

City of Dublin
PARTIAL ROOF
REPLACEMENT
DUBLIN RECREATION
CENTER

CITY OF DUBLIN, OHIO

BID AND CONTRACT DOCUMENTS

May 29, 2014

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SECTION 1

BIDDING REQUIREMENTS

INVITATION TO BID

Sealed proposals will be received from invited bidders by:

**City of Dublin, Ohio
Administrative Services – Facilities
6555 Shier Rings Road
Dublin, Ohio 43016**

until **1:00 p.m.** local time on **June 17, 2014** at which time the sealed proposals will be opened by the **Facilities Manager**, for the following project:

City of Dublin Partial Roof Replacement Dublin Recreation Center 5600 Post Road

For all labor, materials and equipment necessary for the construction and associated site work for the City of Dublin Partial Roof Replacement Dublin Recreation Center as indicated within the plans and associated documents. A pre-bid meeting is planned for 2:30 p.m. on June 5, 2014 at the Dublin Recreation Center located at 5600 Post Road, Dublin, Ohio 43017.

All work is to be included in the bid.

Service delivery shall be in accordance with contract documents.

The contract documents will be available for examination on May 29th during regular business hours until the date of bid opening at:

**City of Dublin, Ohio
Administrative Services – Facilities
6555 Shier Rings Road
Dublin, Ohio 43016**

**Schorr Architects, Inc.
230 Bradenton Avenue
Dublin, Ohio 43017**

And

**F.W. Dodge
1175 Dublin Road
Columbus, Ohio 43215**

Copies of the contract documents may be obtained upon request accompanied by a non refundable deposit in the amount of \$30.00 for each set of contract documents. Checks shall be made payable to "City of Dublin, Ohio." Documents are also available online at <http://dublinohiousa.gov/bids-and-requests-for-proposals/>. When downloading bid documents from online you must register as a plan holder.

Prevailing Wages

APPLICABLE

Bidders shall comply with Chapter 4115 of the Ohio Revised Code (Wages and Hours on Public Works). Bidders are responsible for verifying that the most current wage rates are utilized in their bids. The successful bidder is also responsible for any changes in the prevailing wage rates or classifications throughout its performance of work on the Project.

BIDS AND ATTACHED DOCUMENTS

Bidders shall submit their bids on the form of proposal provided by the **Facilities Manager**.

Each proposal shall be submitted in its entirety in a sealed envelope addressed to:

**Brian Ashford
Facilities Manager
City of Dublin, Ohio
Administrative Services - Facilities
6555 Shier Rings Road
Dublin, Ohio 43016**

Each sealed envelope containing a proposal shall be plainly marked on the outside as –
“Bid for:
City of Dublin Partial Roof Replacement, Dublin Recreation Center.” The envelope shall bear the name and address of the bidder.

If forwarded by mail, the sealed envelope containing the proposal must be enclosed in another envelope and the outside of the envelope must be addressed to and marked:

**Brian Ashford
Facilities Manager
City of Dublin, Ohio
Administrative Services - Facilities
6555 Shier Rings Road, Dublin, Ohio 43016**

BID FOR: City of Dublin Partial Roof Replacement, Dublin Recreation Center

Bidders shall submit the following with their proposals:

1. Non-collusion Affidavit.
2. Bid/Performance Bond.
3. List of Subcontractors if applicable.
4. Delinquent Personal Property Tax Affidavit.
5. Affidavit of Authority (if Bidder is a corporation).
7. Experience Record/References.
8. Power of Attorney (if Bidder is an out-of-state corporation).

The City of Dublin, Ohio reserves the right to reject any and all proposals and to waive any informalities or irregularities in the proposals.

Bidders may address inquiries to:

Brian Ashford
Facilities Manager
City of Dublin, Ohio
Administrative Services - Facilities
6555 Shier Rings Road
Dublin, Ohio 43016
Telephone: (614) 410-4790
Fax: (614)761-6512
The hearing impaired may
call V/TDD at (614) 410-4700

By order of the City Council of the City of Dublin, Ohio.
CITY OF DUBLIN, OHIO
Marsha I. Grigsby
City Manager

INTERPRETATION OR CORRECTION OF BIDDING DOCUMENTS

Immediately notify **Schorr Architects, Inc.** upon finding discrepancies or omissions in the bidding documents.

Direct inquiries and questions to:

Tony Schorr, AIA
Schorr Architects, Inc.
230 Bradenton Avenue
Dublin, Ohio 43017

614-798-2096
tschorr@schorrarchitects.com

1. Submit written request for clarification, correction or interpretation to the City not less than 7 days before the date for receipt of bids.
2. Modifications to the bidding documents will be issued as Addenda to the specifications and will become a part of the Contract.
3. No bidder shall rely on oral modifications or any other method of clarification, correction