scope. Indicate below the portions of the Project for which Modeling will be used and the anticipated Project Participant responsible for that Modeling.

Project Portion for Modeling	Responsible Project Participant
See AIA G202 Building Information Modeling Protocol Form Matrix	Christopher D. Donahue

§ 4.3 Anticipated Model Authorized Uses. Indicate below the anticipated Authorized Uses of the Model for the Project, which Authorized Uses will be agreed upon by the Project Participants and further described for each LOD in AIA Document G202–2013.

§ 4.4 Ancillary Modeling Activities. Indicate additional Modeling activities agreed upon by the Parties, but not to be included in AIA Document G202–2013, if any.
(Describe any Modeling activities, such as renderings, animations, performance simulations, or other similar use, including the anticipated amount and scope of any such Modeling activities.)

All parties identified in contract scopes and AIA E203 4.2 are required to provide 3D modeled electronic document in Autocad, Navisworks and /or Revit to participate in Building Information Modeling construction coordination process.

§ 4.5 Modeling Protocols. As soon as practical following execution of the Agreement, the Parties shall, in consultation with the other Project Participants that are expected to utilize Building Information Modeling on the Project, further describe the Authorized Uses of the Model and establish necessary protocols governing the development of the Model utilizing AIA Document G202–2013.

§ 4.5.1 The Modeling protocols shall address the following:

- **.1** Identification of the Model Element Authors;
- **.2** Definition of the various LOD for the Model Elements and the associated Authorized Uses for each defined LOD;
- **.3** Identification of the required LOD of each Model Element at each identified Project milestone;
- **.4** Identification of the construction classification systems to be used on the Project;
- **.5** The process by which Project Participants will exchange and share the Model at intervals not reflected in Section 3.3, Model Element Table, of AIA Document G202–2013;
- **.6** The process by which the Project Participants will identify, coordinate and resolve changes to the Model;
- **.7** Details regarding any anticipated as-designed or as-constructed Authorized Uses for the Model, if required on the Project;
- **.8** Anticipated Authorized Uses for facilities management or otherwise, following completion of the Project; and
- **.9** Other topics to be addressed by the Modeling protocols: *(Identify additional topics to be addressed by the Modeling Protocols.)*

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§ 4.5.2 Unless responsibility is assigned to another Project Participant identified below, the Architect shall prepare and distribute Modeling protocols to the other Project Participants for review, revision and approval.
(If a Project Participant other than the Architect shall be responsible for preparing draft and final Modeling protocols, identify that Project Participant.)

§ 4.5.3 The agreed upon Modeling protocols shall be set forth in AIA Document G202–2013 and each Project Participant shall memorialize their agreement in writing to such Modeling protocols.

§ 4.5.4 The Parties, together with the other Project Participants, shall review, and if necessary, revise the Modeling protocols at appropriate intervals as required by the conditions of the Project.

§ 4.6 The Parties shall develop, use and rely on the Model in accordance with the Modeling protocols set forth in the latest version of AIA Document G202–2013, which document shall be included in or attached to the Model in a manner clearly accessible to the Project Participants.

§ 4.7 Unauthorized Use

§ 4.7.1 Prior to Establishment of Modeling Protocols

If a Party receives any Model prior to the agreement to, and documentation of, the Modeling protocols in AIA Document G202–2013, that Party is not authorized to use, transmit, or rely on the Model. Any use, transmission or reliance is at that Party's sole risk and without liability to the other Party and its contractors, consultants, agents and employees.

§ 4.7.2 Following Establishment of Modeling Protocols

Following agreement to, and documentation of, the Modeling protocols in AIA Document G202–2013, if a Party uses or relies on the Model inconsistent with the Authorized Uses identified in the Modeling protocols, such use or reliance shall be at the sole risk of the Party using or relying on the Model. A Party may rely on the Model Element only to the extent consistent with the minimum data required for the identified LOD, even if the content of a specific Model Element includes data that exceeds the minimum data required for the identified LOD.

§ 4.8 Model Management

§ 4.8.1 The requirements for managing the Model include the duties set forth in this Section 4.8. Unless assigned to another Project Participant, the Architect shall manage the Model from the inception of the Project. If the responsibility for Model management will be assigned to another Project Participant, or change at an identified Project milestone, indicate below the identity of the Project Participant who will assume that responsibility, and the Project milestone.

Responsible Project Participant	Project Milestone
Christopher D. Donahue, Project Coordinator	

§ 4.8.2 Model Management Protocol Establishment. The Project Participant responsible for managing the Model, in consultation with the other Project Participants that are expected to utilize Building Information Modeling on the Project, shall facilitate the establishment and revision of Model management protocols, including the following:

.1 Model origin point, coordinate system, precision, file formats and units
.2 Model file storage location(s)
.3 Processes for transferring and accessing Model files
.4 Naming conventions
.5 Processes for aggregating Model files from varying software platforms
.6 Model access rights
.7 Identification of design coordination and clash detection procedures.
.8 Model security requirements
.9 Other: *(Identify additional Model management protocols to be addressed.)*

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§ 4.8.3 Ongoing Responsibilities. The Project Participant responsible for managing the Model shall do so consistent with the Model management protocols, which shall also include the following ongoing responsibilities:

.1 Collect incoming Models:
  .1 Coordinate submission and exchange of Models
  .2 Create and maintain a log of Models received
  .3 Review Model files for consistency with Sections 4.8.2.1 through 4.8.2.5
  .4 Maintain a record copy of each Model file received
.2 Aggregate Model files and make them available for Authorized Uses
.3 Maintain Model Archives and backups consistent with the requirements of Section 4.8.4 below
.4 Manage Model access rights
.5 Other: *(Identify additional responsibilities.)*

.6 Attend and participate in BIM coordination meetings is mandatory, liquidated damages apply for avoiding BIM process.

§ 4.8.4 Model Archives. The individual or entity responsible for Model management as set forth in this Section 4.8 shall compile a Model Archive at the end of each Project milestone and shall preserve it without alteration as a record of Model completion as of that Project milestone.

§ 4.8.4.1 Additional Model Archive requirements, if any, are as follows:

§ 4.8.4.2 The procedures for storing and preserving the Model(s) upon final completion of the Project are as follows:

§ 4.9 Post-Construction Model. The services associated with providing a Model for post-construction use shall only be required if specifically designated in the table below as a Party's responsibility.
(Designate below any anticipated post-construction Model and related requirements, the Project Participant responsible for creating or adapting the Model to achieve such uses, and the location of a detailed description of the anticipated scope of services to create or adapt the Model as necessary to achieve such uses.)

Post-Construction Model	Applicability to Project *(Applicable or Not Applicable)*	Responsible Project Participant	Location of Detailed Description of Requirements and Services *(Section 4.10 below or in an attachment to this exhibit and identified below)*
§ 4.9.1 Remodeling	Not Applicable		
§ 4.9.2 Wayfinding and Mapping	Not Applicable		
§ 4.9.3 Asset/FF & E Management	Not Applicable		
§ 4.9.4 Energy Management	Not Applicable		
§ 4.9.5 Space Management	Not Applicable		
§ 4.9.6 Maintenance Management	Not Applicable		

(Row deleted)

§ 4.10 Insert a detailed description of the requirements for each Post-Construction Model identified in Section 4.9 and the anticipated services necessary to create each Post-Construction Model, if not further described in an attachment to this Exhibit.

ARTICLE 5 OTHER TERMS AND CONDITIONS

Other terms and conditions related to the transmission and use of Digital Data are as follows:

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AIA® Document G201™ – 2013

Project Digital Data Protocol Form

PROJECT: *(Name and address)*
Silver Lake Elementary School
200 E. Cochran Street
Middletown, DE 19709

PROTOCOL VERSION NUMBER:

DATE: January 3, 2020

PREPARED BY: Christopher Donahue/Jackie McKee

DISTRIBUTION TO: *(List each individual to whom this protocol is distributed. Include individuals listed in Section 1.2, or reference Section 1.2, along with any additional recipients.)*

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.

This document is intended to be used in conjunction with a project specific AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, which the Parties will incorporate into their Agreement for the Project.

TABLE OF ARTICLES

1 GENERAL PROVISIONS REGARDING USE OF DIGITAL DATA

2 DIGITAL DATA MANAGEMENT PROTOCOLS

3 TRANSMISSION AND USE OF DIGITAL DATA

ARTICLE 1 GENERAL PROVISIONS REGARDING USE OF DIGITAL DATA

§ 1.1 List each Project Participant that has incorporated AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, dated , into its agreement for the Project:

Init.

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Project Participant	Discipline

§ 1.2 Project Participants. For each Project Participant listed in Section 1.1, identify and provide contact information for the individuals responsible for implementation of the Digital Data protocols.

Project Participant	Individual Responsible	Contact Information

§ 1.3 Terms in this document shall have the same meaning as those in AIA Document E203–2013.

ARTICLE 2 DIGITAL DATA MANAGEMENT PROTOCOLS

§ 2.1.1 Electronic Document Management System. If, pursuant to Section 3.5.1 of the Project specific version of AIA Document E203–2013, the Project Participants indicated an intent to use a centralized electronic document management system on the Project, the requirements for the centralized electronic document management system are as follows:
(The requirements for the system shall address, among other things, access to and security of Digital Data.)

§ 2.1.2 System Startup Requirements. Initial training and other startup requirements to be implemented with respect to the use or management of Digital Data, if any, are as follows:
(Describe in detail any initial training or other startup requirements.)

§ 2.1.3 Ongoing System Requirements. Ongoing training or support programs to be implemented with respect to the use or management of Digital Data, if any, are as follows:
(Describe in detail any ongoing training or support programs to be implemented.)

§ 2.2 Digital Data Storage Requirements. The procedures and requirements for storing Digital Data during the course of the Project, if any, are as follows:
(Describe in detail the procedures and requirements for storing Digital Data during the course of the Project.)

§ 2.3 Digital Data Archiving Requirements. The procedures and requirements for archiving and preserving Digital Data during the course of the Project and following final completion of the Project, if any, are as follows:
(Describe in detail the procedures and requirements for archiving and preserving Digital Data during the course of the Project and following final completion.)

§ 2.4 Other Digital Data Management protocol requirements, if any, are as follows:
(Describe in detail any other requirements.)

Revizto is implemented on this Silver Lake project. Revizto is a management software for BIM coordination. All BIM mandatory subcontractors are required to use and complete the coordination through Revizto. License is contractor's responsibility at $500.00.

ARTICLE 3 TRANSMISSION AND USE OF DIGITAL DATA

§ 3.1 Digital Data Protocol Table. The Project Participants shall comply with the data formats, transmission methods and Authorized Uses set forth in the Digital Data Protocol Table below when transmitting or using Digital Data on the Project.

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(Complete the Digital Data Protocol Table by entering information in the spaces below. Adapt the table to the needs of the Project by adding, deleting or modifying the listed Digital Data as necessary. Use Section 3.2 Digital Data Protocol Table Definitions and Notes to define abbreviations placed, and to record notes indicated, in the Digital Data Protocol Table.)

Digital Data	Digital Data Format	Transmission Method	Authorized Uses	Note Number *(See Sec. 3.2)*
§ 3.1.1 Project Agreements and Modifications	PDF	Email		
§ 3.1.2 Project communications	GOTO Meeting	Email & BB		
General communications		Email & BB		
Meeting notices	PDF	Email & BB		
Agendas	PDF	Email & BB		
Minutes	PDF	Email & BB		
Requests for information	BuildingBlok	Email & BB		
Architect's Supplemental Instructions	AIA G201 & Contract	Email & BB		
§ 3.1.3 Architect's pre-construction submittals	PDF & BB	Email & BB		
Schematic Design Documents		Email & BB		
Design Development Documents		Email & BB		
Construction Documents	PDF	Email & BB		
§ 3.1.4 Contract Documents	PDF	Email & BB		
Architect's Drawings	PDF	Email & BB		
Architect's Specifications	PDF	Email & BB		
§ 3.1.5 Contractor's submittals	PDF	Email & BB		
Product data	PDF	Email & BB		
Submitted by Contractor	PDF	Email & BB		
Returned by Architect	PDF	Email & BB		
Shop drawings	PDF	Email & BB		
Submitted by Contractor	PDF	Email & BB		
Returned by Architect	PDF	Email & BB		
§ 3.1.6 Subcontractor's submittals	Physical & PDF BB	Email & BB		
Product data	PDF & BB	Email & BB		
Submitted by Subcontractor	PDF & BB	Email & BB		
Returned by Contractor	BuildingBlok	Email & BB		
Shop drawings	PDF	Email & BB		
Submitted by Subcontractor	PDF	Email & BB		
Returned by Contractor	PDF	Email & BB		
§ 3.1.7 Modifications				

(Rows deleted)

Architect's order for a minor change in the Work	PDF	Email & BB		
		Email & BB		
Construction Change Directives	PDF	Email & BB		
Change Orders	PDF	Email & BB		
§ 3.1.8 Project payment documents				
§ 3.1.9 Notices and Claims				
§ 3.1.10 Closeout documents	Electronic Navisworks			
Record documents	PDF			
Operations and Maintenance Manual				

(Row deleted)

§ 3.2 Digital Data Protocol Table Definitions and Notes

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Digital Data Format:
(Provide required data format, including software version, if applicable.)

Digital Data Format	Definition
Revit/Navisworks/Revizto	

Transmission Method:
(Below are suggested abbreviations and definitions. Delete, modify or supplement, as necessary.)

Abbreviation	Definition
CD	Delivered via Compact Disk
EM	Via e-mail
DMS	Centralized Electronic Document Management System

Authorized Uses of Digital Data:
(Below are suggested abbreviations and definitions. Delete, modify or supplement, as necessary.)

Abbreviation	Definition
I	Integrate (incorporate additional digital data without modifying data received)
M	Modify as required to fulfill obligations for the Project
R	Reproduce and distribute
S	Store and view only

Notes:
(List by number shown on table.)

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(1097417798)

AIA® Document G202™ – 2013

Project Building Information Modeling Protocol Form

PROJECT: *(Name and address)*
Silver Lake Elementary School
200 E. Cochran Street
Middletown, DE 19709

PROTOCOL VERSION NUMBER:

DATE: January 3,2020

PREPARED BY: Chris Donahue/Jackie McKee

DISTRIBUTION TO: *(List each individual to whom this protocol is distributed. Include individuals listed in Section 1.1, or reference Section 1.1, along with any additional recipients.)*

TABLE OF ARTICLES

1 GENERAL PROVISIONS

2 LEVEL OF DEVELOPMENT

3 MODEL ELEMENTS

ARTICLE 1 GENERAL PROVISIONS

§ 1.1 For each Project Participant that has incorporated the Project specific AIA Document E203™–2013, Building Information Modeling and Digital Data Protocol Exhibit, dated January 3, 2020, into its agreement for the Project, identify and provide the contact information for individuals responsible for implementation of the Modeling protocols. If, for any Project Participant, more than one individual will be responsible for implementation of the Modeling protocols, list each individual separately and describe the unique Modeling Role assigned to each individual.

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.

This document is intended to be used in conjunction with a Project specific AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, which the Parties will incorporate into their agreement for the Project, and a Project specific AIA Document G201™–2013, Project Digital Data Protocol Form.

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Modeling Role	Project Participant	Individual Responsible	Contact Information
Project Coordinator	EDiS BIM Services	Christopher Donahue	EDiS Company 110 S Poplar Street Wilmington, De 19801 302-421-2963 cdonahue@ediscompany.com

§ 1.2 This document establishes the Modeling protocols for the Project. For purposes of these protocols, the Model is comprised of the following information and other data sets:
(Indicate disciplines, separate models, and other data that will be included within the Model and governed by the Modeling protocols.)

§ 1.3 Collaboration Protocols. The Project Participants' protocols for the collaborative utilization of the Model, if any, including communications protocols, a collaboration meeting schedule and colocation requirements, are as follows:

§ 1.4 Technical Requirements. The technical requirements relating to the utilization of Building Information Modeling, including specific software and hardware requirements are as follows:

§ 1.5 Training and Support.-NOT USED

§ 1.6 Model Standard. The Model shall be developed in accordance with the following Model Standard, if any:

§ 1.7 Model Management Protocols and Processes
The following Model Management Protocols and Processes shall apply to the Project only if specifically designated in the table below as being applicable.
(Designate the Model Management Protocols and Processes applicable to the Project in the second column of the table below. In the third column, indicate whether the detailed description of the Model Management Protocol or Process is located in Section 1.8 or in an attached exhibit. If in an exhibit, identify the exhibit.)

Model Management Protocols and Processes		Applicability to Project *(Applicable or Not Applicable)*	Location of Detailed Description *(Section 1.8 below or in an attachment to this exhibit identified below)*
§ 1.7.1	Model origin point, coordinate system, precision, file formats and units	Applicable	0, 0, 0
§ 1.7.2	Model file storage location(s)	Applicable	EDiS BIM Services
§ 1.7.3	Processes for transferring and accessing Model files	Applicable	Drop Box & BuildingBlok
§ 1.7.4	Naming conventions	Applicable	EDiS Standard
§ 1.7.5	Processes for aggregating Model files from varying software platforms		Autodesk CAD MEP & Navisworks& Revizto
§ 1.7.6	Model access rights	N/A	
§ 1.7.7	Design coordination and clash detection procedures.	Applicable	EDiS
§ 1.7.8	Model security requirements	Applicable	Confidential

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§ 1.8 Insert a description of each Model Management Protocol and Process identified in Section 1.7, if not further described in an exhibit attached to this document:

See attached documents

§ 1.9 Terms in this document shall have the same meaning as those in AIA Document E203–2013.

ARTICLE 2 LEVEL OF DEVELOPMENT

§ 2.1 The Level of Development (LOD) descriptions, included in Section 2.2 through Section 2.6 below, identify the specific minimum content requirements and associated Authorized Uses for each Model Element at five progressively detailed levels of completeness. The Parties shall utilize the five LOD descriptions in completing the Model Element Table at Section 3.3.

§ 2.2 LOD 100

§ 2.2.1 Model Element Content Requirements. The Model Element may be graphically represented in the Model with a symbol or other generic representation, but does not satisfy the requirements for LOD 200. Information related to the Model Element (i.e., cost per square foot, tonnage of HVAC, etc.) can be derived from other Model Elements.

§ 2.2.2 Authorized Uses

§ 2.2.2.1 Analysis. The Model Element may be analyzed based on volume, area and orientation by application of generalized performance criteria assigned to other Model Elements.

§ 2.2.2.2 Cost Estimating. The Model Element may be used to develop a cost estimate based on current area, volume or similar conceptual estimating techniques (e.g., square feet of floor area, condominium unit, hospital bed, etc.).

§ 2.2.2.3 Schedule. The Model Element may be used for Project phasing and determination of overall Project duration.

§ 2.2.2.4 Other Authorized Uses. Additional Authorized Uses of the Model Element developed to LOD 100, if any, are as follows:

§ 2.3 LOD 200

§ 2.3.1 Model Element Content Requirements. The Model Element is graphically represented within the Model as a generic system, object, or assembly with approximate quantities, size, shape, location, and orientation. Non-graphic information may also be attached to the Model Element.

§ 2.3.2 Authorized Uses

§ 2.3.2.1 Analysis. The Model Element may be analyzed for performance of selected systems by application of generalized performance criteria assigned to the representative Model Elements.

§ 2.3.2.2 Cost Estimating. The Model Element may be used to develop cost estimates based on the approximate data provided and quantitative estimating techniques (e.g., volume and quantity of elements or type of system selected).

§ 2.3.2.3 Schedule. The Model Element may be used to show ordered, time-scaled appearance of major elements and systems.

§ 2.3.2.4 Coordination. The Model Element may be used for general coordination with other Model Elements in terms of its size, location and clearance to other Model Elements.

§ 2.3.2.5 Other Authorized Uses. Additional Authorized Uses of the Model Element developed to LOD 200, if any, are as follows:

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§ 2.4 LOD 300

§ 2.4.1 Model Element Content Requirements. The Model Element is graphically represented within the Model as a specific system, object or assembly in terms of quantity, size, shape, location, and orientation. Non-graphic information may also be attached to the Model Element.

§ 2.4.2 Authorized Uses

§ 2.4.2.1 Analysis. The Model Element may be analyzed for performance of selected systems by application of specific performance criteria assigned to the representative Model Element.

§ 2.4.2.2 Cost Estimating. The Model Element may be used to develop cost estimates suitable for procurement based on the specific data provided.

§ 2.4.2.3 Schedule. The Model Element may be used to show ordered, time-scaled appearance of detailed elements and systems.

§ 2.4.2.4 Coordination. The Model Element may be used for specific coordination with other Model Elements in terms of its size, location and clearance to other Model Elements including general operation issues.

§ 2.4.2.5 Other Authorized Uses. Additional Authorized Uses of the Model Element developed to LOD 300, if any, are as follows:

§ 2.5 LOD 400

§ 2.5.1 Model Element Content Requirements. The Model Element is graphically represented within the Model as a specific system, object or assembly in terms of size, shape, location, quantity, and orientation with detailing, fabrication, assembly, and installation information. Non-graphic information may also be attached to the Model Element.

§ 2.5.2 Authorized Uses

§ 2.5.2.1 Analysis. The Model Element may be analyzed for performance of systems by application of actual performance criteria assigned to the Model Element.

§ 2.5.2.2 Cost Estimating. Costs are based on the actual cost of the Model Element at buyout.

§ 2.5.2.3 Schedule. The Model may be used to show ordered, time-scaled appearance of detailed specific elements and systems including construction means and methods.

§ 2.5.2.4 Coordination. The Model Element may be used for coordination with other Model Elements in terms of its size, location and clearance to other Model Elements, including fabrication, installation and detailed operation issues.

§ 2.5.2.5 Other Authorized Uses. Additional Authorized Uses of the Model Element developed to LOD 400, if any, are as follows:

§ 2.6 LOD 500

§ 2.6.1 Model Element Content Requirements. The Model Element is a field verified representation in terms of size, shape, location, quantity, and orientation. Non-graphic information may also be attached to the Model Elements.

§ 2.6.2 Authorized Uses. Specific Authorized Uses of the Model Element developed to LOD 500, if any, are as follows:

ARTICLE 3 MODEL ELEMENTS

§ 3.1 Reliance on Model Elements

§ 3.1.1 At any particular Project milestone, a Project Participant may rely on the accuracy and completeness of a Model Element only to the extent consistent with the minimum data required for the Model Element's LOD for that Project

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milestone as identified below in the Model Element Table, even if the content of a specific Model Element includes data that exceeds the minimum data required for the identified LOD.

§ 3.1.2 Coordination and Model Refinement

Where conflicts are found in the Model, regardless of the phase of the Project or LOD, the Project Participant that identifies the conflict shall promptly notify the Model Element Authors and the Project Participant identified in AIA Document E203–2013 Section 4.8 as being responsible for Model management. Upon such notification, the Model Element Author(s) shall act promptly to evaluate, mitigate and resolve the conflict in accordance with the processes established in Section 1.7.7, if applicable.

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§ 3.2 Table Instructions

§ 3.2.1 The Model Element Table in Section 3.3 indicates the LOD to which each Model Element shall be developed at each identified Project milestone and the Model Element Author.

§ 3.2.2 Abbreviations for each Model Element Author to be used in the Model Element Table are as follows:
(Provide abbreviations, such as "A—Architect," or "C—Contractor.")

Abbreviation	Model Element Author (MEA)
EDiS	EDiS Company
BP	Bid Package
RGA	R.G. Architects
DA	Duffield Associates
BIA	Baker Ingram Associates
FA	Furlow Associates
DM	Design Model
03	Concrete
05	Structural Steel & Miscellaneous Metals
06	Carpentry & General Work
08	Metal Studs & Drywall
11	Folding Partitions
13	Acoustical Ceilings
17	Kitchen Equipment
18	Fire Protection
19	Mechanical & Plumbing
21	Electrical

§ 3.3 Model Element Table *Identify (1) the LOD required for each Model Element at each Project milestone, (2) the Model Element Author, and (3) references to any applicable notes found in Section 3.4.* *Insert abbreviations for each MEA identified in the table below, such as "A – Architect," or "C – Contractor."* *NOTE: LODs must be adapted for the unique characteristics of each Project.*		Construction Management Bid Package A			Construction Management Bid Package B			Construction Management Bid Package C			Construction Management Bid Package D									**Notes** *(See Sec 3.4)*
Model Elements Utilizing CSI UniFormat™	LOD	MEA	Notes	LOD	MEA	Notes	LOD	MEA	Notes	LOD	MEA	Notes	LOD	MEA	Notes	LOD	MEA	Notes		
A SUBSTRUCTURE																				
A10 FOUNDATIONS																				
A1010 Standard Foundations (existing and new)																				

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§ 3.3 Model Element Table

Identify (1) the LOD required for each Model Element at each Project milestone, (2) the Model Element Author, and (3) references to any applicable notes found in Section 3.4.

Insert abbreviations for each MEA identified in the table below, such as "A – Architect," or "C – Contractor."

NOTE: LODs must be adapted for the unique characteristics of each Project.

Model Elements Utilizing CSI UniFormat™	Construction Management Bid Package A			Construction Management Bid Package B			Construction Management Bid Package C			Construction Management Bid Package D									Notes (See Sec 3.4)
	LOD	MEA	Notes	LOD	MEA	Notes	LOD	MEA	Notes	LOD	MEA	Notes	LOD	MEA	Notes	LOD	MEA	Notes	
A1010.10 Wall Foundations	350	03																	
A1010.30 Column Foundations	350	03																	
A1010.90 Standard Foundation Supplementary Components	350	03																	
A1020 Special Foundations																			
A1020.10 Driven Piles																			
A1020.15 Bored Piles																			
A1020.20 Caissons																			
A1020.30 Special Foundation Walls	350	03																	
A1020.40 Foundation Anchors																			
A1020.50 Underpinning (if required)	350	03																	
A1020.60 Raft Foundations																			
A1020.70 Pile Caps																			
A1020.80 Grade Beams	350	03																	
A20 SUBGRADE ENCLOSURES																			
A2010 Walls for Subgrade Enclosures																			
A2010.10 Subgrade Enclosure Wall Construction																			
A2010.20 Subgrade Enclosure Wall Interior Skin																			
A2010.90 Subgrade Enclosure Wall Supplementary Components																			
A40 SLABS-ON-GRADE																			
A4010 Standard Slabs-on-Grade																			
A4020 Structural Slabs-on-Grade																			
A4030 Slab Trenches																			
A4040 Pits and Bases																			
A4090 Slab-On-Grade Supplementary Components																			
A4090.10 Perimeter Insulation																			
A4090.20 Vapor Retarder																			
A4090.30 Waterproofing																			
A4090.50 Mud Slab																			
A4090.60 Subbase Layer																			
A60 WATER AND GAS MITIGATION																			

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Insert abbreviations for each MEA identified in the table below, such as "A – Architect," or "C – Contractor."

NOTE: LODs must be adapted for the unique characteristics of each Project.

	Construction Management Bid Package A			Construction Management Bid Package B			Construction Management Bid Package C			Construction Management Bid Package D									Notes (See Sec 3.4)
Model Elements Utilizing CSI UniFormat™	LOD	MEA	Notes	LOD	MEA	Notes	LOD	MEA	Notes	LOD	MEA	Notes	LOD	MEA	Notes	LOD	MEA	Notes	
A6010 Building Subdrainage																			
A6010.10 Foundation Drainage	350	19																	
A6010.20 Underslab Drainage	350	19																	
A6020 Off-Gassing Mitigation																			
A6020.10 Radon Mitigation																			
A6020.50 Methane Mitigation																			
A90 SUBSTRUCTURE RELATED ACTIVITIES																			
A9010 Substructure Excavation																			
A9010.10 Backfill and Compaction																			
A9020 Construction Dewatering																			
A9030 Excavation Support																			
A9030.10 Anchor Tiebacks																			
A9030.20 Cofferdams																			
A9030.40 Cribbing and Walers																			
A9030.60 Ground Freezing																			
A9030.70 Slurry Walls																			
A9040 Soil Treatment																			
B SHELL																			
B10 SUPERSTRUCTURE																			
B1010 Floor Construction																			
B1010.10 Floor Structural Frame (& K-Joist)	350	05																	
B1010.20 Floor Decks, Slabs, and Toppings	350	03																	
B1010.30 Balcony Floor Construction	350	03 05																	
B1010.40 Mezzanine Floor Construction	350	03 05																	
B1010.50 Ramps, Steel & Construction	350	03 05																	
B1010.90 Floor Construction Supplementary Components	350	03 05																	
B1020 Roof Construction																			
B1020.10 Roof Structural Frame (& K-Joist)	350	05																	

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Insert abbreviations for each MEA identified in the table below, such as "A – Architect," or "C – Contractor."

NOTE: LODs must be adapted for the unique characteristics of each Project.

			Construction Management Bid Package A			Construction Management Bid Package B			Construction Management Bid Package C			Construction Management Bid Package D									Notes (See Sec 3.4)
Model Elements Utilizing CSI UniFormat™			LOD	MEA	Notes	LOD	MEA	Notes	LOD	MEA	Notes	LOD	MEA	Notes	LOD	MEA	Notes	LOD	MEA	Notes	
	B1020.20	Roof Decks, Slabs, and Sheathing	350	05																	
	B1020.30	Canopy Construction	350	05																	
	B1020.90	Roof Construction Supplementary Components	350	05																	
B1080	**Stairs**																				
	B1080.10	Stair Construction	350	05																	
	B1080.30	Stair Soffits																			
	B1080.50	Stair Railings																			
	B1080.60	Fire Escapes																			
	B1080.70	Metal Walkways																			
	B1080.80	Ladders																			
B20	**EXTERIOR VERTICAL ENCLOSURES**																				
B2010	**Exterior Walls**																				
	B2010.10	Exterior Wall Veneer																			
	B2010.20	Exterior Wall Construction	350	08																	
	B2010.30	Exterior Wall Interior Skin																			
	B2010.40	Fabricated Exterior Wall Assemblies	350	08																	
	B2010.50	Parapets	350	08																	
	B2010.60	Equipment Screens																			
	B2010.80	Exterior Wall Supplementary Components	350	08																	
	B2010.90	Exterior Wall Opening Supplementary Components																			
B2020	**Exterior Windows**																				
	B2020.10	Exterior Operating Windows																			
	B2020.20	Exterior Fixed Windows																			
	B2020.30	Exterior Window Wall (curtain wall)																			
	B2020.50	Exterior Special Function Windows																			
B2050	**Exterior Doors and Grilles**																				
	B2050.10	Exterior Entrance Doors	350	06																	
	B2050.20	Exterior Utility Doors	350	06																	
	B2050.30	Exterior Oversize Doors	350	06																	

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Insert abbreviations for each MEA identified in the table below, such as "A – Architect," or "C – Contractor."

NOTE: LODs must be adapted for the unique characteristics of each Project.

	Construction Management Bid Package A			Construction Management Bid Package B			Construction Management Bid Package C			Construction Management Bid Package D									Notes (See Sec 3.4)
Model Elements Utilizing CSI UniFormat™	LOD	MEA	Notes	LOD	MEA	Notes	LOD	MEA	Notes	LOD	MEA	Notes	LOD	MEA	Notes	LOD	MEA	Notes	
B2050.40 Exterior Special Function Doors	350	06																	
B2050.60 Exterior Grilles	350	06																	
B2050.70 Exterior Gates	350	06																	
B2050.90 Exterior Door Supplementary Components	350	06																	
B2070 Exterior Louvers and Vents																			
B2070.10 Exterior Louvers	350	06																	
B2070.50 Exterior Vents	350	06																	
B2080 Exterior Wall Appurtenances																			
B2080.10 Exterior Fixed Grilles and Screens																			
B2080.30 Exterior Opening Protection Devices																			
B2080.50 Exterior Balcony Walls and Railings																			
B2080.70 Exterior Fabrications																			
B2080.80 Bird Control Devices																			
B2090 Exterior Wall Specialties																			
B30 EXTERIOR HORIZONTAL ENCLOSURES																			
B3010 Roofing																			
B3010.10 Steep Slope Roofing	350	07																	
B3010.50 Low-Slope Roofing																			
B3010.70 Canopy Roofing																			
B3010.90 Roofing Supplementary Components																			
B3020 Roof Appurtenances																			
B3020.10 Roof Accessories																			
B3020.30 Roof Specialties (Limit Lines), Roof Hatches & Smoke																			
B3020.70 Rainwater Management																			
B3040 Traffic Bearing Horizontal Enclosures																			
B3040.10 Traffic Bearing Coatings																			
B3040.30 Horizontal Waterproofing Membrane																			
B3040.50 Wear Surfaces																			
B3040.90 Horizontal Enclosure Supplementary Components																			
B3060 Horizontal Openings																			

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Insert abbreviations for each MEA identified in the table below, such as "A – Architect," or "C – Contractor."

NOTE: LODs must be adapted for the unique characteristics of each Project.

Model Elements Utilizing CSI UniFormat™		LOD	MEA	Notes	LOD	MEA	Notes	LOD	MEA	Notes	LOD	MEA	Notes	LOD	MEA	Notes	LOD	MEA	Notes	Notes (See Sec 3.4)
		Construction Management Bid Package A			Construction Management Bid Package B			Construction Management Bid Package C			Construction Management Bid Package D									
B3060.10	Roof Windows and Skylights	350	07																	
B3060.50	Vents and Hatches	350	07																	
B3060.90	Horizontal Opening Supplementary Components	350	07																	
B3080	**Overhead Exterior Enclosures**																			
B3080.10	Exterior Ceilings	350	13																	
B3080.20	Exterior Soffits	350	13																	
B3080.30	Exterior Bulkheads	350	13																	
C INTERIORS																				
C10 INTERIOR CONSTRUCTION																				
C1010	**Interior Partitions**																			
C1010.10	Interior Fixed Partitions	350	08																	
C1010.20	Interior Glazed Partitions	350	07																	
C1010.40	Interior Demountable Partitions																			
C1010.50	Interior Operable Partitions	350	07																	
C1010.70	Interior Screens																			
C1010.90	Interior Partition Supplementary Components	250	07																	
C1020	**Interior Windows**																			
C1020.10	Interior Operating Windows																			
C1020.20	Interior Fixed Windows																			
C1020.50	Interior Special Function Windows																			
C1020.90	Interior Window Supplementary Components																			
C1030	**Interior Doors**																			
C1030.10	Interior Swinging Doors (All Door Types)	350	07																	
C1030.20	Interior Entrance Doors (All Door Types)	350	07																	
C1030.25	Interior Sliding Doors (All Door Types)	350	07																	
C1030.30	Interior Folding Doors (All Door Types)	400	11																	
C1030.40	Interior Coiling Doors (All Door Types)	350	07																	
C1030.50	Interior Panel Doors (All Door Types)	350	07																	

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		LOD	MEA	Notes	LOD	MEA	Notes	LOD	MEA	Notes	LOD	MEA	Notes	LOD	MEA	Notes	LOD	MEA	Notes	
C1030.70	Interior Special Function Doors	350	07																	
C1030.80	Interior Access Doors and Panels	350	07																	
C1030.90	Interior Door Supplementary Components	350	07																	
C1040	**Interior Grilles and Gates**																			
C1040.10	Interior Grilles																			
C1040.50	Interior Gates																			
C1060	**Raised Floor Construction**																			
C1060.10	Access Flooring																			
C1060.30	Platform/Stage Floors																			
C1070	**Suspended Ceiling Construction**																			
C1070.10	Acoustical Suspended Ceilings	350	13																	
C1070.20	Suspended Plaster and Gypsum Board Ceilings	350	13																	
C1070.50	Specialty Suspended Ceilings	350	13																	
C1070.70	Special Function Suspended Ceilings	350	13																	
C1070.90	Ceiling Suspension Components	350	13																	
C1090	**Interior Specialties**																			
C1090.10	Interior Railings and Handrails																			
C1090.15	Interior Louvers																			
C1090.20	Information Specialties																			
C1090.25	Compartments and Cubicles (Toilet Partitions)																			
C1090.30	Service Walls																			
C1090.35	Wall and Door Protection																			
C1090.40	Toilet, Bath, and Laundry Accessories	350	07																	
C1090.45	Interior Gas Lighting																			
C1090.50	Fireplaces and Stoves																			
C1090.60	Safety Specialties																			
C1090.70	Storage Specialties																			
C1090.90	Other Interior Specialties																			
C20	**INTERIOR FINISHES**																			
C2010	**Wall Finishes**																			

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C2010.10	Tile Wall Finish																			
C2010.20	Wall Paneling																			
C2010.30	Wall Coverings																			
C2010.35	Wall Carpeting																			
C2010.50	Stone Facing																			
C2010.60	Special Wall Surfacing																			
C2010.70	Wall Painting and Coating																			
C2010.80	Acoustical Wall Treatment																			
C2010.90	Wall Finish Supplementary Components																			
C2020	**Interior Fabrications**																			
C2030	**Flooring**																			
C2030.10	Flooring Treatment																			
C2030.20	Tile Flooring																			
C2030.30	Specialty Flooring																			
C2030.40	Masonry Flooring																			
C2030.45	Wood Flooring																			
C2030.50	Resilient Flooring																			
C2030.60	Terrazzo Flooring																			
C2030.70	Fluid-Applied Flooring																			
C2030.75	Carpeting																			
C2030.80	Athletic Flooring																			
C2030.85	Entrance Flooring																			
C2030.90	Flooring Supplementary Components																			
C2040	**Stair Finishes**																			
C2040.20	Tile Stair Finish																			
C2040.40	Masonry Stair Finish																			
C2040.45	Wood Stair Finish																			
C2040.50	Resilient Stair Finish																			
C2040.60	Terrazzo Stair Finish																			
C2040.75	Carpeted Stair Finish																			
C2050	**Ceiling Finishes**																			
C2050.10	Plaster and Gypsum Board Finish																			

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C2050.20 Ceiling Paneling																			
C2050.70 Ceiling Painting and Coating																			
C2050.80 Acoustical Ceiling Treatment																			
C2050.90 Ceiling Finish Supplementary Components																			
C2090 Interior Finish Schedules																			
D SERVICES																			
D10 CONVEYING																			
D1010 Vertical Conveying Systems																			
D1010.10 Elevators																			
D1010.20 Lifts																			
D1010.30 Escalators																			
D1010.50 Dumbwaiters																			
D1010.60 Moving Ramps																			
D1030 Horizontal Conveying																			
D1030.10 Moving Walks																			
D1030.30 Turntables																			
D1030.50 Passenger Loading Bridges																			
D1030.70 People Movers																			
D1050 Material Handling																			
D1050.10 Cranes																			
D1050.20 Hoists																			
D1050.30 Derricks																			
D1050.40 Conveyors																			
D1050.50 Baggage Handling Equipment																			
D1050.60 Chutes																			
D1050.70 Pneumatic Tube Systems																			
D1080 Operable Access Systems																			
D1080.10 Suspended Scaffolding																			
D1080.20 Rope Climbers																			
D1080.30 Elevating Platforms (Pit Lift)																			
D1080.40 Powered Scaffolding																			
D1080.50 Building Envelope Access																			

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D20	**PLUMBING**																				
D2010	**Domestic Water Distribution**																				
	D2010.10	Facility Potable-Water Storage Tanks	350	19																	
	D2010.20	Domestic Water Equipment	350	19																	
	D2010.40	Domestic Water Piping	350	19																	
	D2010.60	Plumbing Fixtures	350	19																	
	D2010.90	Domestic Water Distribution Supplementary	350	19																	
D2020	**Sanitary Drainage**																				
	D2020.10	Sanitary Sewerage Equipment	350	19																	
	D2020.30	Sanitary Sewerage Piping	350	19																	
	D2020.90	Sanitary Drainage Supplementary Components	350	19																	
D2030	**Building Support Plumbing Systems**																				
	D2030.10	Stormwater Drainage Equipment	350	19																	
	D2030.20	Stormwater Drainage Piping	350	19																	
	D2030.30	Facility Stormwater Drains	350	19																	
	D2030.60	Gray Water Systems	350	19																	
	D2030.90	Building Support Plumbing System Supplementary	350	19																	
D2050	**General Service Compressed-Air**																				
D2060	**Process Support Plumbing Systems**																				
	D2060.10	Compressed-Air Systems																			
	D2060.20	Vacuum Systems																			
	D2060.30	Gas Systems																			
	D2060.40	Chemical-Waste Systems																			
	D2060.50	Processed Water Systems																			
	D2060.90	Process Support Plumbing System Supplementary Components																			
D30	**HEATING, VENTILATION, AND AIR CONDITIONING (HVAC)**																				
D3010	**Facility Fuel Systems**																				
	D3010.10	Fuel Piping																			

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	D3010.30 Fuel Pumps																			
	D3010.50 Fuel Storage Tanks																			
D3020	**Heating Systems**																			
	D3020.10 Heat Generation	350	19																	
	D3020.30 Thermal Heat Storage	350	19																	
	D3020.70 Decentralized Heating Equipment	350	19																	
	D3020.90 Heating System Supplementary Components	350	19																	
D3030	**Cooling Systems**																			
	D3030.10 Central Cooling	350	19																	
	D3030.30 Evaporative Air-Cooling	350	19																	
	D3030.50 Thermal Cooling Storage	350	19																	
	D3030.70 Decentralized Cooling	350	19																	
	D3030.90 Cooling System Supplementary Components	350	19																	
D3050	**Facility HVAC Distribution Systems**																			
	D3050.10 Facility Hydronic Distribution	350	19																	
	D3050.30 Facility Steam Distribution	350	19																	
	D3050.50 HVAC Air Distribution	350	19																	
	D3050.90 Facility Distribution Systems Supplementary Components	350	19																	
D3060	**Ventilation**																			
	D3060.10 Supply Air	350	19																	
	D3060.20 Return Air	350	19																	
	D3060.30 Exhaust Air	350	19																	
	D3060.40 Outside Air	350	19																	
	D3060.60 Air-to-Air Energy Recovery	350	19																	
	D3060.70 HVAC Air Cleaning	350	19																	
	D3060.90 Ventilation Supplementary Components	350	19																	
D3070	**Special Purpose HVAC Systems**																			

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	D3070.10	Snow Melting																			
D40 FIRE PROTECTION																					
D4010	**Fire Suppression**																				
	D4010.10	Water-Based Fire-Suppression (MANDATORY)	350	18																	
	D4010.50	Fire-Extinguishing (MANDATORY)	350	18																	
	D4010.90	Fire Suppression Supplementary Components	350	18																	
	D4011	Spray Fireproofing	350	18																	
D4030	**Fire Protection Specialties**																				
	D4030.10	Fire Protection Cabinets	350	18																	
	D4030.30	Fire Extinguishers	350	18																	
	D4030.50	Breathing Air Replenishment Systems	350	18																	
	D4030.70	Fire Extinguisher Accessories	350	18																	
D50 ELECTRICAL																					
D5010	**Facility Power Generation**																				
	D5010.10	Packaged Generator Assemblies	350	21																	
	D5010.20	Battery Equipment																			
	D5010.30	Photovoltaic Collectors																			
	D5010.40	Fuel Cells																			
	D5010.60	Power Filtering and Conditioning																			
	D5010.70	Transfer Switches	350	21																	
	D5010.90	Facility Power Generation Supplementary Components	350	21																	
D5020	**Electrical Service and Distribution**																				
	D5020.10	Electrical Service	350	21																	
	D5020.30	Power Distribution	350	21																	
	D5020.70	Facility Grounding	350	21																	
	D5020.90	Electrical Service and Distribution Supplementary Components	350	21																	
D5030	**General Purpose Electrical Power**																				

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	D5030.10	Branch Wiring System	350	21																	
	D5030.50	Wiring Devices	350	21																	
	D5030.90	General Purpose Electrical Power Supplementary Components	350	21																	
D5040	**Lighting**																				
	D5040.10	Lighting Control (Main Panels)	350	21																	
	D5040.20	Branch Wiring for Lighting	350	21																	
	D5040.50	Lighting Fixtures	350	21																	
	D5040.90	Lighting Supplementary Components	350	21																	
D5080	**Miscellaneous Electrical Systems**																				
	D5080.10	Lightning Protection																			
	D5080.40	Cathodic Protection																			
	D5080.70	Transient Voltage Suppression																			
	D5080.90	Miscellaneous Electrical Systems Supplementary Components	350	21																	
D60	**COMMUNICATIONS**																				
D6010	**Data Communications**																				
	D6010.10	Data Communications Network Equipment (Wire Rack)	350	21																	
	D6020.20	Data Communications Hardware	350	21																	
	D6010.30	Data Communications Peripheral Data Equipment	350	21																	
	D6010.50	Data Communications Software	350	21																	
	D6010.60	Data Communication Program and Integration Services	350	21																	
D6020	**Voice Communications**																				
	D6020.10	Voice Communications Switching and Routing Equipment	350	21																	
	D6020.20	Voice Communications Terminal Equipment																			
	D6020.30	Voice Communications Messaging																			
	D6020.40	Call Accounting																			
	D6020.50	Call Management																			
D6030	**Audio-Video Communication**																				

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	D6030.10	Audio-Video Systems	350	21																	
	D6030.50	Electronic Digital Systems	350	21																	
D6060		**Distributed Communications and Monitoring**																			
	D6060.10	Distributed Audio-Video Communications Systems																			
	D6060.30	Healthcare Communications and Monitoring																			
	D6060.50	Distributed Systems																			
D6090		**Communications Supplementary Components**																			
	D6090.10	Supplementary Components																			
D70		**ELECTRONIC SAFETY AND SECURITY**																			
D7010		**Access Control and Intrusion Detection**																			
	D7010.10	Access Control																			
	D7010.50	Intrusion Detection																			
D7030		**Electronic Surveillance**																			
	D7030.10	Video Surveillance																			
	D7030.50	Electronic Personal Protection																			
D7050		**Detection and Alarm**																			
	D7050.10	Fire Detection and Alarm																			
	D7050.20	Radiation Detection and Alarm																			
	D7050.30	Fuel-Gas Detection and Alarm																			
	D7050.40	Fuel-Oil Detection and Alarm																			
	D7050.50	Refrigeration Detection and Alarm																			
	D7050.60	Water Intrusion Detection and Alarm																			
D7070		**Electronic Monitoring and Control**																			
	D7070.10	Electronic Detention Monitoring and Control																			
D7090		**Electronic Safety and Security Supplementary Components**																			
	D7090.10	Supplementary Components																			
D80		**INTEGRATED AUTOMATION**																			
D8010		**Integrated Automation Facility Controls**																			
	D8010.10	Integrated Automation Control of Equipment																			
	D8010.20	Integrated Automation Control of Conveying Equipment																			
	D8010.30	Integrated Automation Control of Fire-Suppression Systems																			

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D8010.40 Integrated Automation Control of Plumbing Systems																			
D8010.50 Integrated Automation Control of HVAC Systems																			
D8010.60 Integrated Automation Control of Electrical Systems																			
D8010.70 Integrated Automation Control of Communication Systems																			
D8010.80 Integrated Automation Control of Electronic Safety and Security Systems																			
D8010.90 Integrated Automation Supplementary Components																			
E EQUIPMENT AND FURNISHINGS																			
E10 EQUIPMENT																			
E1010 Vehicle and Pedestrian Equipment																			
E1010.10 Vehicle Servicing Equipment																			
E1010.10 Interior Parking Control Equipment																			
E1010.10 Loading Dock Equipment																			
E1010.10 Interior Pedestrian Control Equipment																			
E1030 Commercial Equipment																			
E1030.10 Mercantile and Service Equipment																			
E1030.20 Vault Equipment																			
E1030.25 Teller and Service Equipment																			
E1030.30 Refrigerated Display Equipment																			
E1030.35 Commercial Laundry and Dry Cleaning Equipment																			
E1030.40 Maintenance Equipment																			
E1030.50 Hospitality Equipment																			
E1030.55 Unit Kitchens																			
E1030.60 Photographic Processing Equipment																			
E1030.70 Postal, Packaging, and Shipping Equipment																			
E1030.75 Office Equipment																			
E1030.80 Foodservice Equipment (Grease Interceptor)																			
E1040 Institutional Equipment																			
E1040.10 Educational and Scientific Equipment																			

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	E1040.20	Healthcare Equipment																			
	E1040.40	Religious Equipment																			
	E1040.60	Security Equipment																			
	E1040.70	Detention Equipment																			
E1060	**Residential Equipment**																				
	E1060.10	Residential Appliances																			
	E1060.50	Retractable Stairs																			
	E1060.70	Residential Ceiling Fans																			
E1070	**Entertainment and Recreational Equipment**																				
	E1070.10	Theater and Stage Equipment																			
	E1070.20	Musical Equipment																			
	E1070.50	Athletic Equipment																			
	E1070.60	Recreational Equipment																			
E1090	**Other Equipment**																				
	E1090.10	Solid Waste Handling Equipment																			
	E1090.30	Agricultural Equipment																			
	E1090.40	Horticultural Equipment																			
	E1090.60	Decontamination Equipment																			
E20	**FURNISHINGS**																				
E2010	**Fixed Furnishings**																				
	E2010.10	Fixed Art																			
	E2010.20	Window Treatments																			
	E2010.30	Casework																			
	E2010.70	Fixed Multiple Seating																			
	E2010.90	Other Fixed Furnishings																			
E2050	**Movable Furnishings**																				
	E2050.10	Movable Art																			
	E2050.30	Furniture																			
	E2050.40	Accessories																			
	E2050.60	Movable Multiple Seating																			
	E2050.90	Other Movable Furnishings																			
F	**SPECIAL CONSTRUCTION AND DEMOLITION**																				

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Model Elements Utilizing CSI UniFormat™	LOD	MEA	Notes	LOD	MEA	Notes	LOD	MEA	Notes	LOD	MEA	Notes	LOD	MEA	Notes	LOD	MEA	Notes	
F10 SPECIAL CONSTRUCTION																			
F1010 Integrated Construction																			
F1010.10 Building Modules																			
F1010.50 Manufactured/Fabricated Rooms																			
F1010.70 Modular Mezzanines																			
F1020 Special Structures																			
F1020.10 Fabric Structures																			
F1020.20 Space Frames																			
F1020.30 Geodesic Structures																			
F1020.40 Manufacturer-Engineered Structures Trusses	350	07 08																	
F1020.60 Manufactured Canopies																			
F1020.65 Rammed Earth Construction																			
F1020.70 Towers																			
F1030 Special Function Construction																			
F1030.10 Sound and Vibration Control																			
F1030.30 Seismic Control																			
F1030.50 Radiation Protection																			
F1050 Special Facility Components																			
F1050.10 Pools																			
F1050.20 Interior Fountains																			
F1050.30 Interior Water Features																			
F1050.40 Aquariums																			
F1050.50 Amusement Park Structures and Equipment																			
F1050.60 Ice Rinks																			
F1050.70 Animal Containment																			
F1060 Athletic and Recreational Special Construction																			
F1060.10 Indoor Soccer Boards																			
F1060.20 Safety Netting																			
F1060.30 Arena Football Boards																			
F1060.40 Floor Sockets	350	07																	
F1060.50 Athletic and Recreational Court Walls	350	07																	

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	F1060.60	Demountable Athletic Surfaces																			
F1080	**Special Instrumentation**																				
	F1080.10	Stress Instrumentation																			
	F1080.20	Seismic Instrumentation																			
	F1080.40	Meteorological Instrumentation																			
	F1080.80	Earth Movement Monitoring																			
F20	**FACILITY REMEDIATION**																				
F2010	**Hazardous Materials Remediation**																				
	F2010.10	Transportation and Disposal of Hazardous Materials																			
	F2010.20	Asbestos Remediation																			
	F2010.30	Lead Remediation																			
	F2010.40	Polychlorinate Biphenyl Remediation																			
	F2010.50	Mold Remediation																			
F30	**DEMOLITION**																				
F3010	**Structure Demolition**																				
	F3010.10	Building Demolition																			
	F3010.30	Tower Demolition																			
	F3010.50	Bridge Demolition																			
	F3010.70	Dam Demolition																			
F3030	**Selective Demolition**																				
	F3030.10	Selective Building Demolition																			
	F3030.30	Selective Interior Demolition																			
	F3030.50	Selective Bridge Demolition																			
	F3030.70	Selective Historic Demolition																			
F3030	**Structure Moving**																				
	F3030.10	Structure Relocation																			
	F3030.30	Structure Raising																			
G SITEWORK																					
G10	**SITE PREPARATION**																				
G1010	**Site Clearing**																				

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G1010.10 Clearing and Grubbing																			
G1010.30 Tree and Shrub Removal and Trimming																			
G1010.50 Earth Stripping and Stockpiling																			
G1020 Site Elements Demolition																			
G1020.10 Utility Demolition																			
G1020.30 Infrastructure Demolition																			
G1020.50 Selective Site Demolition																			
G1030 Site Element Relocations																			
G1030.10 Utility Relocation																			
G1050 Site Remediation																			
G1050.10 Physical Decontamination																			
G1050.15 Chemical Decontamination																			
G1050.20 Thermal Decontamination																			
G1050.25 Biological Decontamination																			
G1050.30 Remediation Soil Stabilization																			
G1050.40 Site Containment																			
G1050.45 Sinkhole Remediation																			
G1050.50 Hazardous Waste Drum Handling																			
G1050.60 Contaminated Site Material Removal																			
G1050.80 Water Remediation																			
G1070 Site Earthwork																			
G1070.10 Grading																			
G1070.20 Excavation and Fill																			
G1070.30 Embankments																			
G1070.35 Erosion and Sedimentation Controls																			
G1070.40 Soil Stabilization																			
G1070.45 Rock Stabilization																			
G1070.50 Soil Reinforcement																			
G1070.55 Slope Protection																			
G1070.60 Gabions																			
G1070.65 Riprap																			
G1070.70 Wetlands																			

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G1070.80 Earth Dams																			
G1070.90 Site Soil Treatment																			
G20 SITE IMPROVEMENTS																			
G2010 Roadways																			
G2010.10 Roadway Pavement																			
G2010.20 Roadway Curbs and Gutters																			
G2010.40 Roadway Appurtenances																			
G2010.70 Roadway Lighting																			
G2010.80 Vehicle Fare Collection																			
G2020 Parking Lots																			
G2020.10 Parking Lot Pavement																			
G2020.20 Parking Lot Curbs and Gutters																			
G2020.40 Parking Lot Appurtenances																			
G2020.70 Parking Lot Lighting																			
G2020.80 Exterior Parking Control Equipment																			
G2030 Pedestrian Plazas and Walkways																			
G2030.10 Pedestrian Pavement																			
G2030.20 Pedestrian Pavement Curbs and Gutters																			
G2030.30 Exterior Steps and Ramps																			
G2030.40 Pedestrian Pavement Appurtenances																			
G2030.70 Plaza and Walkway Lighting																			
G2030.80 Exterior Pedestrian Control Equipment																			
G2040 Airfields																			
G2040.10 Aviation Pavement																			
G2040.20 Aviation Pavement Curbs and Gutters																			
G2040.40 Aviation Pavement Appurtenances																			
G2040.70 Airfield Lighting																			
G2040.80 Airfield Signaling and Control Equipment																			
G2050 Athletic, Recreational, and Playfield Areas																			
G2050.10 Athletic Areas																			
G2050.30 Recreational Areas																			
G2050.50 Playfield Areas																			

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	LOD	MEA	Notes	LOD	MEA	Notes	LOD	MEA	Notes	LOD	MEA	Notes	LOD	MEA	Notes	LOD	MEA	Notes	
G2060 Site Development																			
G2060.10 Exterior Fountains																			
G2060.20 Fences and Gates																			
G2060.25 Site Furnishings																			
G2060.30 Exterior Signage																			
G2060.35 Flagpoles																			
G2060.40 Covers and Shelters																			
G2060.45 Exterior Gas Lighting																			
G2060.50 Site Equipment																			
G2060.60 Retaining Walls																			
G2060.70 Site Bridges																			
G2060.80 Site Screening Devices																			
G2060.85 Site Specialties																			
G2080 Landscaping																			
G2080.10 Planting Irrigation																			
G2080.20 Turf and Grasses																			
G2080.30 Plants																			
G2080.50 Planting Accessories																			
G2080.70 Landscape Lighting																			
G2080.80 Landscaping Activities																			
G30 LIQUID AND GAS SITE UTILITIES																			
G3010 Water Utilities																			
G3010.10 Site Domestic Water Distribution	350	03																	
G3010.30 Site Fire Protection Water Distribution	350	03																	
G3010.50 Site Irrigation Water Distribution	350	03																	
G3020 Sanitary Sewerage Utilities																			
G3020.10 Sanitary Sewerage Utility Connection	350	03																	
G3020.20 Sanitary Sewerage Piping	350	03																	
G3020.40 Utility Septic Tanks	350	03																	
G3020.50 Sanitary Sewerage Structures	350	03																	

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Model Elements Utilizing CSI UniFormat™		LOD	MEA	Notes	LOD	MEA	Notes	LOD	MEA	Notes	LOD	MEA	Notes	LOD	MEA	Notes	LOD	MEA	Notes	
G3020.60	Sanitary Sewerage Lagoons	350	03																	
G3030	**Storm Drainage Utilities**																			
G3030.10	Storm Drainage Utility Connection	350	03																	
G3030.20	Storm Drainage Piping	350	03																	
G3030.30	Culverts	350	03																	
G3030.40	Site Storm Water Drains	350	03																	
G3030.50	Storm Drainage Pumps	350	03																	
G3030.60	Site Subdrainage	350	03																	
G3030.70	Storm Drainage Ponds and Reservoirs	350	03																	
G3050	**Site Energy Distribution**																			
G3050.10	Site Hydronic Heating Distribution																			
G3050.20	Site Steam Energy Distribution																			
G3050.40	Site Hydronic Cooling Distribution																			
G3060	**Site Fuel Distribution**																			
G3060.10	Site Gas Distribution	350	03																	
G3060.20	Site Fuel-Oil Distribution																			
G3060.30	Site Gasoline Distribution																			
G3060.40	Site Diesel Fuel Distribution																			
G3060.60	Site Aviation Fuel Distribution																			
G3090	**Liquid and Gas Site Utilities Supplementary Components**																			
G3090.10	Supplementary Components																			
G40	**ELECTRICAL SITE IMPROVEMENTS**																			
G4010	**Site Electric Distribution Systems**																			
G4010.10	Electrical Utility Services	350	03																	
G4010.20	Electric Transmission and Distribution	350	03																	
G4010.30	Electrical Substations	350	03																	
G4010.40	Electrical Transformers	350	03																	
G4010.50	Electrical Switchgear and Protection Devices	350	03																	

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G4010.70 Site Grounding	350	03																	
G4010.90 Electrical Distribution System Instrumentation and Controls	350	03																	
G4050 Site Lighting																			
G4050.10 Area Lighting																			
G4050.20 Flood Lighting																			
G4050.50 Building Illumination																			
G4050.90 Exterior Lighting Supplementary Components																			
G50 SITE COMMUNICATIONS																			
G5010 Site Communications Systems																			
G5010.10 Site Communications Structures																			
G5010.30 Site Communications Distribution	350	03																	
G5010.50 Wireless Communications Distribution	350	03																	
G90 MISCELLANEOUS SITE CONSTRUCTION																			
G9010 Tunnels																			
G9010.10 Vehicular Tunnels																			
G9010.20 Pedestrian Tunnels																			
G9010.40 Service Tunnels																			
G9010.90 Tunnel Construction Related Activities																			

§ 3.4 Model Element Table Notes

Notes:

(List by number shown on table.)

Model Element Table is an add on document to all bid package noted above and relating to all contractors scope of work. The table identifies all bid package requirements to provide Building Information Models (BIM) during the BIM coordination process. In addition, refer to BIM protocol instruction to see LOD descriptions.

Contractors are required to attend coordination meetings, submit and post to BuildingBlok and maintain the BIM schedule production process.

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Silver Lake Elementary School
Additions and Renovations
Project Building Information Modeling (BIM)
Scope Participant List January 3, 2020

Contract: A-03: Concrete
Contract: A-05: Structural Steel & Miscellaneous Metals
Contract: A-06: Carpentry & General Work
Contract: A-08: Metal Studs & Drywall
Contract: A-11: Folding Partitions
Contract: A-13: Acoustical Ceilings
Contract: A-17: Kitchen Equipment
Contract: A-18: Fire Protection
Contract: A-19: Mechanical & Plumbing
Contract: A-21: Electrical

SECTION 05 58 00

ARCHITECTURAL METAL COLUMN COVERS

PART 1 – GENERAL

1.01 SUMMARY

A. Extent of Column Covers System as shown on drawings and schedules.

B. Drawings and general provisions of the Contract Documents apply to work of this section.

1.02 SUBMITTALS

A. Submit complete shop drawings indicating quantities, dimensions, finishes, and attachment details.

B. Submit manufacturer's product data, specification, and installation instructions.

C. Submit color and finish samples to verify color, patter and finish specified. Standard sample size is 5" x 7".

1.03 QUALITY ASSURANCE

A. Manufacturer shall have a minimum of 5 years' experience in manufacturing architectural metals.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to the project site in manufacturer's original packaging, properly labeled for identification and installation purposes.

B. Store in location to avoid damage from job-site traffic, direct sunlight, moisture, stacking or other job-site contaminates.

C. Handle components to avoid denting or scratching of finished surfaces.

1.05 WARRANTY

A. Provide manufacturer's warranty against defects in material and workmanship for a period of one year.

PART 2 – PRODUCTS

2.01 MANUFACTURER

A. Acceptable products include column covers manufactured by:

1. Fry Reglet Corp.

1377 Stonefield Court

Alpharetta, GA 30004

Phone: 800-955-2343

Email: sales@fryreglet.com

2. Móz Designs, Inc.

711 Kevin Court

Oakland, CA 94621

Phone: 510-632-0853

Email: info@mozdesigns.com

3. Firestone Building Products

1001 Lund Blvd.

Anoka, MN 55330

Phone: 800-426-7737

www.firestonebpco.com

2.02 PRODUCTS

A. Basis of Design: Fry Reglet Corp., Model KS

1. Material

a. Stainless steel: Type 304 stainless steel, complying with ASTM A789.

b. Thickness: 14 ga

c. Finish: Textural Currents

2. Manufactured Parts

a. Full Round in two sections.

b. Diameter/Size: Refer to drawings for dimensions.

c. Height: Refer to drawings for dimensions.

d. Vertical joints: Soft V butt joints.

e. Options: 1) Recessed Base (RB) 8” brushed stainless.

3. At each column cover, provide solid panel at top of column cover to enclose space between

column cover and structural column.

B. Fabrication

1. Form column covers to specified dimensions and diameters as indicated on shop drawings.
2. Provide column covers in sections a maximum of 12’-0” tall per section.
3. Provide additional sections to achieve finished heights above 12’-0”.
4. Columns shall have no exposed fasteners unless specified.
5. Provide additional bracing components as necessary to stiffen substructure and insure solid mid-span bracings and connections. (By others)

PART 3 – EXECUTION

3.01 EXAMINATION

A. Examine job-site conditions for conditions that may adversely affect installation of column covers.

B. Verify dimensions of column covers prior to installation to assure compatibility with job-site conditions.

C. Verify post structure is plumb, level, and parallel prior to installation of column covers.

D. Visually examine finished surfaces to assure hat blemished or dented surfaces are not present prior to installation.

3.02 PREPARATION

A. Verify/coordinate with other trades prior to installation insofar as they are affected by column cover installation.

3.03 INSTALLATION

A. Install components in accord with manufacturer’s installation instructions and approved shop drawings.

B. Anchor components to related structures such as floors, walls and beams as indicated on approved shop drawings. Use anchors with holding strength to provide a solid installation. Use only plated, galvanized or stainless steel anchors.

3.04 CLEANING

A. Remove protective coverings and clean column covers to remove adhesives and tape residue. Test all solvents on non-exposed surfaces prior to use.

1. For painted surfaces, use a mild detergent solution on a soft cloth.
2. For stainless steel, use a glass cleaner and a soft cloth.
3. For other surfaces, contact manufacturer for proper cleaning procedures.

B. Visually inspect all exposed surfaces for scratches or blemishes.

C. Protect column covers from damage during remainder of construction period.

3.05 SCHEDULE

A. Type 1 Column Covers: Performing Arts Center Lobby, Cafeteria, Stair A, Stair F, and other locations as indicated.

B. Type 2 Column Covers: Middle School Commons; other locations as indicated.

C. Type 3 Column Covers: Vestibules, Gym Lobby, and other locations adjacent to curtainwall or storefront framing.

END OF SECTION 05 58 00

SECTION 08 06 71

DOOR HARDWARE SCHEDULE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section references specification sections relating to commercial door hardware for the following:

1. Swinging doors.
2. Sliding Doors.
3. Other doors to the extent indicated.

B. Commercial door hardware includes, but is not necessarily limited to, the following:

1. Mechanical door hardware.
2. Electromechanical and access control door hardware.
3. Electromechanical and access control door hardware power supplies, back-ups and surge protection.
4. Automatic operators.
5. Cylinders specified for doors in other sections.

C. Related Sections:

1. Division 01 Section “Cash Allowances”.
2. Division 01 Section “Product Allowances”.
3. Division 08 Section “Hollow Metal Doors and Frames”.
4. Division 08 Section “Stile and Rail Wood Doors”.
5. Division 08 Section “Integrated Door Opening Assemblies”.
6. Division 08 Section “All-Glass Entrances”.
7. Division 08 Section “Door Hardware”.
8. Division 08 Section “Access Control Hardware”.

D. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.

1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
2. ICC/IBC - International Building Code.
3. NFPA 70 - National Electrical Code.

4. NFPA 80 - Fire Doors and Windows.
5. NFPA 101 - Life Safety Code.
6. NFPA 105 - Installation of Smoke Door Assemblies.
7. State Building Codes, Local Amendments.

E. Standards: Reference Related Sections for requirements regarding compliance with applicable industry standards.

1.3 SUBMITTALS

A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.

B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."

2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.

3. Content: Include the following information:

a. Type, style, function, size, label, hand, and finish of each door hardware item.
b. Manufacturer of each item.
c. Fastenings and other pertinent information.
d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
e. Explanation of abbreviations, symbols, and codes contained in schedule.
f. Mounting locations for door hardware.
g. Door and frame sizes and materials.

4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.

C. Keying Schedule: Prepared under the supervision of the Owner, separate schedule detailing final keying instructions for locksets and cylinders in writing. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner to approve submitted keying schedule prior to the ordering of permanent cylinders.

D. Product Test Reports: Indicating compliance with cycle testing requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified independent testing agency.

E. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Submittals. The manual to include the name, address, and contact information of the manufacturers providing the hardware and their nearest service representatives. The final copies delivered after completion of the installation test to include "as built" modifications made during installation, checkout, and acceptance.

F. Warranties and Maintenance: Special warranties and maintenance agreements specified in the Related Sections.

1.4 QUALITY ASSURANCE

A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum [5] years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.

B. Installer Qualifications: Installers, trained by the primary product manufacturers, with a minimum [3] years documented experience installing both standard and electrified builders hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

C. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum [5] years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor in good standing by the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.

D. Source Limitations: Obtain each type and variety of Door Hardware specified in the Related Sections from a single source, qualified supplier unless otherwise indicated.

E. Regulatory Requirements: Comply with NFPA 70, NFPA 80, NFPA 101 and ANSI A117.1 requirements and guidelines as directed in the applicable model building code.

F. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.

B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.

C. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

1.6 COORDINATION

A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.

B. Door and Frame Preparation: Division 08 Sections (Steel, Aluminum and Wood) doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

1.7 WARRANTY

A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

1.8 MAINTENANCE SERVICE

A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

A. Refer to “PART 3 – EXECUTION” for required specification sections.

PART 3 - EXECUTION

3.1 DOOR HARDWARE SETS

A. The door hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.

B. The supplier is responsible for handing and sizing all products and providing the correct option for the appropriate door type and material where more than one is presented in the hardware sets. Quantities listed are for each pair of doors, or for each single door.

C. Products listed in the hardware sets shall be supplied by and in accordance with the requirements described in the specification section as noted for each item.

1. Section 01 21 13 – Cash Allowances.
2. Section 01 21 26 – Product Allowances.
3. Section 08 71 00 – Door Hardware.
4. Section 28 15 00 – Campus Access Control Hardware Devices.
5. Section 28 15 00 – Access Control Hardware Devices.
6. Section 28 15 10 – Multi-Family Access Control.

D. Manufacturer's Abbreviations:

1. MK - McKinney
2. MR - Markar
3. RF - Rixson
4. RO - Rockwood
5. RU - Corbin Russwin
6. IV - Ives
7. RI - RITE Door
8. NO - Norton
9. PE - Pemko
10. SU - Securitron

Hardware Sets

Set: 1.0

Doors: 129, 132B, 301B, 600

2	Pivot Set	147	626	RF	087100	
2	Electrified Int. Pivot	EM19 QC	626	RF	087100	⚡
1	Removable Mullion	CR900BKM C6 MK		RU	087100	
1	Exit Device (card reader)	ED5200(A)N 1259605ET-SELP10 C6 MK	630	RU	087100	⚡
1	Exit Device (exit only)	ED5200(A) EO M92	630	RU	087100	⚡
2	Overhead Stop	1-X36 (heavy duty concealed)	630	RF	087100	
2	Surface Closer	(P)7500 M	689	NO	087100	
2	Closer Plates	as required	689	NO	087100	
1	Threshold	274x4AFG MSES25SS		PE	087100	
1	Gasketing	by door supplier				
4	ElectroLynx Harness	QC-C (as needed)		MK	087100	⚡
1	Door Position Switch	DPS2-M/W-BK		SU	087100	⚡
1	Power Supply	AQD4-8C8R2		SU	087100	⚡
1	Wiring Diagrams	elevation and point-to-point (as required)				

Notes:
• Opening(s) normally closed and locked.
• Use of valid credential to unlock lever trim to allow entry.
• Free egress always allowed from interior. Exit device trim is fail secure.
• Coordinate required stile width with aluminum door supplier.
• Coordinate amperage for all openings and consolidate the number power supplies as able.

Set: 2.0

Doors: 100B, 501A

2	Pivot Set	147	626	RF	087100	
2	Electrified Int. Pivot	EM19 QC	626	RF	087100	⚡
1	Removable Mullion	CR900BKM C6 MK		RU	087100	
1	Exit Device (card reader)	ED5200(A)N 1259605ET-SELP10 C6 MK	630	RU	087100	⚡
1	Exit Device (exit only)	ED5200(A) EO M92	630	RU	087100	⚡
2	Overhead Stop	1-X36 (heavy duty concealed)	630	RF	087100	
2	Surface Closer	7500H M (hold open)	689	NO	087100	
2	Closer Plates	as required	689	NO	087100	
1	Threshold	274x4AFG MSES25SS		PE	087100	
1	Gasketing	by door supplier				
4	ElectroLynx Harness	QC-C (as needed)		MK	087100	⚡
1	Door Position Switch	DPS2-M/W-BK		SU	087100	⚡

1	Power Supply	AQD4-8C8R2		SU	087100
1	Wiring Diagrams	elevation and point-to-point (as required)			

Notes:
• Opening(s) normally closed and locked.
• Use of valid credential to unlock lever trim to allow entry.
• Free egress always allowed from interior. Exit device trim is fail secure.
• Coordinate required stile width with aluminum door supplier.
• Coordinate amperage for all openings and consolidate the number power supplies as able.

Set: 3.0

Doors: 102, 403

1	Pivot Set	147	626	RF	087100	
1	Electrified Int. Pivot	EM19 QC	626	RF	087100	
1	Exit Device (card reader)	ED5200(A)N 1259605ET-SELP10 C6 MK	630	RU	087100	
1	Surface Closer	(P)7500 M	689	NO	087100	
1	Closer Plates	as required	689	NO	087100	
1	Door Stop	RM861/RM855	US26D	RO	087100	
1	Threshold	274x4AFG MSES25SS		PE	087100	
1	Gasketing	by door supplier				
2	ElectroLynx Harness	QC-C (as needed)		MK	087100	
1	Power Supply	AQD4-8C8R2		SU	087100	
1	Wiring Diagrams	elevation and point-to-point (as required)				

Notes:
• Opening(s) normally closed and locked.
• Use of valid credential to unlock lever trim to allow entry.
• Free egress always allowed from interior. Exit device trim is fail secure.
• Coordinate required stile width with aluminum door supplier.
• Coordinate amperage for all openings and consolidate the number power supplies as able.

Set: 4.0

Doors: 100A, 103A, 501B

2	Pivot Set	147	626	RF	087100	
2	Electrified Int. Pivot	EM19 QC	626	RF	087100	
1	Removable Mullion	CR900BKM C6 MK		RU	087100	

2	Exit Device (exit only)	ED5200(A) EO M92	630	RU	087100	⚡
2	Overhead Stop	1-X36 (heavy duty concealed)	630	RF	087100	
2	Surface Closer	7500H M (hold open)	689	NO	087100	
2	Closer Plates	as required	689	NO	087100	
1	Threshold	274x4AFG MSES25SS		PE	087100	
1	Gasketing	by door supplier				
4	ElectroLynx Harness	QC-C (as needed)		MK	087100	⚡
2	Door Position Switch	DPS2-M/W-BK		SU	087100	⚡

Set: 5.0

Doors: 300A, 301A, 329B

4	Hinge (heavy weight)	T4A3386 NRP FT	US32D	MK	087100	
2	Hinge (heavy weight)	T4A3386 NRP QC FT	US32D	MK	087100	⚡
1	Removable Mullion	CR900BKM C6 MK		RU	087100	
1	Exit Device (card reader)	ED5200(A)N 1259605ET-SELP10 C6 MK	630	RU	087100	⚡
1	Exit Device (exit only)	ED5200(A) EO M92	630	RU	087100	⚡
2	Overhead Stop	1-X36 (heavy duty concealed)	630	RF	087100	
2	Surface Closer	(P)7500 M	689	NO	087100	
2	Kick Plate	K1050 10" CSK BEV	US32D	RO	087100	
1	Threshold	274x4AFG MSES25SS		PE	087100	
1	Gasketing	29313CPK TKSP8		PE	087100	
2	Door Bottom	217AV TKSP8		PE	087100	
1	Astragal	29324CNB TKSP8		PE	087100	
4	ElectroLynx Harness	QC-C (as needed)		MK	087100	⚡
1	Door Position Switch	DPS2-M/W-BK		SU	087100	⚡
1	Power Supply	AQD4-8C8R2		SU	087100	⚡
1	Wiring Diagrams	elevation and point-to-point (as required)				

Notes:
- Opening(s) normally closed and locked.
- Use of valid credential to unlock lever trim to allow entry.
- Free egress always allowed from interior. Exit device trim is fail secure.
- Coordinate required stile width with aluminum door supplier.
- Coordinate amperage for all openings and consolidate the number power supplies as able.

Set: 6.0

Doors: 329A

5	Hinge (heavy weight)	T4A3386 NRP FT	US32D	MK	087100	
1	Hinge (heavy weight)	T4A3386 NRP QC FT	US32D	MK	087100	⚡
1	Removable Mullion	CR900BKM C6 MK		RU	087100	
1	Exit Device (card reader)	ED5200(A)N 1259605ET-SELP10 C6 MK	630	RU	087100	⚡
1	Exit Device (exit only)	ED5200(A) EO M92	630	RU	087100	⚡
2	Overhead Stop	1-X36 (heavy duty concealed)	630	RF	087100	
2	Surface Closer	7500H M (hold open)	689	NO	087100	
2	Kick Plate	K1050 10" CSK BEV	US32D	RO	087100	
1	Threshold	274x4AFG MSES25SS		PE	087100	
1	Gasketing	29313CPK TKSP8		PE	087100	
2	Door Bottom	217AV TKSP8		PE	087100	
1	Astragal	29324CNB TKSP8		PE	087100	
2	ElectroLynx Harness	QC-C (as needed)		MK	087100	⚡
2	Door Position Switch	DPS2-M/W-BK		SU	087100	⚡
1	Power Supply	AQD4-8C8R2		SU	087100	⚡
1	Wiring Diagrams	elevation and point-to-point (as required)				

Notes:
• Opening(s) normally closed and locked.
• Use of valid credential to unlock lever trim to allow entry.
• Free egress always allowed from interior. Exit device trim is fail secure.
• Coordinate required stile width with aluminum door supplier.
• Coordinate amperage for all openings and consolidate the number power supplies as able.

Set: 7.0

Doors: 119, 204, 213, 309, 323

2	Hinge (heavy weight)	T4A3386 NRP FT	US32D	MK	087100	
1	Hinge (heavy weight)	T4A3386 NRP QC FT	US32D	MK	087100	⚡
1	Exit Device (card reader)	ED5200(A)N 1259605ET-SELP10 C6 MK	630	RU	087100	⚡
1	Surface Closer	(P)7500 M	689	NO	087100	
1	Kick Plate	K1050 10" CSK BEV	US32D	RO	087100	
1	Door Stop	RM861/RM855	US26D	RO	087100	
1	Threshold	274x4AFG MSES25SS		PE	087100	
1	Gasketing	29313CPK TKSP8		PE	087100	
1	Door Bottom	217AV TKSP8		PE	087100	

2	ElectroLynx Harness	QC-C (as needed)		MK 087100	⚡
1	Power Supply	AQD4-8C8R2		SU 087100	⚡
1	Wiring Diagrams	elevation and point-to-point (as required)			

Notes:
• Opening(s) normally closed and locked.
• Use of valid credential to unlock lever trim to allow entry.
• Free egress always allowed from interior. Exit device trim is fail secure.
• Coordinate amperage for all openings and consolidate the number power supplies as able.

Set: 8.0

Doors: 110A, 120, 123C, 427B

2	Hinge	TA2314 NRP FT	US32D	MK 087100	
1	Hinge	TA2314 NRP QC FT	US32D	MK 087100	⚡
1	Access Control Mort Lock	ML20606 x SELP10-SEC 125X C6 MK	626	RU 087100	⚡
1	Surface Closer	(P)7500 M	689	NO 087100	
1	Kick Plate	K1050 10" CSK BEV	US32D	RO 087100	
1	Door Stop	RM861/RM855	US26D	RO 087100	
1	Threshold	274x4AFG MSES25SS		PE 087100	
1	Gasketing	29313CPK TKSP8		PE 087100	
1	Door Bottom	217AV TKSP8		PE 087100	
2	ElectroLynx Harness	QC-C (as needed)		MK 087100	⚡
1	Power Supply	AQD4-8C8R2		SU 087100	⚡
1	Wiring Diagrams	elevation and point-to-point (as required)			

Notes:
• Opening(s) normally closed and locked.
• Use of valid credential to unlock lever trim to allow entry.
• Lockset is fail-secure; will remain locked without power.
• Free egress always allowed from interior.
• Coordinate amperage for all openings and consolidate the number power supplies as able.

Set: 9.0

Doors: 220B, 223B

2	Hinge	TA2314 NRP FT	US32D	MK 087100	
1	Hinge	TA2314 NRP QC FT	US32D	MK 087100	⚡

1	Access Control Mort Lock	ML20606 x SELP10-SEC 125X C6 MK	626	RU	087100
1	Overhead Stop	1-X36 (heavy duty concealed)	630	RF	087100
1	Surface Closer	(P)7500 M	689	NO	087100
1	Kick Plate	K1050 10" CSK BEV	US32D	RO	087100
1	Threshold	274x4AFG MSES25SS		PE	087100
1	Gasketing	29313CPK TKSP8		PE	087100
1	Door Bottom	217AV TKSP8		PE	087100
2	ElectroLynx Harness	QC-C (as needed)		MK	087100
1	Power Supply	AQD4-8C8R2		SU	087100
1	Wiring Diagrams	elevation and point-to-point (as required)			

Notes:
• Opening(s) normally closed and locked.
• Use of valid credential to unlock lever trim to allow entry.
• Lockset is fail-secure; will remain locked without power.
• Free egress always allowed from interior.
• Coordinate amperage for all openings and consolidate the number power supplies as able.

Set: 10.0

Doors: 101A

2	Pivot Set	147	626	RF	087100
2	Electrified Int. Pivot	EM19 QC	626	RF	087100
1	Removable Mullion	CR900BKM C6 MK		RU	087100
1	Exit Device (card reader)	ED5200(A)N 1259605ET-SELP10 C6 MK	630	RU	087100
1	Exit Device (exit only)	ED5200(A) EO M92	630	RU	087100
2	Overhead Stop	1-X36 (heavy duty concealed)	630	RF	087100
2	Surface Closer	7500H M (hold open)	689	NO	087100
2	Closer Plates	as required	689	NO	087100
4	ElectroLynx Harness	QC-C (as needed)		MK	087100
1	Door Position Switch	DPS2-M/W-BK		SU	087100
1	Power Supply	AQD4-8C8R2		SU	087100
1	Wiring Diagrams	elevation and point-to-point (as required)			

Notes:
• Opening(s) normally closed and locked.
• Use of valid credential to unlock lever trim to allow entry.

• Free egress always allowed from interior. Exit device trim is fail secure.
• Coordinate required stile width with aluminum door supplier.
• Coordinate amperage for all openings and consolidate the number power supplies as able.

Set: 11.0

Doors: 101B

2	Pivot Set	147	626	RF	087100
2	Electrified Int. Pivot	EM19 QC	626	RF	087100
1	Removable Mullion	CR900BKM C6 MK		RU	087100
2	Exit Device (exit only)	ED5200(A) EO M92	630	RU	087100
2	Overhead Stop	1-X36 (heavy duty concealed)	630	RF	087100
2	Surface Closer	7500H M (hold open)	689	NO	087100
2	Closer Plates	as required	689	NO	087100
4	ElectroLynx Harness	QC-C (as needed)		MK	087100
1	Door Position Switch	DPS2-M/W-BK		SU	087100

Set: 12.0

Doors: 502A, 502B

2	Pivot Set	147	626	RF	087100
2	Intermediate Pivot	M19	626	RF	087100
4	Door Pull	RM3311-50	US32D	RO	087100
2	Overhead Stop	1-X36 (heavy duty concealed)	630	RF	087100
2	Surface Closer	7500H M (hold open)	689	NO	087100
2	Closer Plates	as required	689	NO	087100
2	Sign	RM1110H (PUSH)	US32D	RO	087100
2	Sign	RM1110L (PULL)	US32D	RO	087100

Set: 13.0

Doors: 104A, 104C, 104D, 502C

6	Hinge (heavy weight)	T4A3786 FT	US26D	MK	087100
1	Removable Mullion	CR900BKM C6 MK		RU	087100
2	Exit Device (classroom security)	ED5202(A) 125955ET C6 MK	630	RU	087100
2	Surface Closer	(P)7500 M	689	NO	087100
2	Kick Plate	K1050 10" CSK BEV	US32D	RO	087100
2	Door Stop	RM861/RM855	US26D	RO	087100
1	Gasketing	S44BL (rated openings)		PE	087100
1	Astragal	29324CNB TKSP8 (rated openings)		PE	087100

2	Silencer	608 (non-rated openings)		RO	087100

Set: 14.0

Doors: 132A

3	Hinge (heavy weight)	T4A3786 FT	US26D	MK	087100
1	Removable Mullion	CR900BKM C6 MK		RU	087100
1	Exit Device (classroom security)	ED5202(A) 125955ET C6 MK	630	RU	087100
1	Surface Closer	(P)7500 M	689	NO	087100
1	Kick Plate	K1050 10" CSK BEV	US32D	RO	087100
1	Door Stop	RM861/RM855	US26D	RO	087100
1	Gasketing	S44BL (rated openings)		PE	087100
3	Silencer	608 (non-rated openings)		RO	087100

Set: 15.0

Doors: 225, 226, 429, 620

2	Continuous Hinge	FM200		MR	087100	
2	Recessed Exit	D3676	US32D	RI	081700	
2	Trim	D3080-NJ	US32D	RI	081700	
2	Surface Closer	D-DC-351P9	EN	RI	081700	
2	Electromagnetic Holder	D-MDH-310	689	RI	081700	⚡

Set: 16.0

Doors: 104B

3	Hinge (heavy weight)	T4A3786 FT	US26D	MK	087100
1	Exit Device (passage)	ED5200(A) 125910ET	630	RU	087100
1	Surface Closer	(P)7500 M	689	NO	087100
1	Kick Plate	K1050 10" CSK BEV	US32D	RO	087100
1	Door Stop	RM861/RM855	US26D	RO	087100
1	Gasketing	S44BL (rated openings)		PE	087100
3	Silencer	608 (non-rated openings)		RO	087100

Set: 17.0

Doors: 334

5	Hinge	TA2714 FT	US26D	MK	087100	
1	Hinge	TA2714 QC FT	US26D	MK	087100	⚡
2	Flush Bolt	555/557	US26D	RO	087100	

1	Dust Proof Strike	570	US26D	RO	087100	
1	Access Control Mort Lock	ML20606 x SELP10-SEC 125X C6 MK	626	RU	087100	⚡
2	Overhead Stop	10-X36 (surface)	630	RF	087100	
2	Kick Plate	K1050 10" CSK BEV	US32D	RO	087100	
2	Silencer	608		RO	087100	
2	ElectroLynx Harness	QC-C (as needed)		MK	087100	⚡
1	Power Supply	AQD4-8C8R2		SU	087100	⚡
1	Wiring Diagrams	elevation and point-to-point (as required)				

Notes:
• Opening(s) normally closed and locked.
• Use of valid credential to unlock lever trim to allow entry.
• Lockset is fail-secure; will remain locked without power.
• Free egress always allowed from interior.
• Coordinate amperage for all openings and consolidate the number power supplies as able.

Set: 18.0

Doors: 131, 424, 604A

2	Hinge	TA2714 FT	US26D	MK	087100	
1	Hinge	TA2714 QC FT	US26D	MK	087100	⚡
1	Access Control Mort Lock	ML20606 x SELP10-SEC 125X C6 MK	626	RU	087100	⚡
1	Surface Closer	(P)7500 M	689	NO	087100	
1	Kick Plate	K1050 10" CSK BEV	US32D	RO	087100	
1	Door Stop	RM861/RM855	US26D	RO	087100	
1	Gasketing	S44BL (rated openings)		PE	087100	
3	Silencer	608 (non-rated openings)		RO	087100	
1	ElectroLynx Harness	QC-C (as needed)		MK	087100	⚡
1	Power Supply	AQD4-8C8R2		SU	087100	⚡
1	Wiring Diagrams	elevation and point-to-point (as required)				

Notes:
• Opening(s) normally closed and locked.
• Use of valid credential to unlock lever trim to allow entry.
• Lockset is fail-secure; will remain locked without power.
• Free egress always allowed from interior.
• Coordinate amperage for all openings and consolidate the number power supplies as able.

Set: 19.0

Doors: 103B, 109A, 109B

6 Hinge	TA2714 FT	US26D	MK	087100
1 Flush Bolt (set)	2845/2945 (combination)	US26D	RO	087100
2 Dust Proof Strike	570	US26D	RO	087100
1 Storeroom Lock	ML2057 125X C6 MK	626	RU	087100
1 Coordinator	2600 TORX	Black	RO	087100
2 Surface Closer	(P)7500 M	689	NO	087100
2 Kick Plate	K1050 10" CSK BEV	US32D	RO	087100
2 Door Stop	RM861/RM855	US26D	RO	087100
1 Gasketing	S44BL (rated openings)		PE	087100
1 Astragal	29324CNB TKSP8 (rated openings)		PE	087100
2 Silencer	608 (non-rated openings)		RO	087100

Set: 20.0

Doors: 108, 112, 125, 128, 415

3 Hinge	TA2714 FT	US26D	MK	087100
1 Storeroom Lock	ML2057 125X C6 MK	626	RU	087100
1 Kick Plate	K1050 10" CSK BEV	US32D	RO	087100
1 Door Stop	RM861/RM855	US26D	RO	087100
3 Silencer	608		RO	087100

Set: 21.0

Doors: 205, 311, 321, 406

3 Hinge	TA2714 FT	US26D	MK	087100
1 Storeroom Lock	ML2057 125X C6 MK	626	RU	087100
1 Overhead Stop	10-X36 (surface)	630	RF	087100
1 Kick Plate	K1050 10" CSK BEV	US32D	RO	087100
3 Silencer	608		RO	087100

Set: 22.0

Doors: 103C, 122A, 123B, 134B, 135A, 206, 207, 215, 216, 219, 220A, 221, 222, 223A, 224, 304, 305, 308, 310, 317, 322, 324, 327, 328, 330, 331, 335, 336, 404, 405, 412A, 412B, 416B, 426, 427A, 428, 601, 604C, 607B, 614

3 Hinge	TA2714 FT	US26D	MK	087100
1 Storeroom Lock	ML2057 125X C6 MK	626	RU	087100

1	Surface Closer	(P)7500 M	689	NO	087100
1	Kick Plate	K1050 10" CSK BEV	US32D	RO	087100
1	Door Stop	RM861/RM855	US26D	RO	087100
1	Gasketing	S44BL (rated openings)		PE	087100
3	Silencer	608 (non-rated openings)		RO	087100

Set: 23.0

Doors: 118A, 123A, 133, 302, 303, 417, 419, 420, 421, 422, 504, 602A, 602B, 606

3	Hinge	TA2714 FT	US26D	MK	087100
1	Office Lock	ML2051 125X C6 MK	626	RU	087100
1	Kick Plate	K1050 10" CSK BEV	US32D	RO	087100
1	Door Stop	RM861/RM855	US26D	RO	087100
3	Silencer	608		RO	087100

Set: 24.0

Doors: 130

6	Hinge	TA2714 FT	US26D	MK	087100
2	Flush Bolt	555/557	US26D	RO	087100
1	Dust Proof Strike	570	US26D	RO	087100
1	Classroom Lock	ML2055 125X C6 MK	626	RU	087100
2	Kick Plate	K1050 10" CSK BEV	US32D	RO	087100
2	Door Stop	RM861/RM855	US26D	RO	087100
2	Silencer	608		RO	087100

Set: 25.0

Doors: 106, 107, 110B, 117, 121A, 134A, 135B, 208B, 217B, 306B, 326B, 332A, 332B, 401B, 505, 607A, 608, 610, 612

3	Hinge	TA2714 FT	US26D	MK	087100
1	Classroom Lock	ML2055 125X C6 MK	626	RU	087100
1	Kick Plate	K1050 10" CSK BEV	US32D	RO	087100
1	Door Stop	RM861/RM855	US26D	RO	087100
3	Silencer	608		RO	087100

Set: 26.0

Doors: 413, 414, 423, 425

3	Hinge	TA2714 FT	US26D	MK	087100

1	Classroom Lock	ML2055 125X C6 MK	626	RU 087100
1	Overhead Stop	10-X36 (surface)	630	RF 087100
1	Kick Plate	K1050 10" CSK BEV	US32D	RO 087100
3	Silencer	608		RO 087100

Set: 27.0

Doors: 503

6	Hinge	TA2714 FT	US26D	MK 087100
2	Flush Bolt	555/557	US26D	RO 087100
1	Dust Proof Strike	570	US26D	RO 087100
1	Classroom Intruder Lock	ML2052 125X C6 MK	626	RU 087100
2	Overhead Stop	10-X36 (surface)	630	RF 087100
2	Kick Plate	K1050 10" CSK BEV	US32D	RO 087100
2	Silencer	608 (non-rated openings)		RO 087100

Set: 28.0

Doors: 208A, 209, 217A, 218, 306A, 307, 315, 316, 325, 326A, 401A, 402, 410, 411, 416A

3	Hinge	TA2714 FT	US26D	MK 087100
1	Classroom Intruder Lock	ML2052 125X C6 MK	626	RU 087100
1	Kick Plate	K1050 10" CSK BEV	US32D	RO 087100
1	Door Stop	RM861/RM855	US26D	RO 087100
3	Silencer	608		RO 087100

Set: 29.0

Doors: 114, 203, 212, 312, 320, 333, 407, 506, 507, 609, 613

3	Hinge	TA2714 FT	US26D	MK 087100
1	Privacy Lock	ML2020 125X M19V	626	RU 087100
1	Kick Plate	K1050 10" CSK BEV	US32D	RO 087100
1	Door Stop	RM861/RM855	US26D	RO 087100
3	Silencer	608		RO 087100
1	Coat Hook	RM802	US26D	RO 087100

Set: 30.0

Doors: 124, 214

3	Hinge	TA2714 FT	US26D	MK 087100
1	Privacy Lock	ML2020 125X M19V	626	RU 087100

1	Overhead Stop	10-X36 (surface)	630	RF	087100
1	Kick Plate	K1050 10" CSK BEV	US32D	RO	087100
3	Silencer	608		RO	087100
1	Coat Hook	RM802	US26D	RO	087100

Set: 31.0

Doors: 113, 418, 603, 604B, 605, 611, 615A, 616

3	Hinge	TA2714 FT	US26D	MK	087100
1	Passage Latch	ML2010 125X	626	RU	087100
1	Kick Plate	K1050 10" CSK BEV	US32D	RO	087100
1	Door Stop	RM861/RM855	US26D	RO	087100
3	Silencer	608		RO	087100

Set: 32.0

Doors: 105B, 105C, 105D, 105E, 105F

2	Continuous Hinge	FM200		MR	087100
2	Cabinet Latch	CL12	626	IV	087100
2	Flush Pull	95A	US26D	RO	087100

Set: 33.0

Doors: 105A, 110C, 110D, 110E, 110F, 110G, 110H, 121B, GT-E

1	All Hardware	by others

END OF SECTION 08 06 71

SECTION 08 11 13

HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Standard and custom hollow metal doors and frames.
2. Steel sidelight, borrowed lite and transom frames.
3. Louvers installed in hollow metal doors.
4. Light frames and glazing installed in hollow metal doors.

B. Related Sections:

1. Division 04 Section "Unit Masonry" for embedding anchors for hollow metal work into masonry construction.
2. Division 08 Section “Integrated Door Opening Assemblies”.
3. Division 08 Section "Glazing" for glass view panels in hollow metal doors.
4. Division 08 Section "Door Hardware".
5. Division 08 Section "Access Control Hardware".
6. Division 09 Sections "Exterior Painting" and "Interior Painting" for field painting hollow metal doors and frames.

C. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.

1. ANSI/SDI A250.8 - Recommended Specifications for Standard Steel Doors and Frames.
2. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames, Frames Anchors and Hardware Reinforcing.
3. ANSI/SDI A250.6 - Recommended Practice for Hardware Reinforcing on Standard Steel Doors and Frames.
4. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames.
5. ANSI/SDI A250.11 - Recommended Erection Instructions for Steel Frames.
6. ASTM A1008 - Standard Specification for Steel Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability.
7. ASTM A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
8. ASTM A924 - Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.

9. ASTM C 1363 - Standard Test Method for Thermal Performance of Building Assemblies by Means of a Hot Box Apparatus.
10. ANSI/BHMA A156.115 - Hardware Preparation in Steel Doors and Frames.
11. ANSI/SDI 122 - Installation and Troubleshooting Guide for Standard Steel Doors and Frames.
12. ANSI/NFPA 80 - Standard for Fire Doors and Fire Windows; National Fire Protection Association.
13. ANSI/NFPA 105: Standard for the Installation of Smoke Door Assemblies.
14. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies; National Fire Protection Association.
15. UL 10C - Positive Pressure Fire Tests of Door Assemblies.
16. UL 1784 - Standard for Air Leakage Tests of Door Assemblies.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material descriptions, core descriptions, hardware reinforcements, profiles, anchors, fire-resistance rating, and finishes.

B. Door hardware supplier is to furnish templates, template reference number and/or physical hardware to the steel door and frame supplier in order to prepare the doors and frames to receive the finish hardware items.

C. Shop Drawings: Include the following:

1. Elevations of each door design.
2. Details of doors, including vertical and horizontal edge details and metal thicknesses.
3. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
4. Locations of reinforcement and preparations for hardware.
5. Details of anchorages, joints, field splices, and connections.
6. Details of accessories.
7. Details of moldings, removable stops, and glazing.
8. Details of conduit and preparations for power, signal, and control systems.

D. Samples for Verification:

1. Samples are only required by request of the architect and for manufacturers that are not current members of the Steel Door Institute.

1.4 QUALITY ASSURANCE

A. Source Limitations: Obtain hollow metal doors and frames through one source from a single manufacturer wherever possible.

B. Quality Standard: In addition to requirements specified, furnish SDI-Certified manufacturer products that comply with ANSI/SDI A250.8, latest edition, "Recommended Specifications for Standard Steel Doors and Frames".

C. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to UL10C (neutral pressure at 40" above sill) or UL 10C.

1. Oversize Fire-Rated Door Assemblies Construction: For units exceeding sizes of tested assemblies, attach construction label certifying doors are built to standard construction requirements for tested and labeled fire rated door assemblies except for size.
2. Temperature-Rise Limit: Where indicated and at vertical exit enclosures (stairwell openings) and exit passageways, provide doors that have a maximum transmitted temperature end point of not more than 450 deg F (250 deg C) above ambient after 30 minutes of standard fire-test exposure.
3. Smoke Control Door Assemblies: Comply with NFPA 105.

a. Smoke "S" Label: Doors to bear "S" label, and include smoke and draft control gasketing applied to frame and on meeting stiles of pair doors.

D. Fire-Rated, Borrowed-Light Frame Assemblies: Assemblies complying with NFPA 80 that are listed and labeled, by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire-protection ratings indicated, based on testing according to NFPA 257. Provide labeled glazing material.

E. Pre-Submittal Conference: Conduct conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier, Installer, and Contractor to review proper methods and procedures for installing hollow metal doors and frames and to verify installation of electrical knockout boxes and conduit at frames with electrified or access control hardware.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver hollow metal work palletized, wrapped, or crated to provide protection during transit and Project site storage. Do not use non-vented plastic.

B. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.

C. Store hollow metal work under cover at Project site. Place in stacks of five units maximum in a vertical position with heads up, spaced by blocking, on minimum 4-inch high wood blocking. Do not store in a manner that traps excess humidity.

1. Provide minimum 1/4-inch space between each stacked door to permit air circulation. Door and frames to be stacked in a vertical upright position.

1.6 PROJECT CONDITIONS

A. Field Measurements: Verify actual dimensions of openings by field measurements before fabrication.

1.7 COORDINATION

A. Coordinate installation of anchorages for hollow metal frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.

1.8 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace doors that fail in materials or workmanship within specified warranty period.

B. Warranty includes installation and finishing that may be required due to repair or replacement of defective doors.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide steel doors and frames from a SDI Certified manufacturer:

1. CECO Door Products (C).
2. Curries Company (CU).
3. Pioneer Industries (PI).
4. Steelcraft (S).

2.2 MATERIALS

A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.

B. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B; with minimum G60 (Z180) or A60 (ZF180) metallic coating.

C. Frame Anchors: ASTM A 653/A 653M, Commercial Steel (CS), Commercial Steel (CS), Type B; with minimum G60 (Z180) or A60 (ZF180) metallic coating.

2.3 HOLLOW METAL DOORS

A. General: Provide 1-3/4 inch doors of design indicated, not less than thickness indicated; fabricated with smooth surfaces, without visible joints or seams on exposed faces unless otherwise indicated. Comply with ANSI/SDI A250.8 and ANSI/NAAMM HMMA 867.

B. Interior Doors: Face sheets fabricated of commercial quality cold rolled steel that complies with ASTM A 1008/A 1008M. Provide doors complying with requirements indicated below by referencing ANSI/SDI A250.8 for level and model and ANSI/SDI A250.4 for physical performance level:

1. Design: Flush panel.

a. Fire Door Core: As required to provide fire-protection and temperature-rise ratings indicated.

2. Level/Model: Level 2 and Physical Performance Level B (Heavy Duty), Minimum 18 gauge (0.042-inch - 1.0-mm) thick steel, Model 2.
3. Top and Bottom Edges: Reinforce tops and bottoms of doors with a continuous steel channel not less than 16 gauge, extending the full width of the door and welded to the face sheet.
4. Hinge Reinforcement: Minimum 7 gauge (3/16") plate 1-1/4" x 9" or minimum 14 gauge continuous channel with pierced holes, drilled and tapped.
5. Hardware Reinforcements: Fabricate according to ANSI/SDI A250.6 with reinforcing plates from same material as door face sheets.

C. Manufacturers Basis of Design:

1. Curries Company (CU) - Polystyrene Core - 707 Series.

2.4 HOLLOW METAL FRAMES

A. General: Comply with ANSI/SDI A250.8 and with details indicated for type and profile.

B. Interior Frames: Fabricated from cold-rolled steel sheet that complies with ASTM A 1008/A 1008M.

1. Fabricate frames with mitered or coped corners. Profile as indicated on drawings.
2. Frames: Minimum 16 gauge (0.053-inch -1.3-mm) thick steel sheet.
3. Manufacturers Basis of Design:

a. Curries Company (CU) - CM Series.
b. Curries Company (CU) - M Series.

C. Fire rated frames: Fabricate frames in accordance with NFPA 80, listed and labeled by a qualified testing agency, for fire-protection ratings indicated.

D. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 Table 4 with reinforcement plates from same material as frames.

2.5 FRAME ANCHORS

A. Jamb Anchors:

1. Masonry Type: Adjustable strap-and-stirrup or T-shaped anchors to suit frame size, formed from A60 metallic coated material, not less than 0.042 inch thick, with corrugated or perforated straps not less than 2 inches wide by 10 inches long; or wire anchors not less than 0.177 inch thick.
2. Stud Wall Type: Designed to engage stud and not less than 0.042 inch thick.
3. Compression Type for Drywall Slip-on (Knock-Down) Frames: Adjustable compression anchors.

B. Floor Anchors: Floor anchors to be provided at each jamb, formed from A60 metallic coated material, not less than 0.042 inches thick.

C. Mortar Guards: Formed from same material as frames, not less than 0.016 inches thick.

2.6 ACCESSORIES

A. Mullions and Transom Bars: Join to adjacent members by welding or rigid mechanical anchors.

B. Grout Guards: Formed from same material as frames, not less than 0.016 inches thick.

2.7 FABRICATION

A. Fabricate hollow metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for thickness of metal. Where practical, fit and assemble units in manufacturer's plant. When shipping limitations so dictate, frames for large openings are to be fabricated in sections for splicing or splining in the field by others.

B. Tolerances: Fabricate hollow metal work to tolerances indicated in ANSI/SDI A250.8.

C. Hollow Metal Doors:

1. Exterior Doors: Provide optional weep-hole openings in bottom of exterior doors to permit moisture to escape where specified.
2. Glazed Lites: Factory cut openings in doors with applied trim or kits to fit. Factory install glazing where indicated.
3. Astragals: Provide overlapping astragals as noted in door hardware sets in Division 08 Section "Door Hardware" on one leaf of pairs of doors where required by NFPA 80 for fire-performance rating or where indicated. Extend minimum 3/4 inch beyond edge of door on which astragal is mounted.
4. Continuous Hinge Reinforcement: Provide welded continuous 12 gauge strap for continuous hinges specified in hardware sets in Division 08 Section "Door Hardware".

D. Hollow Metal Frames:

1. Shipping Limitations: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.
2. Welded Frames: Weld flush face joints continuously; grind, fill, dress, and make smooth, flush, and invisible.

    a. Welded frames are to be provided with two steel spreaders temporarily attached to the bottom of both jambs to serve as a brace during shipping and handling. Spreader bars are for bracing only and are not to be used to size the frame opening.

3. Sidelight and Transom Bar Frames: Provide closed tubular members with no visible face seams or joints, fabricated from same material as door frame. Fasten members at crossings and to jambs by butt welding.
4. High Frequency Hinge Reinforcement: Provide high frequency hinge reinforcements at door openings 48-inches and wider with mortise butt type hinges at top hinge locations.

5. Continuous Hinge Reinforcement: Provide welded continuous 12 gauge straps for continuous hinges specified in hardware sets in Division 08 Section "Door Hardware".
6. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated for removable stops, provide security screws at exterior locations.
7. Mortar Guards: Provide guard boxes at back of hardware mortises in frames at all hinges and strike preps regardless of grouting requirements.
8. Floor Anchors: Weld anchors to bottom of jambs and mullions with at least four spot welds per anchor.
9. Jamb Anchors: Provide number and spacing of anchors as follows:

    a. Masonry Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches o.c. and as follows:

        1) Two anchors per jamb up to 60 inches high.
        2) Three anchors per jamb from 60 to 90 inches high.
        3) Four anchors per jamb from 90 to 120 inches high.
        4) Four anchors per jamb plus 1 additional anchor per jamb for each 24 inches or fraction thereof above 120 inches high.

    b. Stud Wall Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches o.c. and as follows:

        1) Three anchors per jamb up to 60 inches high.
        2) Four anchors per jamb from 60 to 90 inches high.
        3) Five anchors per jamb from 90 to 96 inches high.
        4) Five anchors per jamb plus 1 additional anchor per jamb for each 24 inches or fraction thereof above 96 inches high.
        5) Two anchors per head for frames above 42 inches wide and mounted in metal stud partitions.
10. Door Silencers: Except on weatherstripped or gasketed doors, drill stops to receive door silencers. Silencers to be supplied by frame manufacturer regardless if specified in Division 08 Section "Door Hardware".

E. Hardware Preparation: Factory prepare hollow metal work to receive template mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to the Door Hardware Schedule and templates furnished as specified in Division 08 Section "Door Hardware."

1. Locate hardware as indicated, or if not indicated, according to ANSI/SDI A250.8.
2. Reinforce doors and frames to receive non-template, mortised and surface mounted door hardware.
3. Comply with applicable requirements in ANSI/SDI A250.6 and ANSI/DHI A115 Series specifications for preparation of hollow metal work for hardware.
4. Coordinate locations of conduit and wiring boxes for electrical connections with Division 26 Sections.

2.8 STEEL FINISHES

A. Prime Finishes: Doors and frames to be cleaned, and chemically treated to insure maximum finish paint adhesion. Surfaces of the door and frame exposed to view to receive a factory applied coat of rust inhibiting shop primer.

1. Shop Primer: Manufacturer's standard, fast-curing, lead and chromate free primer complying with ANSI/SDI A250.10 acceptance criteria; recommended by primer manufacturer for substrate; and compatible with substrate and field-applied coatings.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. General Contractor to verify the accuracy of dimensions given to the steel door and frame manufacturer for existing openings or existing frames (strike height, hinge spacing, hinge back set, etc.).

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Remove welded in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces.

B. Prior to installation, adjust and securely brace welded hollow metal frames for square, level, twist, and plumb condition.

C. Tolerances shall comply with SDI-117 "Manufacturing Tolerances Standard Steel Doors and Frames."

D. Drill and tap doors and frames to receive non-template, mortised, and surface-mounted door hardware.

3.3 INSTALLATION

A. General: Install hollow metal work plumb, rigid, properly aligned, and securely fastened in place; comply with Drawings and manufacturer's written instructions.

B. Hollow Metal Frames: Install hollow metal frames of size and profile indicated. Comply with ANSI/SDI A250.11 and NFPA 80 at fire rated openings.

1. Set frames accurately in position, plumbed, leveled, aligned, and braced securely until permanent anchors are set. After wall construction is complete and frames properly set and secured, remove temporary braces, leaving surfaces smooth and undamaged. Shim as necessary to comply with installation tolerances.
2. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with post-installed expansion anchors.
3. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with mortar.

4. Grout Requirements: Do not grout head of frames unless reinforcing has been installed in head of frame. Do not grout vertical or horizontal closed mullion members.

C. Hollow Metal Doors: Fit hollow metal doors accurately in frames, within clearances specified below. Shim as necessary.

1. Non-Fire-Rated Standard Steel Doors:

a. Jambs and Head: 1/8 inch plus or minus 1/16 inch.
b. Between Edges of Pairs of Doors: 1/8 inch plus or minus 1/16 inch.
c. Between Bottom of Door and Top of Threshold: Maximum 3/8 inch.
d. Between Bottom of Door and Top of Finish Floor (No Threshold): Maximum 3/4 inch.

2. Fire-Rated Doors: Install doors with clearances according to NFPA 80.

D. Field Glazing: Comply with installation requirements in Division 08 Section "Glazing" and with hollow metal manufacturer's written instructions.

3.4 ADJUSTING AND CLEANING

A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including hollow metal work that is warped, bowed, or otherwise unacceptable.

B. Remove grout and other bonding material from hollow metal work immediately after installation.

C. Prime-Coat and Painted Finish Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat, or painted finishes, and apply touchup of compatible air drying, rust-inhibitive primer, zinc rich primer (exterior and galvanized openings) or finish paint.

END OF SECTION 08 11 13

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SECTION 08 17 00

INTEGRATED DOOR OPENING ASSEMBLIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Integrated door opening assemblies including metal frame, integrated door system with operating hardware, and associated door hardware as specified in this section.
2. Factory fitting and hardware preparation for doors and frames.

B. Related Sections:

1. Division 08 Section "Hollow Metal Doors and Frames" for integrated assembly doors installed in standard hollow metal frames.
2. Division 08 Section "Glazing" for glass view panels in integrated assemblies.
3. Division 09 Section "Interior Painting" for field painting integrated assembly doors and frames.
4. Division 26 "Electrical" Sections for electrical connections including conduit and wiring for door controls and operators installed on integrated assembly doors and frames with factory installed electrical knock out boxes.

C. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.

1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
2. ANSI A156.32 - Integrated Door Opening Assemblies.
3. ANSI/SDI A250.6 - Recommended Practice for Hardware Reinforcing on Standard Steel Doors and Frames.
4. ANSI/SDI A250.8 - Recommended Specifications for Standard Steel Doors and Frames.
5. ANSI/SDI A250.11 - Recommended Erection Instructions for Steel Frames.
6. Intertek Testing Service (ITS Warnock Hersey) - Certification Listings for Fire Doors.
7. Window and Door Manufacturers Association - WDMA I.S.1-A Architectural Wood Flush Doors.
8. ICC/IBC - International Building Code.
9. NFPA 70 - National Electrical Code.
10. NFPA 80 - Fire Doors and Windows.
11. NFPA 101 - Life Safety Code.
12. NFPA 105 - Installation of Smoke Door Assemblies.

13. UL 10C - Positive Pressure Fire Tests of Door Assemblies.
14. CARB – California Air Resources Board.
15. State Building Codes, Local Amendments.

D. Standards: All hardware specified herein to comply with the current version year of the following industry standards:

1. ANSI/BHMA Certified Product Standards, A156 Series.

1.3 SUBMITTALS

A. Product Data: Manufacturer's product data sheets including integrated opening assembly construction and installation details, material descriptions, core descriptions, hardware reinforcements, profiles, anchorage, fire resistance rating, operational descriptions and finishes.

B. Door Hardware Schedule: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule." Include the following information:

1. Type, style, function, size, label, hand, and finish of each door hardware item.
2. Manufacturer of each item.
3. Fastenings and other pertinent information.
4. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
5. Explanation of abbreviations, symbols, and codes contained in schedule.
6. Mounting locations for door hardware.

C. Shop Drawings: Include the following:

1. Elevations of each door design.
2. Details of door and frames types including dimensioned profiles and metal thicknesses.
3. Locations of reinforcement and preparations for hardware.
4. Details of anchorages, joints, field splices, and connections.
5. Details of accessories.
6. Details of moldings, removable stops, and glazing.
7. Details of conduit and preparations for power, signal, and control systems.
8. Provide all dimensions necessary required to complete recessed pockets.

D. Keying Schedule: Reference Division 08 Section "Door Hardware" for keying requirements.

E. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete integrated assembly installation in quantity as required in Division 01, Closeout Submittals. The manual to include the name, address, and contact information of the manufacturers providing the installed assemblies and their nearest service representatives. The final copies delivered after completion of the installation test to include "as built" modifications made during installation, checkout, and acceptance.

F. Warranties and Maintenance: Special warranties and maintenance agreements specified in this Section.

1.4 QUALITY ASSURANCE

A. Quality Standard: In addition to requirements specified, comply with ANSI A156.32, latest edition, "Integrated Door Opening Assemblies".

B. Source Limitations: Obtain complete integrated opening assemblies, including metal frame and integrated door system with operating hardware, through one source and from a single manufacturer wherever possible.

C. Supplier Qualifications: Factory authorized distributor of manufacturer(s) systems and products. Submit written documentation upon request.

D. Installer Qualifications: Installers acceptable by the primary assembly manufacturer, with a minimum [3] years documented experience installing both standard and electrified integrated door opening assemblies similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

E. Regulatory Requirements: Comply with NFPA 70, NFPA 80, NFPA 101 and ANSI A117.1 requirements and guidelines as directed in the model building code including, but not limited to, the following:

1. Where indicated to comply with accessibility requirements, comply with Americans with Disabilities Act (ADA), "Accessibility Guidelines for Buildings and Facilities (ADAAG)," ANSI A117.1 as follows:

1). Handles, Pulls, Latches, Locks, and other Operating Devices: Shape that is easy to grasp with one hand and does not require tight grasping, tight pinching, or twisting of the wrist.

2). Door Closers: Comply with the following maximum opening-force requirements indicated:

1) Interior Hinged Doors: 5 lbf applied perpendicular to door.

2) Fire Doors: Minimum opening force allowable by authorities having jurisdiction.

2. NFPA 101: Comply with the following for means of egress doors:

1). Latches, Locks, and Exit Devices: Not more than 15 lbf to release the latch. Locks shall not require the use of a key, tool, or special knowledge for operation.

2). Thresholds: Not more than 1/2 inch high.

3. Fire-Rated Door Assemblies: Provide door hardware for assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to NFPA 252 (neutral pressure at 40" above sill) or UL-10C.

1). Test Pressure: Positive pressure labeling.

F. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing integrated door opening assemblies.

1. Prior to installation, arrange for manufacturers' representatives to hold a project specific training meeting to instruct the installing contractors' personnel on the proper installation and adjustment of their respective products. Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.
2. Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.
3. Review sequence of operation narratives for each unique access controlled opening.
4. Review and finalize construction schedule and verify availability of materials.
5. Review the required inspecting, testing, commissioning, and demonstration procedures.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to the project site under provisions Division 01 Section "Product Storage and Handling Requirements". Inspect doors, frames, and hardware with representatives of the supplier to verify shipment is complete and to rectify discrepancies promptly.

1. Integrated door assembly systems to be delivered to the job site complete with necessary screws, miscellaneous parts, instructions, and installation templates. Each package legibly and properly labeled to correspond to the approved Door Schedule.

B. Furnish integrated door opening assemblies with operating hardware flush to door skin, using protective wrappings and spacers between projecting hardware. Maintain and protect door assemblies using cardboard spacers and protective edge guards along the door edges, to reduce exposure to marring or damage during storage.

C. Store integrated door opening assemblies in dry and secure area. Do not store electronic access control software, credentials, or accessories at Project site without prior authorization.

1.6 PROJECT CONDITIONS

A. Field Measurements: Verify actual dimensions of openings by field measurements before fabrication.

1.7 COORDINATION

A. Electrical Connections: Coordinate the layout and installation of scheduled electrified hardware and related access control equipment with required connections to source power junction boxes, low voltage power supplies, detection and monitoring hardware, and fire and detection alarm systems.

1.8 WARRANTY

A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article will not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and are in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

B. Special Warranty Periods: Manufacturer's standard written form, with the exceptions noted below, warranting integrated door opening assemblies to be free of defect in material or workmanship under normal use for a period of five (5) years.

1. Continuous Hinges: Ten (10) years.
2. Door Closers: Ten (10) years.

C. Warranty includes the manufacturer, at their sole option, agreeing to repair or replace products or parts found to be defective in material or workmanship according to details contained in the warranty certificate.

1.9 MAINTENANCE SERVICE

A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of integrated door opening assemblies.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

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

1. Adams Rite Manufacturing (RD) - The RITE Door.
2. Total Door.
3. Substitutions: Requests for substitutions and product approval for inclusive integrated door opening assembly systems in compliance with the specifications must be submitted in writing and in accordance with the procedures and time frames outlined in Division 01, Substitution Procedures. Approval of requests is at the discretion of the architect, owner, and their designated consultants.

2.2 WOOD DOOR MATERIAL REQUIREMENTS

A. WDMA I.S.1-A Performance Grade: Extra Heavy Duty; Aesthetic Grade: Custom.

B. Fire Rated Doors: Provide construction and core as needed to provide fire ratings indicated.

1. Category A Edge Construction: Provide fire rated door edge construction with intumescent seals concealed by outer stile (Category A) at 45, 60, and 90 minute rated doors. Comply with specified requirements for exposed edges.

2. Pairs: Provide fire retardant stiles that are listed and labeled for applications indicated without formed steel edges and astragals. Provide stiles with concealed intumescent seals. Comply with specified requirements for exposed edges.

C. Core Construction:

1. Engineered Composite Core Wood Doors:

1). Structural Composite Lumber: Engineered hardwood composite wood products tested in accordance with WDMA I.S.1A, Testing Cellulosic Composite Materials for Use in Fenestration Products containing no added Urea Formaldehyde. Comply with minimum performance levels below:

1) Screw Withdrawal, Face: 700 lbf (3100 N).
2) Screw Withdrawal, Edge: 550 lbf (2440 N).

2). LEED: Meet requirements of EQ4.4.

3). Basis of Design: RITE Door EC.

2. Mineral Core Doors:

1). Core: Non-combustible mineral product complying with requirements of referenced quality standard and testing and inspecting agency for fire protection rating indicated.

2). Blocking: Provide composite blocking with improved screw holding capability approved for use in doors of fire protection ratings indicated as needed to eliminate through-bolting hardware.

3). Edge Construction: At hinge stiles, provide laminated edge construction with improved screw holding capability and split resistance. Comply with specified requirements for exposed edges.

4). Basis of Design: RITE Door FD.

D. Veneered Doors for Transparent Finish:

1. Pair and Set Match: Provide for doors hung in same opening or separated only by mullions.

2. Transom Match: Continuous match.

3. Vertical Edges: Matching same species as faces. Wood or composite material, one piece, laminated, or veneered. Minimum requirements per WDMA section P-1, Performance Standards for Architectural Wood Flush Doors.

4. Horizontal Edges: Solid wood or structural composite material meeting the minimum requirements per WDMA section P-1, Performance Standards for Architectural Wood Flush Doors

5. Construction: Five plies. Stiles and rails are bonded to core, then entire unit sanded before applying face veneers.

E. Light Frames and Glazing:

1. Wood Beads for Light Openings in Wood Doors up to and including 20-minute rating:

1). Wood Species: Same species as door faces.
2). Profile: Manufacturer’s standard lipped profile. At wood core doors with 20-minute fire protection ratings, provide wood beads and metal glazing clips approved for such use.

2. Metal Frames for Light Openings in Fire Rated Doors Over 20-Minutes: Manufacturer's standard frame formed of 0.048-inch-thick, cold rolled steel sheet; with baked enamel or powder coated finish; and approved for use in doors of fire protection rating indicated.

3. Glazing: Comply with installation requirements in Division 08 Section "Glazing" and with the flush wood door manufacturer's written instructions.

2.3 STEEL MATERIAL REQUIREMENTS

A. General:

1. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.

2. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B; with minimum G60 (Z180) or A60 (ZF180) metallic coating.

B. Hollow Metal Doors: Face sheets fabricated of commercial quality cold rolled steel that complies with ASTM A 1008/A 1008M. Provide doors complying with requirements indicated below by referencing ANSI/SDI A250.8 for level and model and ANSI/SDI A250.4 for physical performance level:

1. Design: Flush panel.

2. Core Construction: Manufacturer's standard kraft-paper honeycomb, or one-piece polystyrene core, securely bonded to both faces.

1). Fire Door Core: As required to provide fire-protection and temperature-rise ratings indicated.

3. Level/Model: Level 2 and Physical Performance Level B (Heavy Duty), Minimum 18 gauge (0.042-inch - 1.0-mm) thick steel, Model 2.

4. Top and Bottom Edges: Reinforce tops and bottoms of doors with a continuous steel channel not less than 16 gauge, extending the full width of the door and welded to the face sheet.

5. Hinge Reinforcement: Minimum 7 gauge (3/16") plate 1-1/4" x 9" or minimum 14 gauge continuous channel with pierced holes, drilled and tapped.

6. Hardware Reinforcements: Fabricate according to ANSI/SDI A250.6 with reinforcing plates from same material as door face sheets.

C. Steel Frames:

Fabricated from cold-rolled steel sheet that complies with ASTM A 1008/A 1008M. Comply with ANSI/SDI A250.8 and with details indicated for type and profile.

1. Fabricate frames with mitered or coped corners.

2. Fabricate frames with "closed and tight" miter seams continuously welded on face, finished smooth with no visible seam unless otherwise indicated.

3. Frames for openings up to 48 inches in width: Minimum 16 gauge thick steel sheet.

4. Frames for openings 48 inches and wider in width: Minimum 14 gauge thick steel sheet.

5. Fire rated frames: Fabricate frames in accordance with NFPA 80, listed and labeled by a qualified testing agency, for fire-protection ratings indicated.

6. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 Table 4 with reinforcement plates from same material as frames.

7. Provide suitable adjustable type anchors for wall condition, minimum 4 each per jamb.

2.4 DOOR HARDWARE MATERIAL REQUIREMENTS:

A. Provide a complete integrated door opening assembly, including the installation and adjustment of the latching mechanism within the door construction.

B. Door hardware to include the following minimum products for each integrated door opening assembly as specified in the Door Hardware Sets under Part 3.

1. Hanging Device: Continuous Hinges (geared or pinned), Pocket Pivots, Offset/Intermediate Pivots, or Butt Hinges.
2. Integrated Locking/Latching Hardware: Exit Devices, Lever Handle Trim, or Flush Push/Pulls.

C. Integrated exit device hardware to be clean and unobtrusive in design with a minimal bar height of 2-7/16-inches. Push rails not exceed a projection of 1-1/8-inches when in the latched position and be made of heavy duty aluminum extrusion, available in anodized and architectural finishes using metal cladding. Exit device end caps to be of metal construction, and should match the trim cover caps when available.

D. Push and pull hardware to be clean and unobtrusive in design with a maximum projection of 1/4-inches on pull side and 5/8-inches on the push side. To be used on hollow metal doors only.

E. Lever handles to be clean and unobtrusive in design with a maximum projection of 3-1/2-inches and match design of similar lever locking hardware furnished on project.

F. Door hardware may include the following optional products for each integrated door opening assembly as specified in the Door Hardware Sets under Part 3:

1. Door Closers: Surface Closer or Pocket Closer.
2. Accessory Items: Magnetic Holders, Protection Plates, Edge Guards, Astragals, Smoke Seals.

2.5 FINISH REQUIREMENTS

A. Veneered Wood Finishes:

1. General: Comply with referenced quality standard for factory finishing. Complete fabrication, including fitting doors for openings and machining for hardware that is not surface applied, before finishing.

   1). Finish veneer wrapped metal light kits to match door faces, if specified.

2. Transparent Finish: Provide a clear protective coating over the wood veneer allowing the natural color and grain of the selected wood species to provide the appearance specified. Stain is applied to the wood surface underneath the transparent finish to add color and design flexibility.

   1). Grade: Premium.
   2). Finish: Meet or exceed WDMA I.S. 1A TR6 Catalyzed Polyurethane finish performance requirements.
   3). Staining: As selected by Architect from manufacturer's full range.
   4). Sheen: Satin.

B. Steel Finishes:

1. Prime Finishes: Doors and frames to be cleaned, and chemically treated to insure maximum finish paint adhesion. Surfaces of the door and frame exposed to view to receive a factory applied coat of rust inhibiting shop primer.

   1). Shop Primer: Manufacturer's standard, fast-curing, lead and chromate free primer complying with ANSI/SDI A250.10 acceptance criteria; recommended by primer manufacturer for substrate; and compatible with substrate and field-applied coatings.

2. HPDL Wrapped: Color and pattern as selected by the architect.

3. Embossed Wood Grain Pattern: Color and pattern as selected by the architect from the manufacturer’s standard range.

C. Hardware Finishes: As specified in Hardware Sets.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Verify the accuracy of dimensions given to the integrated door opening assembly manufacturer for existing openings or existing frames (strike height, hinge spacing, hinge back set, etc.).

C. Proceed with installation only after unsatisfactory conditions have been corrected. Beginning of installation indicates acceptance of the existing conditions.

D. Verify power supplies, as required, are available to power electrically operated devices.

3.2 INSTALLATION

A. General: Install integrated door opening assemblies plumb, rigid, properly aligned, and securely fastened in place; comply with Drawings and manufacturer's written instructions.

B. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.

1. Installers are to be trained and by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; integrated locking/latching devices; closing devices; and seals.

C. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:

1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
2. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
3. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.

D. Coordinate installation and interface wiring with fire alarm and smoke detection systems.

E. Remove or protect furnished hardware accessories, prior to painting or finishing completed after the installation of the hardware accessories.

3.3 FIELD QUALITY CONTROL

A. Field Inspection: Perform a final inspection of installed integrated door opening assemblies and state in report whether work complies with or deviates from specification requirements, including whether door hardware is properly installed, operating and adjusted.

3.4 ADJUSTMENT

A. Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Remove and replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

3.5 CLEANING AND PROTECTION

A. Protect all door opening assemblies and hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install hardware at the latest possible time frame.

B. Clean operating items as necessary to restore proper finish and provide final protection and maintain conditions that ensure integrated door and operating hardware is without damage or deterioration at time of owner occupancy.

C. Prime-Coat and Painted Finish Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat, or painted finishes, and apply touchup of compatible air drying, rust-inhibitive primer or finish paint.

3.6 DEMONSTRATION

A. Instruct Owner's maintenance personnel to adjust, operate, and maintain integrated door opening assemblies and hardware.

3.7 HARDWARE SETS

A. The integrated door opening hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.

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SECTION 08 71 00

DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes commercial door hardware for the following:

1. Swinging doors.
2. Sliding doors.
3. Other doors to the extent indicated.

B. Door hardware includes, but is not necessarily limited to, the following:

1. Mechanical door hardware.
2. Electromechanical door hardware.
3. Cylinders specified for doors in other sections.

C. Related Sections:

1. Division 08 Section “Door Hardware Schedule”.
2. Division 08 Section “Hollow Metal Doors and Frames”.
3. Division 08 Section “Integrated Door Opening Assemblies”.
4. Division 08 Section “Access Control Hardware”.

D. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.

1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
2. ICC/IBC - International Building Code.
3. NFPA 70 - National Electrical Code.
4. NFPA 80 - Fire Doors and Windows.
5. NFPA 101 - Life Safety Code.
6. NFPA 105 - Installation of Smoke Door Assemblies.
7. State Building Codes, Local Amendments.

E. Standards: All hardware specified herein shall comply with the following industry standards:

1. ANSI/BHMA Certified Product Standards - A156 Series

2. UL10C – Positive Pressure Fire Tests of Door Assemblies

1.3 SUBMITTALS

A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.

B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."

2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.

3. Content: Include the following information:

a. Type, style, function, size, label, hand, and finish of each door hardware item.
b. Manufacturer of each item.
c. Fastenings and other pertinent information.
d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
e. Explanation of abbreviations, symbols, and codes contained in schedule.
f. Mounting locations for door hardware.
g. Door and frame sizes and materials.
h. Warranty information for each product.

4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.

C. Shop Drawings: Details of electrified access control hardware indicating the following:

1. Wiring Diagrams: Upon receipt of approved schedules, submit detailed system wiring diagrams for power, signaling, monitoring, communication, and control of the access control system electrified hardware. Differentiate between manufacturer-installed and field-installed wiring. Include the following:

a. Elevation diagram of each unique access controlled opening showing location and interconnection of major system components with respect to their placement in the respective door openings.
b. Complete (risers, point-to-point) access control system block wiring diagrams.
c. Wiring instructions for each electronic component scheduled herein.

2. Electrical Coordination: Coordinate with related sections the voltages and wiring details required at electrically controlled and operated hardware openings.

D. Keying Schedule: After a keying meeting with the owner has taken place prepare a separate keying schedule detailing final instructions. Submit the keying schedule in electronic format. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner must approve submitted keying schedule prior to the ordering of permanent cylinders/cores.

E. Informational Submittals:

1. Product Test Reports: Indicating compliance with cycle testing requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified independent testing agency.

F. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Submittals.

1.4 QUALITY ASSURANCE

A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.

B. Installer Qualifications: A minimum 3 years documented experience installing both standard and electrified door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

C. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor by the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.

D. Source Limitations: Obtain each type and variety of door hardware specified in this section from a single source unless otherwise indicated.

1. Electrified modifications or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.

2. Provide electromechanical door hardware from the same manufacturer as mechanical door hardware, unless otherwise indicated.

E. Each unit to bear third party permanent label demonstrating compliance with the referenced standards.

F. Keying Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Keying conference to incorporate the following criteria into the final keying schedule document:

1. Function of building, purpose of each area and degree of security required.
2. Plans for existing and future key system expansion.
3. Requirements for key control storage and software.
4. Installation of permanent keys, cylinder cores and software.
5. Address and requirements for delivery of keys.

G. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.

1. Prior to installation of door hardware, conduct a project specific training meeting to instruct the installing contractors' personnel on the proper installation and adjustment of their respective products. Product training to be attended by installers of door hardware (including electromechanical hardware) for aluminum, hollow metal and wood doors. Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.
2. Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.
3. Review sequence of operation narratives for each unique access controlled opening.
4. Review and finalize construction schedule and verify availability of materials.
5. Review the required inspecting, testing, commissioning, and demonstration procedures

H. At completion of installation, provide written documentation that components were applied to manufacturer's instructions and recommendations and according to approved schedule.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.

B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.

C. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

1.6 COORDINATION

A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.

B. Door Hardware and Electrical Connections: Coordinate the layout and installation of scheduled electrified door hardware and related access control equipment with required connections to source power junction boxes, low voltage power supplies, detection and monitoring hardware, and fire and detection alarm systems.

C. Door and Frame Preparation: Doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

1.7 WARRANTY

A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:

1. Structural failures including excessive deflection, cracking, or breakage.
2. Faulty operation of the hardware.
3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
4. Electrical component defects and failures within the systems operation.

C. Standard Warranty Period: One year from date of Substantial Completion, unless otherwise indicated.

D. Special Warranty Periods:

1. Ten years for mortise locks and latches.
2. Five years for exit hardware.
3. Five years for motorized electric latch retraction exit devices.
4. Two years for electromechanical door hardware.

1.8 MAINTENANCE SERVICE

A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

A. General: Provide door hardware for each door to comply with requirements in Door Hardware Sets and each referenced section that products are to be supplied under.

B. Designations: Requirements for quantity, item, size, finish or color, grade, function, and other distinctive qualities of each type of door hardware are indicated in the Door Hardware Sets at the end of Part 3. Products are identified by using door hardware designations, as follows:

1. Named Manufacturer's Products: Product designation and manufacturer are listed for each door hardware type required for the purpose of establishing requirements. Manufacturers' names are abbreviated in the Door Hardware Schedule.

C. Substitutions: Requests for substitution and product approval for inclusive mechanical and electromechanical door hardware in compliance with the specifications must be submitted in writing and in accordance with the procedures and time frames outlined in Division 01, Substitution Procedures. Approval of requests is at the discretion of the architect, owner, and their designated consultants.

2.2 HANGING DEVICES

A. Hinges: ANSI/BHMA A156.1 certified butt hinges with number of hinge knuckles and other options as specified in the Door Hardware Sets.

1. Quantity: Provide the following hinge quantity:

a. Two Hinges: For doors with heights up to 60 inches.
b. Three Hinges: For doors with heights 61 to 90 inches.
c. Four Hinges: For doors with heights 91 to 120 inches.
d. For doors with heights more than 120 inches, provide 4 hinges, plus 1 hinge for every 30 inches of door height greater than 120 inches.

2. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:

a. Widths up to 3’0”: 4-1/2” standard or heavy weight as specified.
b. Sizes from 3’1” to 4’0”: 5” standard or heavy weight as specified.

3. Hinge Weight and Base Material: Unless otherwise indicated, provide the following:

a. Exterior Doors: Heavy weight, non-ferrous, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate standard weight.
b. Interior Doors: Standard weight, steel, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate heavy weight.

4. Hinge Options: Comply with the following:

a. Non-removable Pins: Provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for the all out-swinging lockable doors.

5. Manufacturers:

a. Hager Companies (HA) - CB Series.
b. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK) - TA Series.
c. Stanley Hardware (ST) - CB Series.

B. Pin and Barrel Continuous Hinges: ANSI/BHMA A156.26 Grade 1-600 certified pin and barrel continuous hinges with minimum 14 gauge Type 304 stainless steel hinge leaves, concealed teflon coated stainless pin, and twin self lubricated nylon bearings at each knuckle separation. Factory trim hinges to suit door height and prepare for electrical cut-outs.

1. Manufacturers:

a. Markar Products; ASSA ABLOY Architectural Door Accessories (MR).
b. Pemko Products; ASSA ABLOY Architectural Door Accessories (PE).

C. Pivots: ANSI/BHMA A156.4, Grade 1, certified. Space intermediate pivots equally not less than 25 inches on center apart or not more than 35 inches on center for doors over 121 inches high. Pivot hinges to have oil impregnated bronze bearing in the top pivot and a radial roller and thrust bearing in the bottom pivot with the bottom pivot designed to carry the full weight of the door. Pivots to be UL listed for windstorm where applicable.

1. Manufacturers:

a. Architectural Builders Hardware (AH).
b. Rixson Door Controls (RF).

2.3 POWER TRANSFER DEVICES

A. Electrified Quick Connect Transfer Hinges: Provide electrified transfer hinges with Molex™ standardized plug connectors and sufficient number of concealed wires (up to 12) to accommodate the electrified functions specified in the Door Hardware Sets. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Wire nut connections are not acceptable.

1. Manufacturers:

a. Hager Companies (HA) - ETW-QC (# wires) Option.
b. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK) - QC (# wires) Option.
c. Stanley Hardware (ST) – C Option.

B. Electrified Quick Connect Intermediate Transfer Pivots: Provide electrified offset intermediate transfer pivot hinges with Molex™ standardized plug connectors and sufficient number of concealed wires (up to 12) to accommodate the electrified functions specified in the Door Hardware Sets. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Wire nut connections are not acceptable.

1. Manufacturers:

a. Architectural Builders Hardware (AH) – EL019-EZ (# wires).
b. Rixson Door Controls (RF) - E-M19-QC (# wires).

C. Electric Door Wire Harnesses: Provide electric/data transfer wiring harnesses with standardized plug connectors to accommodate up to twelve (12) wires. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Provide sufficient number and type of concealed wires to accommodate electric function of specified hardware. Provide a connector for through-door electronic locking devices and from hinge to junction box above the opening. Wire nut connections are not acceptable. Determine the length required for each electrified hardware component for the door type, size and construction, minimum of two per electrified opening.

1. Provide one each of the following tools as part of the base bid contract:
a. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK) - Electrical Connecting Kit: QC-R001.
b. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK) - Connector Hand Tool: QC-R003.

2. Manufacturers:

a. Hager Companies (HA) - Quick Connect.
b. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK) – QC-C Series.
c. Stanley Hardware (ST) – WH Series.

2.4 DOOR OPERATING TRIM

A. Flush Bolts and Surface Bolts: ANSI/BHMA A156.3 and A156.16, Grade 1, certified.

1. Flush bolts to be furnished with top rod of sufficient length to allow bolt retraction device location approximately six feet from the floor.
2. Furnish dust proof strikes for bottom bolts.
3. Surface bolts to be minimum 8” in length and U.L. listed for labeled fire doors and U.L. listed for windstorm components where applicable.
4. Provide related accessories (mounting brackets, strikes, coordinators, etc.) as required for appropriate installation and operation.

5. Manufacturers:

    a. Door Controls International (DC).
    b. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).
    c. Trimco (TC).

B. Coordinators: ANSI/BHMA A156.3 certified door coordinators consisting of active-leaf, hold-open lever and inactive-leaf release trigger. Model as indicated in hardware sets.

1. Manufacturers:

    a. Door Controls International (DC).
    b. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).
    c. Trimco (TC).

C. Door Push Plates and Pulls: ANSI/BHMA A156.6 certified door pushes and pulls of type and design specified in the Hardware Sets. Coordinate and provide proper width and height as required where conflicting hardware dictates.
1. Door Pull and Push Bar Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door unless otherwise indicated.
2. Fasteners: Provide manufacturer's designated fastener type as indicated in Hardware Sets.

3. Manufacturers:

    a. Hiawatha, Inc. (HI).
    b. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).
    c. Trimco (TC).

2.5 CYLINDERS AND KEYING

A. General: Cylinder manufacturer to have minimum (10) years experience designing secured master key systems and have on record a published security keying system policy.

B. Source Limitations: Obtain each type of keyed cylinder and keys from the same source manufacturer as locksets and exit devices, unless otherwise indicated.

C. Cylinders: Original manufacturer cylinders complying with the following:

1. Mortise Type: Threaded cylinders with rings and cams to suit hardware application.
2. Rim Type: Cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
3. Bored-Lock Type: Cylinders with tailpieces to suit locks.
4. Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.

D. Permanent Cores: Manufacturer's standard; finish face to match lockset; complying with the following:

1. Removable Cores: Core insert, removable by use of a special key, and for use with only the core manufacturer's cylinder and door hardware. Provide removable core (small or large format) as specified in Hardware Sets.

E. Keying System: Each type of lock and cylinders to be factory keyed.

1. Conduct specified "Keying Conference" to define and document keying system instructions and requirements.
2. Furnish factory cut, nickel-silver large bow permanently inscribed with a visual key control number as directed by Owner.
3. Existing System: Key locks to Owner's existing system.

F. Key Quantity: Provide the following minimum number of keys:

1. Change Keys per Cylinder: Two (2)
2. Master Keys (per Master Key Level/Group): Five (5).
3. Construction Keys (where required): Ten (10).

G. Construction Keying: Provide temporary keyed construction cores.

2.6 MECHANICAL LOCKS AND LATCHING DEVICES

A. Mortise Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.13, Series 1000, Operational Grade 1 certified. Locksets are to be manufactured with a corrosion resistant steel case and be field-reversible for handing without disassembly of the lock body.

1. Manufacturers:

a. Corbin Russwin Hardware (RU) – ML2000 Series.
b. No Substitution.

2.7 INTEGRATED WIEGAND OUTPUT LOCKING DEVICES – MULTI-CLASS READER

A. Integrated Wiegand Output Multi-Class Mortise Locks: Wiegand output ANSI A156.13, Grade 1, mortise lockset with integrated card reader, request-to-exit signaling, door position status switch, and latchbolt monitoring in one complete unit. Hard wired, solenoid driven locking/unlocking control of the lever handle trim, 3/4" deadlocking anti-friction latch, and 1" case-hardened steel deadbolt. Lock is U.L listed and labeled for use on up to 3 hour fire rated openings. Available with or without keyed high security cylinder override.
1. Open architecture, hard wired platform supports centralized control of locking units with new or existing Wiegand compatible access control systems. Latchbolt monitoring and door position switch act in conjunction to report door-in-frame (DPS) and door latched (door closed and latched) conditions.
2. Integrated reader supports the following credentials:
a. 125kHz proximity credentials: HID, AWID, Indala, and EM4102.
b. 13.56 MHz proximity credentials: HID iClass, HID iClass SE, SE for MIFARE Classic, DESFire EV1.

3. 12VDC external power supply required for reader and lock, with optional 24VDC lock solenoid. Fail safe or fail secure options.
4. Energy Efficient Design: Provide lock bodies which have a holding current draw of 15mA maximum, and can operate on either 12 or 24 volts. Locks are to be field configurable for fail safe or fail secure operation.
5. Support end-of-line resistors contained within the lock case.
6. Installation requires only one cable run from the lock to the access control panel without requirements for additional proprietary lock panel interface boards or modules.
7. Installation to include manufacturer's access control panel interface board or module where required for Wiegand output protocol.

8. Manufacturers:

    a. Corbin Russwin (RU) – ML2000 SE-LP10 Series.

2.8 LOCK AND LATCH STRIKES

A. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:

1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
3. Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.
4. Double-lipped strikes: For locks at double acting doors. Furnish with retractable stop for rescue hardware applications.

B. Standards: Comply with the following:

1. Strikes for Mortise Locks and Latches: BHMA A156.13.
2. Strikes for Bored Locks and Latches: BHMA A156.2.
3. Strikes for Auxiliary Deadlocks: BHMA A156.36.
4. Dustproof Strikes: BHMA A156.16.

2.9 CONVENTIONAL EXIT DEVICES

A. General Requirements: All exit devices specified herein shall meet or exceed the following criteria:

1. At doors not requiring a fire rating, provide devices complying with NFPA 101 and listed and labeled for "Panic Hardware" according to UL305. Provide proper fasteners as required by manufacturer including sex nuts and bolts at openings specified in the Hardware Sets.

2. Where exit devices are required on fire rated doors, provide devices complying with NFPA 80 and with UL labeling indicating "Fire Exit Hardware". Provide devices with the proper

fasteners for installation as tested and listed by UL. Consult manufacturer's catalog and template book for specific requirements.

3. Except on fire rated doors, provide exit devices with hex key dogging device to hold the pushbar and latch in a retracted position. Provide optional keyed cylinder dogging on devices where specified in Hardware Sets.

4. Devices must fit flat against the door face with no gap that permits unauthorized dogging of the push bar. The addition of filler strips is required in any case where the door light extends behind the device as in a full glass configuration.

5. Electromechanical Options: Subject to same compliance standards and requirements as mechanical exit devices, electrified devices to be of type and design as specified in hardware sets. Include any specific controllers when conventional power supplies are not sufficient to provide the proper inrush current.

6. Lever Operating Trim: Where exit devices require lever trim, furnish manufacturer's heavy duty escutcheon trim with threaded studs for thru-bolts.

    a. Lock Trim Design: As indicated in Hardware Sets, provide finishes and designs to match that of the specified locksets.
    b. Where function of exit device requires a cylinder, provide a cylinder (Rim or Mortise) as specified in Hardware Sets.

7. Vertical Rod Exit Devices: Where surface or concealed vertical rod exit devices are used at interior openings, provide as less bottom rod (LBR) unless otherwise indicated. Provide dust proof strikes where thermal pins are required to project into the floor.

8. Narrow Stile Applications: At doors constructed with narrow stiles, or as specified in Hardware Sets, provide devices designed for maximum 2" wide stiles.

9. Dummy Push Bar: Nonfunctioning push bar matching functional push bar.

10. Rail Sizing: Provide exit device rails factory sized for proper door width application.

11. Through Bolt Installation: For exit devices and trim as indicated in Door Hardware Sets.

B. Conventional Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 certified panic and fire exit hardware devices furnished in the functions specified in the Hardware Sets. Exit device latch to be stainless steel, pullman type, with deadlock feature.

1. Manufacturers:

    a. Corbin Russwin Hardware (RU) - ED4000 / ED5000 Series.
    b. No Substitution.

C. Tube Steel Removable Mullions: ANSI/BHMA A156.3 removable steel mullions with malleable-iron top and bottom retainers and a primed paint finish.

1. Provide keyed removable feature where specified in the Hardware Sets.

2. Provide stabilizers and mounting brackets as required.

3. Provide electrical quick connection wiring options as specified in the hardware sets.

4. Manufacturers:

    a. Corbin Russwin Hardware (RU) - 700/900 Series.

2.10 INTEGRATED WIEGAND OUTPUT EXIT DEVICES – MULTI-CLASS READER

A. Integrated Wiegand Output Multi-Class Exit Hardware: Wiegand output ANSI 156.3 Grade 1 rim, mortise, and vertical rod exit device hardware with integrated proximity card reader, latchbolt and touchbar monitoring, and request-to-exit signaling, in one complete unit. Hard wired, solenoid driven locking/unlocking control of the lever handle exit trim with 3/4" throw latch bolt. U.L listed and labeled for either panic or "fire exit hardware" for use on up to 3 hour fire rated openings. Available with or without keyed high security cylinder override.

1. Open architecture, hard wired platform supports centralized control of locking units with new or existing Wiegand compatible access control systems. Inside push bar (request-to-exit) signaling and door position (open/closed status) monitoring (via separately connected DPS).
2. Integrated reader supports the following credentials:
    a. 125kHz proximity credentials: HID, AWID, Indala, and EM4102.
    b. 13.56 MHz proximity credentials: HID iClass, HID iClass SE, SE for MIFARE Classic, DESFire EV1.
3. 12VDC external power supply required for reader. 24VDC required for solenoid operated exit trim. Fail safe or fail secure options.
4. Installation requires only one cable run from the exit hardware to the access control panel without requirements for additional proprietary lock panel interface boards or modules.
5. Competitor Alternates Allowed Option>Installation to include manufacturer's access control panel interface board or module where required for Wiegand output protocol.

6. Manufacturers:

    a. Corbin Russwin (RU) – ED5000 SE-LP10 Series.

2.11 DOOR CLOSERS

A. All door closers specified herein shall meet or exceed the following criteria:

1. General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers including installation and adjusting information on inside of cover.

2. Standards: Closers to comply with UL-10C for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.

3. Cycle Testing: Provide closers which have surpassed 15 million cycles in a test witnessed and verified by UL.

4. Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the physically handicapped, provide units complying with ANSI ICC/A117.1.

5. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.

6. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics.

7. Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates as required for proper installation. Provide through-bolt and security type fasteners as specified in the hardware sets.

B. Door Closers, Surface Mounted (Heavy Duty): ANSI/BHMA A156.4, Grade 1 surface mounted, heavy duty door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron or aluminum alloy body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control. Provide non-handed units standard.

1. Manufacturers:

a. Corbin Russwin Hardware (RU) - DC6000 Series.
b. Sargent Manufacturing (SA) - 351 Series.
c. Norton Door Controls (NO) - 7500 Series.

2.12 ARCHITECTURAL TRIM

A. Door Protective Trim

1. General: Door protective trim units to be of type and design as specified below or in the Hardware Sets.

2. Size: Fabricate protection plates (kick, armor, or mop) not more than 2" less than door width (LDW) on stop side of single doors and 1” LDW on stop side of pairs of doors, and not more than 1" less than door width on pull side. Coordinate and provide proper width and height as required where conflicting hardware dictates. Height to be as specified in the Hardware Sets.

3. Where plates are applied to fire rated doors with the top of the plate more than 16” above the bottom of the door, provide plates complying with NFPA 80. Consult manufacturer’s catalog and template book for specific requirements for size and applications.

4. Protection Plates: ANSI/BHMA A156.6 certified protection plates (kick, armor, or mop), fabricated from the following:

    a. Stainless Steel: 300 grade, 050-inch thick.

5. Options and fasteners: Provide manufacturer's designated fastener type as specified in the Hardware Sets. Provide countersunk screw holes.

6. Manufacturers:

    a. Hiawatha, Inc. (HI).
    b. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).
    c. Trimco (TC).

2.13 DOOR STOPS AND HOLDERS

A. General: Door stops and holders to be of type and design as specified below or in the Hardware Sets.

B. Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 certified door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.

1. Manufacturers:

    a. Hiawatha, Inc. (HI).
    b. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).
    c. Trimco (TC).

C. Overhead Door Stops and Holders: ANSI/BHMA A156.6, Grade 1 certified overhead stops and holders to be surface or concealed types as indicated in Hardware Sets. Track, slide, arm and jamb bracket to be constructed of extruded bronze and shock absorber spring of heavy tempered steel. Provide non-handed design with mounting brackets as required for proper operation and function.

1. Manufacturers:

    a. Rixson Door Controls (RF).
    b. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).
    c. Sargent Manufacturing (SA).

2.14 ARCHITECTURAL SEALS

A. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.

B. Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke control ratings indicated, based on testing according to UL 1784.

1. Provide smoke labeled perimeter gasketing at all smoke labeled openings.

C. Fire Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to UL-10C.

1. Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and NPFA 252, Standard Methods of Fire Tests of Door Assemblies.

D. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated.

E. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.

F. Manufacturers:

1. National Guard Products (NG).
2. Pemko Products; ASSA ABLOY Architectural Door Accessories (PE).
3. Reese Enterprises, Inc. (RE).

2.15 ELECTRONIC ACCESSORIES

A. Door Position Switches: Door position magnetic reed contact switches specifically designed for use in commercial door applications. On recessed models the contact and magnetic housing snap-lock into a 1" diameter hole. Surface mounted models include wide gap distance design complete with armored flex cabling. Provide SPDT, N/O switches with optional Rare Earth Magnet installation on steel doors with flush top channels.

1. Manufacturers:

a. Security Door Controls (SD) - DPS Series.
b. Securitron (SU) - DPS Series.

B. Wiegand Test Unit: Test unit verifies proper Wiegand output integrated card reader lock installation in the field by testing for proper wiring, card reader data integrity, and lock functionality including lock/unlock, door position, and request-to-exit status. 12 or 24VDC voltage adjustable operating as Fail Safe or Fail Secure.

1. Manufacturers:

a. Corbin Russwin Hardware (RU) – WT2 Wiegand Test Unit.
b. Sargent Manufacturing (SA) – WT2 Wiegand Test Unit.
c. Yale Locks and Hardware (YA) – WT2 Wiegand Test Unit.

C. Switching Power Supplies: Provide switching power supplies that are dual voltage, UL listed, supervised units. Units shall be field selectable with a dedicated battery charging circuit that provide 4 Amp at 12VDC or 24VDC continuous, with up to 16 independently controlled power limited outputs. Units shall tolerate brownout or overvoltage input ± 15% of nominal voltage and have thermal shutdown protection with auto restart. Circuit breaker shall protect against overcurrent and reverse battery faults and units shall be available with a single relay fire trigger or individually triggered relayed outputs. Provide the least number of units, at the appropriate amperage level, sufficient to exceed the required total draw for the specified electrified hardware and access control equipment.

1. Manufacturers:

a. Securitron (SU) - AQ Series.

2.16 FABRICATION

A. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

2.17 FINISHES

A. Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.

B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware

C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine scheduled openings, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.

B. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

3.2 PREPARATION

A. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.

B. Wood Doors: Comply with ANSI/DHI A115-W series.

3.3 INSTALLATION

A. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.

1. Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.

B. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:

1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
2. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
3. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
4. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.

C. Retrofitting: Install door hardware to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.

D. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."

E. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

3.4 FIELD QUALITY CONTROL

A. Field Inspection: Supplier will perform a final inspection of installed door hardware and state in report whether work complies with or deviates from requirements, including whether door hardware is properly installed, operating and adjusted.

3.5 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

3.6 CLEANING AND PROTECTION

A. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.

B. Clean adjacent surfaces soiled by door hardware installation.

C. Clean operating items as necessary to restore proper finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

3.7 DEMONSTRATION

A. Instruct Owner's maintenance personnel to adjust, operate, and maintain mechanical and electromechanical door hardware.

3.8 DOOR HARDWARE SETS

A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.

B. The supplier is responsible for handing and sizing all products and providing the correct option for the appropriate door type and material where more than one is presented in the hardware sets. Quantities listed are for each pair of doors, or for each single door.

C. Refer to Section 080671, Door Hardware Sets, for hardware sets.

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SECTION 09 22 16

NON-STRUCTURAL METAL FRAMING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Non-load-bearing steel framing systems for interior partitions, ceilings, bulkheads and soffits.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1.4 INFORMATIONAL SUBMITTALS

A. Evaluation Reports: For embossed steel studs and tracks, firestop tracks, post-installed anchors, and power-actuated fasteners, from ICC-ES or other qualified testing agency acceptable to authorities having jurisdiction.

1.5 QUALITY ASSURANCE

A. Code-Compliance Certification of Studs and Tracks: Provide documentation that framing members are certified according to the product-certification program of the Certified Steel Stud Association, the Steel Framing Industry Association, or the Steel Stud Manufacturers Association.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Test-Response Characteristics: For fire-resistance-rated assemblies that incorporate non-load-bearing steel framing, provide materials and construction identical to those tested in assembly indicated, according to ASTM E 119 by an independent testing agency.

B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated, according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency in accordance with UL assembly.

2.2 FRAMING SYSTEMS

A. Framing Members, General: Comply with ASTM C 754 for conditions indicated.

1. Steel Sheet Components: Comply with ASTM C 645 requirements for metal unless otherwise indicated.

2. Protective Coating: ASTM A 653/A 653M, G60, hot-dip galvanized unless otherwise indicated.

B. Studs and Runners: ASTM C 645. Use either steel studs and runners or dimpled steel studs and runners.

1. Steel Studs and Runners:

a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1) ClarkDietrich Building Systems.
2) MarinoWARE. 3) Steel Network, Inc. (The).
3) Super Stud Building Products, Inc.
4) Telling Industries.

b. Minimum Base-Metal Thickness: As indicated on Drawings.

c. Depth: As indicated on Drawings.

2. Embossed Steel Studs and Tracks: Roll-formed and embossed with surface deformations to stiffen the framing members so that they are structurally equivalent to conventional ASTM C 645 steel studs and tracks.

a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1) ClarkDietrich Building Systems.
2) MarinoWARE. 3) Steel Network, Inc. (The).
3) Super Stud Building Products, Inc.
4) Telling Industries.

b. Minimum Base-Metal Thickness: As indicated on Drawings.

c. Depth: As indicated on Drawings.

C. Slip-Type Head Joints: Where indicated, provide one of the following:

1. Clip System: Clips designed for use in head-of-wall deflection conditions that provide a positive attachment of studs to runners while allowing 1-1/2-inch minimum vertical movement.

    a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

        1) ClarkDietrich Building Systems.
        2) Fire Trak Corp.
        3) Steel Network, Inc. (The).
        4) Super Stud Building Products Inc.

2. Single Long-Leg Runner System: ASTM C 645 top runner with 2-inch-deep flanges in thickness not less than indicated for studs, installed with studs friction fit into top runner and with continuous bridging located within 12 inches of the top of studs to provide lateral bracing.

3. Double-Runner System: ASTM C 645 top runners, inside runner with 2-inch-deep flanges in thickness not less than indicated for studs and fastened to studs, and outer runner sized to friction fit inside runner.

4. Deflection Track: Steel sheet top runner manufactured to prevent cracking of finishes applied to interior partition framing resulting from deflection of structure above; in thickness not less than indicated for studs and in width to accommodate depth of studs.

    a. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

        1) ClarkDietrich Building Systems; SLP-TRK Slotted Deflection Track.
        2) MBA Building Supplies; FlatSteel Deflection Track or Slotted Deflecto Track.
        3) Steel Network Inc. (The); VertiClip SLD or VertiTrack VTD Series.
        4) Telling Industries; Vertical Slip Track or Vertical Slip Track II.

D. Firestop Tracks: Top track manufactured to allow partition heads to expand and contract with movement of structure while maintaining continuity of fire-resistance-rated assembly indicated; in thickness not less than indicated for studs and in width to accommodate depth of studs.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

    a. Blazeframe Industries.
    b. CEMCO; California Expanded Metal Products Co.
    c. ClarkDietrich Building Systems.
    d. Fire Trak Corp.
    e. MarinoWARE.
    f. Steel Network, Inc. (The).

E. Flat Strap and Backing Plate: Steel sheet for blocking and bracing in length and width indicated.

1. Minimum Base-Metal Thickness: Per UL Design Standards, or indicated on Drawings.

F. Cold-Rolled Channel Bridging: Steel, 0.053-inch minimum base-metal thickness, with minimum 1/2-inch-wide flanges.

1. Depth: As indicated on Drawings.
2. Clip Angle: Not less than 1-1/2 by 1-1/2 inches, 0.068-inch-thick, galvanized steel.

G. Hat-Shaped, Rigid Furring Channels: ASTM C 645.

1. Minimum Base-Metal Thickness: Per UL Design Standards, or indicated on Drawings.
2. Depth: As indicated on Drawings.

H. Resilient Furring Channels: 1/2-inch-deep, steel sheet members designed to reduce sound transmission.

1. 1. Configuration: Asymmetrical or hat shaped.

I. Cold-Rolled Furring Channels: 0.053-inch uncoated-steel thickness, with minimum 1/2-inchwide flanges.

1. Depth: As indicated on Drawings.
2. Furring Brackets: Adjustable, corrugated-edge type of steel sheet with minimum uncoated-steel thickness of 0.033 inch.
3. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.062-inch-diameter wire, or double strand of 0.048-inch-diameter wire.

J. Z-Shaped Furring: With slotted or nonslotted web, face flange of 1-1/4 inches, wall attachment flange of 7/8 inch, minimum uncoated-metal thickness of 0.018 inch, and depth required to fit insulation thickness indicated.

2.3 AUXILIARY MATERIALS

A. General: Provide auxiliary materials that comply with referenced installation standards.

1. Fasteners for Metal Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.

B. Isolation Strip at Exterior Walls: Provide one of the following:

1. Asphalt-Saturated Organic Felt: ASTM D 226, Type I (No. 15 asphalt felt), nonperforated.
2. Foam Gasket: Adhesive-backed, closed-cell vinyl foam strips that allow fastener penetration without foam displacement, 1/8 inch thick, in width to suit steel stud size.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames, cast-in anchors, and structural framing, for compliance with requirements and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Suspended Assemblies: Coordinate installation of suspension systems with installation of overhead structure to ensure that inserts and other provisions for anchorages to building structure have been installed to receive hangers at spacing required to support the Work and that hangers will develop their full strength.

1. Furnish concrete inserts and other devices indicated to other trades for installation in advance of time needed for coordination and construction.

B. Coordination with Sprayed Fire-Resistive Materials:

1. Before sprayed fire-resistive materials are applied, attach offset anchor plates or ceiling tracks to surfaces indicated to receive sprayed fire-resistive materials. Where offset anchor plates are required, provide continuous plates fastened to building structure not more than 24 inches o.c.

2. After sprayed fire-resistive materials are applied, remove them only to extent necessary for installation of non-load-bearing steel framing. Do not reduce thickness of fire-resistive materials below that are required for fire-resistance ratings indicated. Protect adjacent fire-resistive materials from damage.

3.3 INSTALLATION, GENERAL

A. Installation Standard: ASTM C 754.
1. Gypsum Board Assemblies: Also comply with requirements in ASTM C 840 that apply to framing installation.

B. Install framing and accessories plumb, square, and true to line, with connections securely fastened.

C. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.

D. Install bracing at terminations in assemblies.

E. Do not bridge building control and expansion joints with non-load-bearing steel framing members. Frame both sides of joints independently.

3.4 INSTALLING FRAMED ASSEMBLIES

A. Install framing system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.

B. Where studs are installed directly against exterior masonry walls or dissimilar metals at exterior walls, install isolation strip between studs and exterior wall.

C. Install studs so flanges within framing system point in same direction.

D. Install tracks (runners) at floors and overhead supports. Extend framing full height to structural supports or substrates above suspended ceilings except where partitions are indicated to terminate at suspended ceilings. Continue framing around ducts penetrating partitions above ceiling.
   1. Slip-Type Head Joints: Where framing extends to overhead structural supports, install to produce joints at tops of framing systems that prevent axial loading of finished assemblies.
   2. Door Openings: Screw vertical studs at jambs to jamb anchor clips on door frames; install runner track section (for cripple studs) at head and secure to jamb studs.
      a. Install two studs at each jamb unless otherwise indicated.
      b. Install cripple studs at head adjacent to each jamb stud, with a minimum 1/2-inch clearance from jamb stud to allow for installation of control joint in finished assembly.
      c. Extend jamb studs through suspended ceilings and attach to underside of overhead structure.
   3. Other Framed Openings: Frame openings other than door openings the same as required for door openings unless otherwise indicated. Install framing below sills of openings to match framing required above door heads.
   4. Fire-Resistance-Rated Partitions: Install framing to comply with fire-resistance-rated assembly indicated and support closures and to make partitions continuous from floor to underside of solid structure.
      a. Firestop Track: Where indicated, install to maintain continuity of fire-resistance-rated assembly indicated.
   5. Sound-Rated Partitions: Install framing to comply with sound-rated assembly indicated.
   6. Curved Partitions:
      a. Bend track to uniform curve and locate straight lengths so they are tangent to arcs.
      b. Begin and end each arc with a stud, and space intermediate studs equally along arcs. On straight lengths of no fewer than two studs at ends of arcs, place studs 6 inches o.c.

E. Direct Furring:
   1. Screw to framing.
   2. Attach to concrete or masonry with stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced 24 inches o.c.

F. Z-Furring Members:
   1. Erect insulation, specified in Section 072100 "Thermal Insulation," vertically and hold in place with Z-furring members spaced 24 inches o.c.
   2. Except at exterior corners, securely attach narrow flanges of furring members to wall with concrete stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced 24 inches o.c.
   3. At exterior corners, attach wide flange of furring members to wall with short flange extending beyond corner; on adjacent wall surface, screw-attach short flange of furring

channel to web of attached channel. At interior corners, space second member no more than 12 inches from corner and cut insulation to fit.

G. Installation Tolerance: Install each framing member so fastening surfaces vary not more than 1/8 inch from the plane formed by faces of adjacent framing.

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SECTION 09 29 00

GYPSUM BOARD

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Interior gypsum board.
2. Tile backing board

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Store materials inside under cover and keep them dry and protected against weather, condensation, direct sunlight, construction traffic, and other potential causes of damage. Stack panels flat and supported on risers on a flat platform to prevent sagging.

1.5 FIELD CONDITIONS

A. Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written recommendations, whichever are more stringent.

B. Do not install interior products until installation areas are enclosed and conditioned.

C. Do not install panels that are wet, moisture damaged, and mold damaged.
1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.

B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated, according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency in accordance with UL assembly.

2.2 GYPSUM BOARD, GENERAL

A. Size: Provide in maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

2.3 INTERIOR GYPSUM BOARD

A. Abuse-Resistant Gypsum Board: ASTM C 1396/C 1396M gypsum board, tested according to ASTM C 1629/C 1629M.
   1. Basis of Design Product Subject to compliance with requirements, provide National Gypsum Company; Gold Bond BRAND Hi-Abuse® XP Gypsum Board, or comparable product by one of the following:
      a. CertainTeed Corporation.
      b. Continental Building Products, LLC.
      c. Georgia-Pacific Gypsum LLC.
      d. USG Corporation.
   2. Core: 5/8 inch, Type X.
   3. Surface Abrasion: ASTM C 1629/C 1629M, meets or exceeds Level 2 requirements.
   4. Indentation: ASTM C 1629/C 1629M, meets or exceeds Level 1 requirements.
   5. Soft-Body Impact: ASTM C 1629/C 1629M, meets or exceeds Level 1 requirements.
   6. Long Edges: Tapered.
   7. Mold and Moisture Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3274.

2.4 TILE BACKING PANELS

A. Cementitious Backer Units: ANSI A118.9 and ASTM C 1288 or ASTM C 1325, with manufacturer's standard edges.
   1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
      a. CertainTeed Corporation.
      b. Custom Building Products.
      c. James Hardie Building Products, Inc.
      d. National Gypsum Company.

e. USG Corporation.
2. Thickness: 5/8 inch.

2.5 TRIM ACCESSORIES

A. Interior Trim: ASTM C 1047.
1. Material: Galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized steel sheet.
2. Shapes:
a. Cornerbead.
b. LC-Bead: J-shaped; exposed long flange receives joint compound.
c. L-Bead: L-shaped; exposed long flange receives joint compound.
d. U-Bead: J-shaped; exposed short flange does not receive joint compound.

B. Aluminum Trim: Extruded accessories of profiles and dimensions indicated.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
a. Fry Reglet Corp.
b. Gordon, Inc.
c. Pittcon Industries.
2. Aluminum: Alloy and temper with not less than the strength and durability properties of ASTM B 221, Alloy 6063-T5.
3. Finish: Corrosion-resistant primer compatible with joint compound and finish materials specified.

2.6 JOINT TREATMENT MATERIALS

A. General: Comply with ASTM C 475/C 475M.

B. Joint Tape: Provide Fire and non-fire rated type to suit application.
1. Interior Gypsum Wallboard: Paper.
2. Tile Backing Panels: As recommended by panel manufacturer.

C. Joint Compound for Interior Gypsum Wallboard: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.
1. Prefilling: At open joints, rounded or beveled panel edges, and damaged surface areas, use setting-type taping compound.
2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use setting-type taping or drying-type, all-purpose compound.
a. Use setting-type compound for installing paper-faced metal trim accessories.
3. Fill Coat: For second coat, use setting-type, sandable topping compound or drying-type, all-purpose compound.
4. Finish Coat: For third coat, use setting-type, sandable topping compound or drying-type, all-purpose compound.
5. Skim Coat: For final coat of Level 5 finish, use setting-type, sandable topping compound or drying-type, all-purpose compound.

D. Joint Compound for Tile Backing Panels:

1. Cementitious Backer Units: As recommended by backer unit manufacturer.

2.7 AUXILIARY MATERIALS

A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.

B. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.

C. Steel Drill Screws: ASTM C 1002, unless otherwise indicated.
   1. Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch thick.
   2. For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.

D. Sound Attenuation Blankets: ASTM C 665, Type I (blankets without membrane facing) produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool.
   1. Fire-Resistance-Rated Assemblies: Comply with mineral-fiber requirements of assembly.

E. Acoustical Sealant: Manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C 834. Product effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.

F. Thermal Insulation: As specified in Section 072100 "Thermal Insulation."

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and substrates including welded hollow-metal frames and support framing, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.

B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 APPLYING AND FINISHING PANELS, GENERAL

A. Comply with ASTM C 840.

B. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.

C. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch of open space between panels. Do not force into place.

D. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.

E. Form control and expansion joints with space between edges of adjoining gypsum panels.

F. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.
   1 Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. in area.
   2 Fit gypsum panels around ducts, pipes, and conduits.
   3 Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4- to 3/8-inch-wide joints to install sealant.

G. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments, except floors. Provide 1/4-to 1/2-inch-wide spaces at these locations, and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.

H. Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.

I. STC-Rated Assemblies: Seal construction at perimeters, behind control joints, and at openings and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions at perimeters and through penetrations. Comply with ASTM C 919 and with manufacturer's written recommendations for locating edge trim and closing off sound-flanking paths around or through assemblies, including sealing partitions above acoustical ceilings.

J. Install sound attenuation blankets before installing gypsum panels, unless blankets are readily installed after panels have been installed on one side.

3.3 APPLYING INTERIOR GYPSUM BOARD

A. Install interior gypsum board in locations indicated on Drawings.

B. Single-Layer Application:
   1. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing, unless otherwise indicated.
   2. On partitions/walls, apply gypsum panels as indicated or required by fire-resistance-rated assembly, and minimize end joints.
      a. Stagger abutting end joints not less than one framing member in alternate courses of panels.
      b. At stairwells and other high walls, install panels horizontally, unless otherwise indicated or required by fire-resistance-rated assembly.
   3. On Z-furring members, apply gypsum panels vertically (parallel to framing) with no end joints. Locate edge joints over furring members.
   4. Fastening Methods: Apply gypsum panels to supports with steel drill screws.

C. Multilayer Application:

1. On ceilings, apply gypsum board indicated for base layers before applying base layers on walls/partitions; apply face layers in same sequence. Apply base layers at right angles to framing members and offset face-layer joints 1 framing member, 16 inches minimum, from parallel base-layer joints, unless otherwise indicated or required by fire-resistancerated assembly.
2. On partitions/walls, apply gypsum board indicated for base layers and face layers vertically (parallel to framing) with joints of base layers located over stud or furring member and face-layer joints offset at least one stud or furring member with base-layer joints, unless otherwise indicated or required by fire-resistance-rated assembly. Stagger joints on opposite sides of partitions.
3. On Z-furring members, apply base layer vertically (parallel to framing) and face layer either vertically (parallel to framing) or horizontally (perpendicular to framing) with vertical joints offset at least one furring member. Locate edge joints of base layer over furring members.
4. Fastening Methods: Fasten base layers and face layers separately to supports with screws.

D. Laminating to Substrate: Where gypsum panels are indicated as directly adhered to a substrate (other than studs, joists, furring members, or base layer of gypsum board), comply with gypsum board manufacturer's written recommendations and temporarily brace or fasten gypsum panels until fastening adhesive has set.

E. Curved Surfaces:
1. Install panels horizontally (perpendicular to supports) and unbroken, to extent possible, across curved surface plus 12-inch-long straight sections at ends of curves and tangent to them.
2. For double-layer construction, fasten base layer to studs with screws 16 inches o.c. Center gypsum board face layer over joints in base layer, and fasten to studs with screws spaced 12 inches o.c.

3.4 APPLYING TILE BACKING PANELS

A. Cementitious Backer Units: ANSI A108.11, at locations indicated to receive tile.

B. Where tile backing panels abut other types of panels in same plane, shim surfaces to produce a uniform plane across panel surfaces.

3.5 INSTALLING TRIM ACCESSORIES

A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.

B. Control Joints: Install control joints according to ASTM C 840 and in specific locations approved by Architect for visual effect at ceiling and wall intersections.
1. Ceilings: Provide perimeter relief at ceiling perimeters maximum surface dimension not to exceed 50 feet.
2. Walls: Provide control joints maximum of 30 feet on center.
3. At “L”, “T” or “U” shaped intersections verify joint locations with the Architect prior to starting board installation.

3.6 FINISHING GYPSUM BOARD

A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.

B. Prefill open joints and damaged surface areas.

C. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.

D. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840:
   1. Level 2: Ceiling plenum and other concealed areas.
   2. Level 4: Storage and Mechanical areas.
   3. Level 5: All other areas. Level 5 finish may be achieved by finishing joints to Level 5 finish and applying one of the following surfacers to achieve 13 mil DFT (minimum):
      a. “Tuff-Hide Primer-Surfacer”; USG.
      b. ProForm Brand “Surfacer/Primer”; National
   4.

E. Moisture resistant board shall be finished to same requirements as above with addition of skim coat over entire board surface as required to prepare for finishes.

F. Cementitious Backer Units: Finish according to manufacturer's written instructions.

3.7 PROTECTION

A. Protect adjacent surfaces from drywall compound and promptly remove from floors and other non-drywall surfaces. Repair surfaces stained, marred, or otherwise damaged during drywall application.

B. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.

C. Remove and replace panels that are wet, moisture damaged, and mold damaged.
   1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
   2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

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2.10 SEQUENCE OF OPERATION

A. Host Computer and Operator's Work Station (OWS)

1. The host computer and accessories shall be located in Cust. Office 123 as shown on the drawings. The computer and all peripheral equipment shall be furnished by the Owner.

2. Coordinate required capacity and features with the Owner's IT representative.

3. All control programs and application features shall reside in the OWS.

4. Control manufacturer shall provide subsequent levels of control capability to whatever extent necessary to achieve performance required for individual units in their respective local control panels. All ATC panels shall be wired to the nearest source of power at 277/1. Coordinate with the work of Division 26 – Electric.

5. Work with the Owner to establish occupied/unoccupied schedules and setpoints. Enter the schedules and setpoints into the system. Provide the required number of input/output points to achieve the specified sequences of operation and monitoring points.

6. Work with the Owner to determine which points shall be trended and the sampling frequency. Set up the trend logs in the BAS.

B. Dual Temperature Loop Summer/Winter Changeover Control:

1. The BAS shall provide control of summer/winter changeover. Provide two way control valves in the boiler room and throughout the piping system to isolate the hot water and chilled water systems as well as heating-only terminal units in the building. Blocking valves shall be actuated open/closed with failure to last controlled position.

2. Summer Mode:

   a. When the system is manually put in the "summer" mode, the isolation control valves shall be positioned to allow chilled water into the dual temperature loop and to isolate the hot water boilers and heating terminal units from the dual temperature loop. Before the chilled water isolation valves open, the dual temperature loop temperature must be below the programmed setpoint of 88°F, adjustable, in order to prevent damage to the chiller as well as condensation in the heating units.

   b. At each end-of-main location, provide a two-way blocking valve at the crossover piping balancing valve. When the plant is in the cooling mode, these valves shall be open.

   c. Provide an end switch on each valve actuator. The chilled water system shall not be activated until the isolation valves are in the proper position. Display the end switch positions at the OWS. If the valve's end switch does not coincide with the commanded position of the valve, provide an alarm at the OWS and lock out the chiller start sequence.

3. Winter Mode:

   a. When the system is manually put in the "winter" mode, the isolation control valves shall be positioned to isolate the chiller from the dual temperature loop while opening the hot water system isolation valves and terminal heating unit isolation valves to the dual temperature loop. Before the isolation valves open, the dual temperature loop temperature must be above the programmed setpoint of 65˚F (adj.).

   b. When the plant is in the heating mode, the end-of-main blocking valves described in paragraph B.2.b shall be closed.

c. Provide an end switch on each valve actuator. The hot water system shall not be activated until the isolation valves are in the proper position. Display the end switch positions at the OWS. If a given valve's end switch does not coincide with the commanded position of the valve, provide an alarm at the OWS and lock out the boilers start sequence.

4. Loop changeover shall be subject to manual selection based on schedule, loop temperature and outside air temperature, all adjustable.

5. If the dual temperature loop supply temperature sensor does not detect hot of chilled water being supplied to the building equipment, the units shall be disabled. In "heating mode", supply water temperature should be above 90˚F (adj.). In "cooling mode", the temperature should be below 65˚F (adj).

6. The following items shall be displayed at the OWS:

   a. Graphical display of the dual temperature system and related piping.
   b. Current system setting – summer/winter.
   c. End switch status for each isolation valve.
   d. Commanded status for each isolation valve.
   e. Isolation valve failure status.
   f. Outside air temperature, global.
   g. Outside air temperature setpoints for automatic changeover.
   h. Dual temperature loop discharge and return temperatures.
   i. Chilled water system supply and return temperatures.
   j. Hot water system supply and return temperatures.

C.1 Heating System Control:

1. This system consists of two boilers, B-1 and B-2, each with boiler circulating pumps BP-1 and BP-2, primary loop isolation valves, and building dual temperature heating/cooling pumps P-1 and P-2. Each boiler is equipped with a burner suitable of using natural gas.

   a. Each boiler's combustion system shall be controlled by its integral burner controls. The boilers shall be activated/de-activated via the BAS based on outdoor air temperature, or via manual command at the OWS. Once activated, the boilers' integral controls shall maintain setpoint of the system (140˚F, adj.).

2. Whenever the outdoor air temperature is at or below 50°F, adjustable, boilers B-1 shall be enabled and B-2 shall be on standby. On a call for boiler B-1 to operate, the system isolation valves shall be commanded open, Article 'F', on a proof of open via valve end switch the boiler shall be enabled. B-2 shall remain in standby. If boiler B-1 cannot maintain hot water supply setpoint boiler B-2 shall be enabled to operate. The BAS shall stage the boilers to maintain optimum efficiency and hot water supply temperature at setpoint.

3. The boiler control panel shall provide boiler modulation, boiler pump operation, and diagnostics. The BAS shall monitor boiler inlet/outlet and outside air temperature.

4. When the boiler's integral controls are activated, Pump BP-1 or BP-2 shall be activated, and the system isolation valves shall open (proven). A current switch on one phase of power feeding the boiler pumps shall monitor flow status at the OWS. If pump operation is not indicated, and the boiler did not fire or isolation valves open, deactivate the boiler and activate the second (back-up) boiler; generate a boiler alarm at the OWS.

   a. The BAS shall receive a general boiler failure alarm from a set of dry contacts, which are provided by the boiler manufacturer. This alarm shall be annunciated at the OWS.

b. The BAS shall rotate the lead and lag boiler/pump set to equalize the accumulated run time.

5. A winter boiler freeze setpoint will activate boiler sequence regardless of time schedule whenever outdoor temperature drops below 32˚F (adj.).

6. Provide hot water discharge and return temperature sensors for each boiler.

7. BAS Contractor shall provide all field control wiring for control panels, header temperature sensors, and boiler controller.

8. Provide system software in the OWS to monitor and trend weather and building response time to initiate morning warm-up cycles in sufficient time to establish occupied space temperatures before actual occupancy occurs.

9. The following items shall be displayed at the OWS:

   a. Graphical display of the boilers, pumps, and related piping.
   b. Boiler activated/de-activated status, each boiler.
   c. Boiler failure, each boiler.
   d. Outside air temperature.
   e. Outside air temperature setpoint for boiler activation (adjustable).
   f. Boiler discharge temperature, each boiler.
   g. Boiler return temperature, each boiler.
   h. Pump water flow status/alarm, each pump via current switch.
   i. Status of each isolation valve: open/closed.
   j. Primary loop pump flow status/alarm: via VFD alarm/status contact and frequency feedback signal.

C.2 Make-Up Water Monitoring System Control

1. Provide system control for the make-up water serving the dual temp heating and cooling system in the plant.

2. Provide a water flow meter on the make-up water supply. When the measured flow exceeds 10 gallons/minute, adjustable, close the normally open solenoid valve, generate an alarm at the OWS, and shut down the boilers, pumps, chiller, and auxiliaries affected.

3. Flow sensor, consisting of a removable flow sensor mounted in a cast-bronze housing, available in ½" to 1-1/2" pipe size. Sensor shall be rated for a flow range of 0.5 to 15 feet per second, 220°F max., 400 psig at 100°F maximum pressure; Nylon impeller, Pennlon bearing, tungsten carbide shaft, PPS housing and EPDM seals. Manufacturer: Kele Model 250B.

4. Programmable analog flow transmitter shall be a loop-powered device that converts a flow sensor signal into a linear 4 – 20mA signal, with electronic signal dampening, computer programmable, and compact size in a metal enclosure. Power input, 9-35 VDC/0-1 kHz, 75 ohms at 24 VDC, accuracy of 0.1% of full scale. Manufacturer: Kele Model 310-02.

5. The following items shall be displayed at the OWS:
   a. Water flow in gallons per minute.
   b. Command signal to the valve.
   c. High flow/equipment shut down alarm.

D. Primary Dual Temperature Heating/Cooling Water Pumps Control:

1. Pumps P-1 and P-2 shall be controlled directly by the BAS per a lead/lag sequence with the designated lead pump alternated on a minimum weekly basis, or as reset at the OWS. The designated lead pump shall be activated as part of the heating or cooling water system. The pumps shall also be subject to a

manual command at the OWS.

a. Each pump shall be provided with a VFD as part of the work of Division 26 - Electric. The VFD on the pump shall modulate, in response to the differential pressure sensor to maintain a constant differential pressure of 7-10 psig. The BAS shall provide a differential sensor for this purpose near the last coil in the dual temperature water circuit. The differential pressure setpoint shall be adjustable at the OWS.

b. A differential pressure switch shall be located across the common discharge and return of the loop pumps for flow status monitoring and alarming.

2. Monitor flow status via VFD alarm/status contact and frequency feedback signal at the OWS.

3. Once activated, the designated lead pump shall run continuously. If the lead pump fails, after a 20 second time-delay, the lag pump shall be energized after an alarm is sent to the OWS. After the cause of the failure is corrected, a manual command from the OWS is required to restore normal operation.

4. The designated lead pump shall be enabled whenever the building heating or cooling system is activated, as programmed through the BAS.

a. When the system is manually put in the “winter” mode, the lead pump shall operate through its variable speed drive to provide full flow equal to 60 Hertz on the drive output. The pump speed shall change in response to system pressure changes as described in Paragraph 1.a as terminal unit two-way control valves close off to the system.

b. When the system is manually put in the “summer” mode, the lead pump shall operate through its variable speed drive to provide full flow equal to the scheduled chiller evaporator gpm. Coordinate this calibration point during the TAB agenda of the work. To avoid the chiller evaporator low temperature alarm, maintain the speed/hertz setpoint at this gpm on a constant basis.

5. The following items shall be displayed at the OWS:

a. Graphical display of pumps and related piping.
b. Outside air temperature.
c. Designated lead and lag pumps (i.e.: Pump P-1 Lead - Pump P-2 Lag).
d. Pump command start/stop.
e. Commanded status of each pump via VFD alarm/status contact and frequency feedback signal.
f. Flow status/alarm via differential pressure switch.
g. Dual temperature loop discharge and return temperature.

E. Chilled Water System Control:

1. This system consists of one air-cooled water chiller, CH-1, dual temperature loop pumps P-1 and P-2, and interconnecting piping and accessories. Chiller shall start/stop as programmed by the BAS. Pumps P-1 and P-2 shall be controlled directly by the BAS per a lead/lag sequence as described in article D.

2. When the system is scheduled to operate and outdoor air temperature is at or above the programmed setpoint of 60°F, adjustable, system control sequence shall be activated. The system can also be manually activated via a software switch at the OWS. Additionally, the chilled water system activation shall be subject to the summer/winter changeover sequence described under ‘Dual Temperature Isolation Valves’.

3. When the chiller control sequence is activated, the chilled water pump shall be energized. When water flow is proven through each pump, via a current switch, the chiller’s factory controller shall be activated to maintain its integral setpoint of 44°F, adjustable.

a. Chiller controller shall activate factory installed heat tape on the evaporator whenever chiller is off and outside air temperature is at or below 35°F, adjustable. Verify setting and operation per chiller manufacturer's written instructions.

4. The BAS shall limit the chiller on-time to a minimum of 10 minutes. The minimum off-time for the chiller shall be 20 minutes. Timing set-points are adjustable, and final setting must be approved by the chiller manufacturer.

5. The OWS shall be able to interface all inputs, monitor alarms, and change setpoints.

6. The BAS shall monitor chilled water discharge and return temperatures for display at the OWS.

7. BAS Contractor shall provide all field control wiring for operation of the chiller.

8. The following items shall be displayed at the OWS:

   a. Graphic depicting equipment, piping layout and temperature control devices with dynamic display of each status, temperature, etc.
   b. Chilled water discharge and return temperature at the chiller.
   c. Common chilled water supply and return water temperatures.
   d. Alarm/status inputs for chiller.
   e. Chilled water pump start/stop command and status via current switch.
   f. Chilled water pump flow/alarm per pump via current switch.
   g. Chiller on/off command and status.
   h. Heat tape status.

F. Dual Temperature Isolation Valves

1. Furnish dual temperature isolation valves as shown on the drawings. During heating season, the hot water isolation valves shall be open to the dual temperature piping and the chilled water isolation valves shall be closed. During cooling season, the chilled water isolation valves shall be open and the hot water isolation valves shall be closed. Heating and cooling valves shall be commanded from separate and individual outputs. When switching between heating and cooling, implement an adjustable time delay initially set to 12 hours to allow the dual temperature loop to reach ambient temperature before mixing with primary systems. If any valve doesn't prove open via end switch, an alarm shall be displayed at OWS.

2. The following items shall be displayed at the OWS:

   a. Individual zones showing isolation control valves and commanded position.
   b. Operator selection to set heating/cooling position of each isolation control valve of each zone.

G. Domestic Water Heater System Control

1. The domestic water heater located in the MER shall be activated by its integral temperature controls. The heater is equipped with sealed combustion air control which does not require any further control interface. The BAS to provide enable/disable control of heaters based on a time schedule.

2. Provide a hot water discharge sensor for monitoring, high/low limit alarms for the heater and for the hot water circulating loop. The OWS shall receive a general status/failure alarm from the domestic water heater for monitoring and alarm generation at the OWS. Set the high/low limit alarms to suit system operation and water loop.

3. Provide on/off control of the domestic hot water circulating pump based on a schedule furnished by the Owner. Provide a current switch on one phase of power to the pump for monitoring and alarm generation. If the pump is commanded on and flow is not detected, after a 20-second delay, provide an alarm at the

OWS.

4. The following items shall be displayed at the OWS:

   a. Domestic water heater activated/deactivated.
   b. Domestic hot water discharge temperature.
   c. High/Low discharge temperature alarm, heater and loop.
   d. General failure signal.
   e. Commanded status of domestic hot water circulator pump.
   f. Pump flow status/failure alarm.

H1. Mech Rm 122 Heating and Ventilation System Control

1. This system consists of unit heaters UH-A2 and UH-A3, and duct mounted exhaust fan EF-A5, and outside air intake OAI-A1. Provide motor operated dampers and actuators for control of exhaust and outside air in the room. Provide space temperature sensor as shown on the drawings.

2. On a rise in space temperature above 80°F, adjustable, the exhaust air and outside air dampers shall open. Subject to a limit switch on the exhaust air damper, the exhaust fan shall start. On a fall in space temperature below setpoint, the fan shall be de-energized and all dampers shall close.

3. On a fall in space temperature below 60°F, adjustable, room sensor shall energize the fan on the unit heater to run. On a rise in space temperature, the reverse shall occur.

4. The following items shall be displayed at the OWS:

   a. Space temperature.
   b. Low temperature alarm, 40°F, adjustable.
   c. High temperature alarm, 100°F, adjustable.
   d. Heating setpoint.
   e. Ventilation setpoint.
   f. Commanded status of exhaust fan and dampers.
   g. Commanded status of unit heater fan.

H.2 Storage 121 Heating and Ventilation System Control

1. This system consists of unit heater UH-A1 and duct mounted exhaust fan EF-A6, and outside air intake OAI-A2. Provide motor operated dampers and actuators for control of exhaust and outside air in the room. Provide space temperature sensor as shown on the drawings.

2. On a rise in space temperature above 80°F, adjustable, the exhaust air and outside air dampers shall open. Subject to a limit switch on the exhaust air damper, the exhaust fan shall start. On a fall in space temperature below setpoint, the fan shall be de-energized and all dampers shall close.

3. On a fall in space temperature below 60°F, adjustable, room sensor shall energize the fan on the unit heater to run. On a rise in space temperature, the reverse shall occur.

4. The following items shall be displayed at the OWS:

   a. Space temperature.
   b. Low temperature alarm, 40°F, adjustable.
   c. High temperature alarm, 100°F, adjustable.
   d. Heating setpoint.
   e. Ventilation setpoint.
   f. Commanded status of exhaust fan and dampers.
   g. Commanded status of unit heater fan.

I. Fan Coil Unit Control

1. Each unit shall be controlled by an individual DDC Controller. The DDC Controller shall be wired to a space temperature sensor with setpoint adjustment and override switch (Microtouch). Provide all sensors required for operation, monitoring, and control of each unit; interface with the 24-volt control transformer furnished with the unit. Provide a 2-way control valve for the dual temperature coil for installation by the Mechanical Contractor. The DDC Controller shall be provided by ATC and field installed.

2. During the programmed occupied mode, the fan shall run continuously, but will have the ability to cycle on/off with a call for heating or cooling.

    a. Provide motor operated dampers and actuators for units which are directly connected to a source of outside air for ventilation. Each damper shall open fully during the occupied mode and remain closed during the unoccupied mode.

    b. Heating mode: On a fall in space temperature below the programmed heating setpoint of 70°F, adjustable, the coil control valve shall modulate open to the coil. On a rise in space temperature, the valve shall modulate closed. The valve shall be under further control of a high limit discharge air temperature sensor with setpoint at 100°F, adjustable, to prevent damage to the unit's components. Provide an alarm at the OWS if the discharge air temperature rises above the high limit setpoint.

    c. Cooling mode: On a rise in space temperature above the programmed cooling setpoint of 75°F, adjustable, the coil control valve shall modulate open. On a fall in space temperature, the valve shall modulate closed to the coil.

3. During the programmed unoccupied mode, the fan shall cycle and the control valve shall modulate in sequence to maintain the programmed unoccupied space temperature setpoints of 60°F (heating) and 85°F (cooling), all adjustable. When the override switch on the room sensor is activated, the unit shall be controlled as outlined in item 2 above for a minimum 2-hour period, adjustable at the OWS. Once the override cycle times out, the unit shall reset to the unoccupied mode of operation.
4. If the discharge temperature fails to rise to a programmed minimum temperature during a call for heating, a low temperature alarm shall be activated at the OWS. If the discharge temperature fails to fall to a programmed minimum temperature on a call for cooling, a high temperature alarm shall be activated at the OWS.

5. Provide a current switch on one phase of power feeding the supply fan for status indication at the OWS.

6. Provide a condensate sensor in the auxiliary drain pan below each unit. When condensate is detected in the pan, close the coil control valve, deactivate the unit supply fan, and provide an alarm at the OWS.

7. The following items shall be displayed at the OWS:

    a. Global outside air temperature.
    b. Space temperature.
    c. Space temperature setpoint.
    d. Discharge temperature.
    e. High and low limit discharge air setpoints.
    f. Commanded status of fan.
    g. Operational status of fan via current switch.
    h. Commanded status of each control valve.
    i. Low discharge temperature alarm.
    j. High discharge temperature alarm.
    k. Condensate alarm.

l. Diagram showing the layout of the unit with major components and dynamic temperatures shown where temperature sensors exist in the system.

J. Cabinet Unit Heater Control

1. Each cabinet unit heater shall be controlled by the BAS via a space temperature sensor.

   a. Provide a separate DDC controller and flat plate space sensor for each unit; no override switch is required.
   b. Provide a 2-way, hot water control valve for installation in the unit by the Mechanical Contractor.

2. During the programmed occupied mode, the unit fan shall cycle. On a fall in space temperature below the programmed setpoint of 65°F, adjustable, the hot water coil control valve shall open. On a rise in temperature above setpoint, the valve shall close.

3. During the programmed un-occupied mode, the fan shall cycle and the hot water coil control valve shall open to maintain the programmed temperature setpoint of 60°F, adjustable.

4. If the discharge temperature fails to rise to a programmed minimum temperature during a call for heating, a low temperature alarm shall be activated at the OWS.

5. Provide a current switch on one phase of power feeding the supply fan for status indication at the OWS.

6. The following items shall be displayed at the OWS:

   a. Space temperature.
   b. Space temperature setpoint.
   c. Discharge temperature.
   d. Commanded status of fan.
   e. Operational status of fan via current switch.
   f. Commanded status of control valve.
   g. Low discharge temperature alarm.

   h. Diagram showing the layout of the unit with major components and dynamic temperatures shown where temperature sensors exist in the system.

K. Unit Heater Control

1. Each unit heater shall be controlled by the BAS via a space temperature sensor.

   a. Provide a separate DDC controller and flat plate space sensor for each unit; no override switch is required.

2. The unit fan shall cycle to maintain the programmed setpoint of 65°F, adjustable.

3. Provide a current switch on one phase of power feeding the unit fan for status indication at the OWS.

4. The following items shall be displayed at the OWS:

   a. Space temperature.
   b. Space temperature setpoint.
   c. Commanded status of fan.
   d. Operational status of fan via current switch.

L. Zone Heating Duct Coil Control

1. Duct coils shall be controlled by an individual DDC Controller and space temperature sensor. Provide space sensor and two-way control valve for each coil.

2. Sensor shall modulate the heating coil control valve to maintain space temperature at 75°F, adjustable.

3. The following items shall be displayed at the OWS:

   a. Space temperature.
   b. Space temperature setpoint.
   c. Discharge air temperature.
   d. Commanded status of control valve.

M. Ductless Split System Unit Control:

1. The following sequence is typical for all of the systems scheduled on the drawings.

2. Each unit shall be controlled by its factory controls. Adjust factory controls to allow the indoor unit fan to cycle off once space temperature is achieved. Mount and wire the thermostat, which is furnished by the equipment manufacturer, and interlock the controls from the indoor unit to the outdoor unit. Set to maintain 75°F, adjustable.

   a. On units equipped with direct connected outside air, provide a motor operated damper and actuator for the intake air hood or other opening as shown on the drawings.

   b. Whenever the system is activated and the indoor unit supply fan is running, outside air damper shall open fully. Damper shall close when the system is deactivated and the indoor unit supply fan stops.

3. Provide a space mounted temperature sensor for monitoring and alarm generation at the OWS. On a rise in space temperature above the programmed high limit setpoint of 80°F, adjustable, an alarm shall be activated. On a fall in space temperature below the programmed low limit setpoint of 50°F, adjustable, an alarm shall be activated.

4. The following items shall be displayed at the OWS:

   a. Space temperature.
   b. High and low limit alarms and setpoints.
   c. Commanded status of outside air damper.

N.1 Kitchen Hood Exhaust Fan & Make-Up Air Unit Control:

1. This system consists of EF-A1, MAU-A1, and ventilator item 16 as shown on the drawings.

2. The hood exhaust fan and make-up air unit shall be energized manually by an on/off switch provided as part of the hood. Interface with this switch in accordance with hood manufacturer's written instructions.

   a. Mount the remote temperature sensor furnished with the hood as shown on the drawings.

3. The kitchen equipment manufacturer shall provide the BAS Contractor with wiring diagrams for the hood and all factory sensors.

4. The following items shall be provided by the make-up air unit manufacturer:

   a. Motor starter and overload protection.
   b. Outside air damper and actuator with end switch.
   c. Remote control panel.
   d. Terminal blocks for all wiring connections between equipment and control devices.

5. Whenever fan switch is engaged in the 'ON' position, the exhaust fan and make-up air supply fan shall be energized.

    a. Provide a current switch on one phase of the power feeding the exhaust fan. When current is sensed, indicating that the exhaust fan has been energized, the make-up air unit outside air damper shall open 100% and the supply fan shall be energized.

    b. On a fall in discharge air temperature below setpoint of 65°F, adjustable, the gas heat shall stage and modulate through its unit-mounted controls to maintain setpoint. Discharge air temperature shall be manually adjustable through the remote-control panel furnished with the makeup air unit.

    c. The supply fan shall not be energized until the damper is in the open position. Display the end switch position at the OWS. If the end switch does not coincide with the commanded position, provide an alarm at the OWS.

6. Provide a current switch on one phase of power feeding the supply fan for monitoring and alarm generation at the OWS.

7. The system shall prevent the circulation of smoke. Upon activation of the duct smoke detector in the supply air ducts in the vicinity of the hood, the unit shall stop and all dampers shall close. The Mechanical Contractor shall install duct smoke detector furnished as part of the work of Division 26 – Electric.

8. Interface with a common fire alarm input to the BAS system from the fire alarm system (FAS). The fire alarm contact shall be provided by the fire alarm system vendor at the FAS panel. The status of the alarm contact shall be communicated throughout the BAS. When the fire alarm contact indicates an alarm condition, the BAS shall de-energize the supply fan, exhaust fan, gas heat and damper motors. When de-energized, the damper motor shall spring return the outside air damper closed. NOTE: the FAS shall also shut down the unit whenever the room CO (carbon monoxide) detector goes into alarm.

    a. If the kitchen ventilator exhaust fan is running and the hood fire suppression system is activated manually, the exhaust fan shall continue to run until deactivated by the FAS or manually shut down at the hood.

    b. The MAU shall shut down whenever the hood suppression system or fire alarm system is activated. Provide interface with each system.

9. The following items shall be displayed for each system at the OWS:

    a. Discharge air temperature.
    b. Discharge air temperature setpoint.
    c. Discharge low limit alarm.
    d. Fire alarm system status alarm.
    e. Commanded status of fans and damper.
    f. Supply fan operational status via current switch.
    g. Exhaust fan operational status via current switch.
    h. Smoke detector status/alarm.
    i. Diagram showing the layout of the equipment with major components and dynamic temperatures shown where temperature sensors exist in the system.

N.2 Dish Washer Exhaust Fan Control

1. The sequence that follows is typical for fans EF-A3. Provide a motor operated damper and actuator as shown on the drawings. The damper shall be installed by the Mechanical Contractor. Fan shall run subject to a limit switch on the exhaust air damper, once activated.

2. Provide a current switch on one phase of power feeding the dishwasher unit. Upon activation of the dishwasher, the exhaust fan shall start and run as long as the dishwasher is energized.

3. Provide a current switch on one phase of power feeding the fan for status indication at the OWS.

4. The following items shall be displayed at the OWS:

   a. Fan status via current switch: on/off/alarm.
   b. Commanded status of fan and damper.

N.3 Exhaust Fan EF-D2 and EF-D3 Control

1. Each exhaust fan shall be energized by a motion sensor provided by Division 26 - Electric.

2. Provide a motor operated damper and actuator for each fan as shown on the drawings. The damper shall be installed by the Mechanical Contractor.

3. Subject to a limit switch on the exhaust air damper, the fan shall run continuously when activated.

N.4 Exhaust Fan Control

1. The sequence that follows is typical for fans EF-A2, A4, and D1. Coordinate schedule with the zone rooftop unit serving the area where these fans are shown on the drawings.

2. Each exhaust fan shall be energized during the occupied period and de-energized during the unoccupied period via the BAS. The damper shall be open during the occupied mode and shall be closed during the unoccupied mode.

3. Provide a motor operated damper and actuator for each exhaust fan as shown on the drawings. The damper shall be installed by the Mechanical Contractor.

4. Subject to a limit switch on the exhaust air damper, the fan shall run continuously during the occupied mode.

5. Provide a current switch on one phase of power feeding the fan for status indication at the OWS.

6. Interface with a common fire alarm input to the BAS system from the fire alarm system (FAS). When the FAS indicates an alarm condition, the BAS shall de-energize the fan and close the exhaust air damper.

7. The following items shall be displayed at the OWS:

   a. Fan status via current switch: on/off/alarm.
   b. Commanded status of fan and damper.

O. Air Handling Unit Control - Two Pipe/DX Unit:

1. The sequence that follows is for units AHU-A1/ACC-A3. The unit is a constant volume system with minimum outside air and economizer mode of operation. Unit shall be controlled by an individual DDC Controller. The DDC controller shall be wired to a space temperature sensor with setpoint adjustment and override switch (Microtouch), discharge air temperature sensor, mixed air temperature sensor, return air temperature sensor, global outside air temperature/humidity/enthalpy sensor, and low limit thermostat. Provide all sensors required for operation, monitoring and control of unit. Provide a 2-way control valve for the dual temperature coil for installation by the Mechanical Contractor.

   a. Interface unit with its scheduled air-cooled condensing unit.
   b. Provide actuators for dampers in the mixing box, relief air damper, and damper at wall louver.

2. During the programmed occupied mode, the supply fan shall run continuously with the outside air damper open at the louver. Delay opening the outside air damper to its minimum position until the zone space temperature has recovered from its setback or setup temperature setting. The return air damper shall move in unison with the outside air damper to maintain the balance of air in the system. Once this condition is achieved, the outside air damper shall remain closed until the space CO2 level rises to 700 ppm. OWS shall be able to override fan from constant operation to cycle fan.

    a. On a rise in CO2 level above 700 ppm, the outside air damper shall open gradually to its first minimum position as scheduled on the drawings. The return air damper shall move in unison to maintain the balance of the air in the unit. Relief air dampers shall open.

    b. On a continued rise in CO2 level above 900 ppm, activate an alarm at the Controller.

    c. On a decrease in CO2 level below 700 ppm, the outside air damper shall revert back to the closed position, while return air damper opens fully to maintain the balance of air in the unit. Relief air dampers shall close.

3. Cooling Mode:

    a. On a rise in space temperature above the programmed cooling set-point, 75°F, adjustable, the control valve shall modulate open to maintain set-point to the extent of the water coil capacity in cooling mode as first stage of cooling. The DX system shall be locked out.

    b. On a continued rise in space temperature, the dual temperature control valve shall close, and the controller shall activate the DX cooling system. On a fall in temperature the reverse shall occur.

4. The mixing box economizer sequence shall be activated as the first stage of cooling. The DDC controller shall receive input from the Global outside air temperature sensor. Whenever outdoor air temperature is below 57˚F (adj.), the economizer control shall be enabled. On a rise above 62˚F (adj.), the economizer control shall be disabled. The mixing box dampers shall maintain a mixed air temperature of 50˚F (adj.).

    a. The outside air damper shall continue to open up to 100% outside air to satisfy cooling demand. The return damper shall move in unison to maintain the balance of air in the system. The outside air damper shall never close past the minimum position during the occupied period. Relief air damper shall open.

5. Heating Mode:

    a. On a fall in space temperature below the programmed heating set-point, 70°F, adjustable, the control valve shall modulate open to the coil. On a rise in space temperature, the valve shall modulate closed. The valve shall be under further control of a high limit discharge air temperature sensor with setpoint at 100°F, adjustable, to prevent damage to the unit's components. Provide an alarm at the OWS if the discharge air temperature rises above the high limit setpoint.

    b. If space temperature rises above 75°F, adjustable, the 2-way control valve shall close to the coil, and the DX cooling system shall be activated to maintain space setpoint. The reverse shall occur when the space temperature falls to heating setpoint.

6. During the programmed unoccupied modes, the fan shall cycle and the control valve & DX cooling system shall modulate in sequence to maintain the programmed unoccupied space temperature set-points, 85°F cooling/60°F heating, all adjustable. When the override switch on the room sensor is activated, the unit shall be controlled as outlined above for a minimum 2-hour period, adjustable at the OWS. Once the override cycle times out, the unit shall reset to the unoccupied mode of operation.

7. Provide a current sensor on one phase of power feeding the supply fan for status indication at the OWS.

8. Provide a condensate sensor in the auxiliary drain pan the unit. When condensate is detected in the pan, close the coil control valve, deactivate the unit supply fan, and provide an alarm at the OWS.

9. Duct smoke detectors shall be installed in the supply and return air ducts at the unit as part of the work of Division 23. The detectors shall be furnished and wired to the fire alarm system as part of the work of Division 26. The duct smoke detector shall alarm through the FAS, which shall provide a signal to the BAS to de-energize the supply fan, exhaust fan, cooling and hot water control valves and damper motors. When de-energized the damper motors shall spring return the outside and exhaust air dampers closed. When the smoke detectors trip, an alarm shall be generated at the OWS.

10. The following items shall be displayed at the Operator's Terminal:

    a. Outside air temperature, global.
    b. Space temperature.
    c. Space temperature setpoint.
    d. Discharge temperature.
    e. High and low limit discharge air setpoint.
    f. Commanded status of fan.
    g. Operational status of fan via current sensor.
    h. Commanded status of the control valve.
    i. Low discharge temperature alarm.
    j. High discharge temperature alarm.
    k. Condensate alarm.
    l. Freezestat status/alarm
    m. Status of condensing unit: on/off.
    n. Diagram showing the layout of the unit with major components and dynamic temperatures shown where temperature sensors exist in the system.

P. Energy Recovery Ventilation System Unit Control:

1. The sequence that follows is typical for unit ERU-1, 2, and 3. Each unit consists of a supply fan, exhaust fan, chilled water-cooling coil, hot water heating coil, energy recovery wheel and drive, and filters. Each unit shall be provided with internal exhaust air and outside air bypass dampers. Each unit is a constant volume system with 100% outside air and economizer mode of operation.

2. The unit shall be controlled by an individual DDC Controller. The DDC Controller shall be wired to the coil discharge air temperature sensors, unit discharge air temperature sensor, return air temperature sensor, global outside air temperature sensor, exhaust air temperature sensor, and freeze stat. Each unit shall be provided with internal return air, exhaust air and outside air bypass dampers with actuators and end switches.

    a. Provide actuators and end switches for bypass dampers (damper by unit manufacturer).

3. The DDC Controller and required sensing and control devices shall be provided for field installation and wiring.

4. The following items shall be provided by the equipment manufacturer:

    a. Energy wheel motor, speed controller, freeze-stat, defrost controller and rotation failure contact, bypass dampers.

5. The following items will be provided by the BAS Contractor and installed in the equipment:

    a. DDC Controller
    b. Unit discharge air temperature sensor

c. Heating and cooling coil discharge air temperature sensors.
d. Return air temperature sensor.
e. Temperature sensor at exhaust air outlet.
f. Current sensor for one phase of power feeding the supply and exhaust fans.
g. Current sensor for one phase of power feeding the heat recovery wheel
h. Three-way control valves and actuators for all coils in the unit.
i. Actuators for all dampers.

6. The BAS shall index the occupied/unoccupied schedule or manually by the owner. During the occupied mode, the supply fan, exhaust fan, and energy recovery wheel shall run continuously with the outside air damper and exhaust air damper open. The cooling and heating coils shall modulate to maintain the minimum return air temperature setpoint of 70°F, adjustable, in the return air duct based on a temperature sensor at the unit return. Each fan shall have the ability to cycle on/off with a call for heating or cooling.

   a. Delay startup of the unit until the zone temperature has recovered from its previous setback or setup temperature during the unoccupied mode.

   b. The supply and exhaust fan shall not be energized until the damper is in the open position. Display the end switch position at the OWS. If the end switch does not coincide with the commended position, provide an alarm at the OWS.

7. The energy recovery wheel shall preheat or pre-cool outside air to the extent of its capacity based on return air and outside air conditions. The heating coil control valve and cooling coil control valve shall modulate in sequence to maintain the discharge air temperature setpoint. Whenever the enthalpy of the outside air is sufficient for economizer operation, the energy recovery wheel shall stop and the OA & EA bypass dampers shall open. Wheel shall bump rotation to prevent build-up of dirt on wheel.

   a. The heating coil three-way control valve shall modulate to maintain its leaving air temperature whenever the air temperature off of the energy recovery wheel falls below its setting, or the wheel fails for any reason.

   b. When the freeze stat trips, de-energize the supply fan, exhaust fan, energy recovery wheel, and damper motors. When de-energized the damper motors shall spring return the outside air and exhaust air dampers closed, the control valves on the heating coil shall open full to the coil. When the freeze stat trips, an alarm shall be generated at the OWS.

   c. Within each ERU unit's cooling coil section condensate pan, mount a liquid detection sensor at the high sloped end of the pan to indicate the condensate is not draining out properly. Whenever moisture is detected, shut down the unit until the condition has been examined and corrected. Manual reset shall be required to restore unit operation.

8. The economizer sequence shall be activated as the first stage of cooling. The DDC controller shall receive input from the global outdoor air temperature sensor. Whenever outdoor air temperature is below 57˚F (adj.), the economizer control shall be enabled. On a rise above 62˚F (adj.), the economizer control shall be disabled. When activated, the energy wheel shall stop and the economizer bypass damper shall open fully.

9. During the unoccupied mode, the supply and exhaust fan shall stop, the energy recovery wheel shall stop, and outside air and exhaust dampers shall close.

10. The BAS shall install energy wheel current sensor for monitoring and alarm generation at the OWS.

    a. If the energy wheel fails, unit shall continue to run, if operating until the unit is shut down manually or at the OWS.

11. The BAS shall interface with a "Global" fire alarm input from the fire alarm system (FAS). The fire

alarm contact shall be provided to the BAS from the fire alarm panel by the fire alarm system vendor. The status of the alarm contact shall be communicated throughout the BAS. When the fire alarm contact indicates an alarm condition, the BAS shall de-energize the supply fan, exhaust fan and damper motors. When de-energized, the damper motors shall spring return the outside and exhaust air dampers closed. Provide an alarm at the OWS to indicate fire alarm status.

12. Duct smoke detectors shall be installed in the supply and return air ducts at the unit as part of the work of Division 23. The detectors shall be furnished and wired to the fire alarm system as part of the work of Division 26. The duct smoke detector shall alarm through the FAS, which shall provide a signal to the BAS to de-energize the supply fan, exhaust fan, cooling and hot water control valves and damper motors. When de-energized the damper motors shall spring return the outside and exhaust air dampers closed. When the smoke detectors trip, an alarm shall be generated at the OWS.

13. The following items shall be displayed at the OWS:

    a. Discharge air temperature and humidity.
    b. Discharge air temperature setpoint.
    c. Return air temperature.
    d. Exhaust air temperature.
    e. Outside air temperature.
    f. Fire alarm system status/alarm.
    g. Commanded status of fans.
    h. Supply and exhaust fan start/stop command and speed signal
    i. Supply fan operational status via a current sensor.
    j. Exhaust fan operational status via a current sensor.
    k. Energy recovery wheel commanded status, operational status via current sensor and alarm.
    l. Smoke detector status/alarm.
    m. Freeze stat status/alarm.
    n. Damper command position of all damper actuators
    o. Diagram showing the layout of the equipment with major components and dynamic temperatures shown where temperature sensors exist in the system.

Q.1 Packaged Rooftop Unit Control: General

1. The sequence that follows is typical for units RTU-A1, RTU-A2, RTU-D1, and RTU-D2 (ALT). Each unit consists of a supply fan, packaged air-cooled DX cooling system with hot gas bypass control, gas fired heating section, air filters, air control dampers and actuators.

    a. Each unit is a constant volume system with minimum outside air and economizer mode of operation.

    b. Each unit shall be controlled by an individual DDC Controller. The DDC Controller shall be wired to sensors which shall include, but are not limited to, a discharge air temperature sensor, mixed air temperature sensor, return air temperature sensor, global outside air temperature/humidity/enthalpy, CO2 sensors, and space temperature sensors. The DDC Controller and all required sensors shall be provided by the BAS Contractor, field mounted and wired.

2. The following items shall be provided by the equipment manufacturer:

    a. Motor starters and overload protection.
    b. Control transformers.
    c. Dampers and damper motors.
    d. Terminal blocks for all wiring connections between equipment and control devices.
    e. Standard factory control modules for unit DX and natural gas functions.

    The following items shall be provided by ATC:

a. Space temperature sensors.
b. Discharge air temperature sensor.
c. Return air temperature sensors.
d. Global outside air temperature and humidity sensors.
e. Current sensor for one phase of the power feeding the fan.
f. Mixed air average temperature sensor.
g. CO2 sensors.
h. DDC Controller.

3. During the programmed occupied mode, the supply fan shall run continuously with the outside air damper closed. When fan fails to start once activated, initiate an alarm to the system after a twenty second delay. Monitor fan status with a current switch on one leg of power feeding the fan motor. Delay opening the outside air damper to its minimum position until the zone space temperature has recovered from the setback or setup temperature setting. Each fan shall have the ability to cycle on/off with a call for heating or cooling.

   a. When the return air CO2 level rises to 700 PPM, the outside air damper will step open from its minimum position to full scheduled open position to maintain CO2 level at or below 700 ppm. The return air and relief air dampers in the system shall modulate in unison to maintain the balance of air in the system.

   b. On a continued rise in CO2 level above 900 ppm, activate an alarm at the OWS. On a decrease in CO2 level below 700 ppm, the outside air damper shall step to minimum position.

4. On a drop-in space air temperature below the programmed setpoint of 70°F, adjustable, the unit gas heating section shall be activated and stage to maintain setpoint. Use space sensors to maintain average temperature setting.

5. On a rise in space air temperature above setpoint, the mixing box economizer sequence shall be activated. On a further rise or if the economizer sequence is deactivated, the unit air-cooled DX system hall be activated to maintain setpoint. On a fall in temperature the reverse shall occur. Maintain 75°F, adjustable.

6. The mixing box economizer sequence shall be activated as the first stage of cooling. The DDC Controller shall receive input from the global outside air temperature sensor. Whenever outdoor air temperature is below 57°F (adj.), the economizer control shall be enabled. On a rise above 62°F (adj.), the economizer control shall be disabled. The mixing box dampers shall maintain a mixed air temperature of 50°F (adj.).

7. During the programmed un-occupied mode, the fan, heating, cooling and mixing box dampers shall be cycled/modulated to maintain the un-occupied setpoints of 60°F (heating) and 85°F (cooling), all adjustable. Unless required for economizer cycle, the outside air and relief air dampers shall remain closed with the return air damper fully open.

8. Interface with a common fire alarm input from the fire alarm system. The fire alarm contact shall be provided at the fire alarm panel by the Fire Alarm Contractor. The status of the alarm contact shall be communicated throughout the BAS. When the fire alarm contact indicates an alarm condition, the BAS shall de-energize the unit. When de-energized, the damper motors shall spring return the outside and relief air dampers closed. Provide an alarm at the OWS to indicate fire alarm status. NOTE: the FAS shall also shut down the unit whenever the room CO (carbon monoxide) detector goes into alarm.

9. The Mechanical Contractor install duct smoke detectors in the supply and return air ducts at the unit as furnished by the FAS vendor as part of the work of Division 26 – Electric. When wired to the fire alarm system as required by the Division 26 contractor, the duct smoke detectors shall alarm the FAS, which shall signal the BAS to de-energize the unit in a manner similar to item 8.

10. The following items shall be displayed at the OWS:

    a. Space temperature.
    b. Space temperature setpoint.
    c. Mixed air temperature.
    d. Mixed air temperature setpoint.
    e. Global outside air temperature, humidity and enthalpy.
    f. Fire alarm system status/alarm.
    g. Duct smoke detectors status: normal/alarm.
    h. Commanded status of fan.
    i. Supply fan operational status via current switch.
    j. Room CO detector status: normal/alarm
    k. Diagram showing the layout of the equipment with major components and dynamic temperatures shown where temperature sensors exist in the system

Q.2 Rooftop Unit Control

1. The sequence that follows is for system RTU-B1/RF-B1as scheduled on the drawings. The rooftop unit consists of a supply fan, packaged air-cooled DX cooling system with hot gas bypass control, gas fired heating section, air filters, air control dampers and actuators, and unit controls with inline return air fan.

    a. Each unit is a constant volume system with minimum outside air and economizer mode of operation.
    b. Each unit shall be controlled by an individual DDC Controller. The DDC Controller shall be wired to sensors which shall include, but are not limited to, a discharge air temperature sensor, mixed air temperature sensor, return air temperature sensor, global outside air temperature/humidity/enthalpy, CO2 sensors, and space temperature sensors. The DDC Controller and all required sensors shall be provided by the BAS Contractor, field mounted and wired.
    c. Interlock each unit with its respective duct mounted return air fan.

2. The following items shall be provided by the equipment manufacturer:

    a. Motor starters and overload protection.
    b. Control transformers.
    c. Dampers and damper motors.
    d. Terminal blocks for all wiring connections between equipment and control devices.
    e. Standard factory control modules for unit DX and natural gas functions.
    f. Motor starter and overload protection for the return fan shall be provided as part of the work of Division 26 – Electric.

    The following items shall be provided by ATC:

    a. Space temperature sensors.
    b. Discharge air temperature sensor.
    c. Return air temperature sensor.
    d. Global outside air temperature and humidity sensors.
    e. Current sensor for one phase of the power feeding the fan.
    f. Mixed air average temperature sensor.
    g. CO2 sensors.
    h. DDC Controller.

3. During the programmed occupied mode, the supply and return air fans shall run continuously with the outside air damper closed. When either fan fails to start once activated, initiate an alarm to the system after a twenty second delay. Monitor fans status with a current switch on one leg of power feeding the fan motors. Delay opening the outside air damper to its minimum position until the zone space temperature has recovered from the setback or setup temperature setting. Each fan shall have the ability to cycle on/off with a call for heating or cooling.

a. When the return air CO2 level rises to 700 PPM, the outside air damper will step open from its minimum position to full scheduled open position to maintain CO2 level at or below 700 ppm. The return air and relief air dampers in the system shall modulate in unison to maintain the balance of air in the system.

b. On a continued rise in CO2 level above 900 ppm, activate an alarm at the OWS. On a decrease in CO2 level below 700 ppm, the outside air damper shall step closed.

4. On a drop-in space air temperature below the programmed setpoint of 70°F, adjustable, the unit gas heating section shall be activated and stage to maintain setpoint. Use space sensors to maintain average temperature setting.

5. On a rise in space air temperature above setpoint, the mixing box economizer sequence shall be activated. On a further rise or if the economizer sequence is deactivated, the unit air-cooled DX system hall be activated to maintain setpoint. On a fall in temperature the reverse shall occur. Maintain 75°F, adjustable.

6. The mixing box economizer sequence shall be activated as the first stage of cooling. The DDC Controller shall receive input from the global outside air temperature sensor. Whenever outdoor air temperature is below 57°F (adj.), the economizer control shall be enabled. On a rise above 62°F (adj.), the economizer control shall be disabled. The mixing box dampers shall maintain a mixed air temperature of 50°F (adj.).

7. During the programmed un-occupied mode, the fans, heating, cooling and mixing box dampers shall be cycled/modulated to maintain the un-occupied setpoints of 60°F (heating) and 85°F (cooling), all adjustable. Unless required for economizer cycle, the outside air and relief air dampers shall remain closed with the return air damper fully open.

8. Interface with a common fire alarm input from the fire alarm system. The fire alarm contact shall be provided at the fire alarm panel by the Fire Alarm Contractor. The status of the alarm contact shall be communicated throughout the BAS. When the fire alarm contact indicates an alarm condition, the BAS shall de-energize the unit and inline return air fan. When de-energized, the damper motors shall spring return the outside and relief air dampers closed. Provide an alarm at the OWS to indicate fire alarm status. NOTE: the FAS shall also shut down the unit whenever the room CO (carbon monoxide) detector goes into alarm.

9. The Mechanical Contractor install duct smoke detectors in the supply and return air ducts at the unit as furnished by the FAS vendor as part of the work of Division 26 – Electric. When wired to the fire alarm system as required by the Division 26 contractor, the duct smoke detectors shall alarm the FAS, which shall signal the BAS to de-energize the unit in a manner similar to item 8.

10. The following items shall be displayed at the OWS:

    a. Average space temperature.
    b. Average space temperature setpoint.
    c. Mixed air temperature.
    d. Mixed air temperature setpoint.
    e. Global outside air temperature, humidity and enthalpy.
    f. Fire alarm system status/alarm.
    g. Duct smoke detectors status: normal/alarm.
    h. Commanded status of each fan.
    i. Supply fan operational status via current switch.
    j. Return fan operational status via current switch.
    K. Room CO detector status: normal/alarm
    l. Diagram showing the layout of the equipment with major components and dynamic temperatures

shown where temperature sensors exist in the system

R. Electric Cabinet Heater Control:

1. Each heater is equipped with a unit mounted thermostat, fan control, and residual heat sensor.

2. Set thermostat to maintain 65°F, adjustable. Thermostat shall energize the heating element and start unit fan. Once setpoint is met, the unit fan shall continue to run until the residual heat sensor allows the element to dissipate excess heat to the room. Fan shall then shut down.

3. Provide a blank-plate sensor in each space for space temperature monitoring and low limit alarm at the OWS. Set alarm at 40°F, adjustable.

S. Outdoor Lighting Control:

1. Division 26 - Electric shall provide multiple lighting contactors for control of outdoor lighting. The lighting will be divided into two or more zones. The lighting contactors shall be located adjacent to each other as shown on the electrical drawings.

2. Provide an outdoor, ambient light level sensor. During the programmed operation period, the outdoor lighting shall be activated when the outdoor ambient light level falls below the programmed setpoint. Each zone shall have independent light level setpoints and time schedules. Set time schedules and light level setpoints as directed by the owner. All time schedules and setpoints shall be adjustable at the OWS.

3. The following items shall be displayed at the OWS:

   a. Ambient light level.
   b. Time schedule per zone.
   c. Commanded status of each zone.

T. Biohazard Shut Down System Control:

1. Provide a biohazard shutdown system including an emergency shut down switch, a “normal” pilot light and an emergency pilot light. The switch/pilot light assembly shall be located in the Principal’s Office or as directed by the Owner. Provide labeling of all components.

2. When the emergency switch is activated, a signal shall be sent to the BAS to shut down all air handling equipment and to close all outdoor air dampers controlled by the BAS in the entire school. Provide an alarm at the OWS when the switch is activated.

3. The alarm shall be manually reset at the switch and at the OWS before normal system operation resumes.

4. The status of switch/system – normal or alarm shall be displayed at the OWS.

U. Blocking Valves

1. Furnish blocking valves as shown on the drawings. The purpose of the valves is to prevent chilled water from migrating through the piping to terminal heating only equipment when the system is in the cooling mode, since the equipment is not equipped for condensation. The valves shall be of the two-position type and will fail in the last position (no spring return).

2. When the dual temperature loop is in the heating mode, the blocking valves shall be open. When the dual temperature loop is in the cooling mode, the blocking valves shall be closed.

3. An end switch on the valve actuator shall be monitored by the BAS to indicate that the valve is fully open. Provide an alarm at the OWS if the valve is commanded open but not proven open via the end

switch.

4. The following items shall be displayed at the OWS:

    a. Individual blocking valves and commanded position.
    b. Operator selection to set heating/cooling position of each valve.
    c. Status of valve end switch/valve open position.
    d. Alarm if valve is commanded open and end switch does not indicate that the valve is open.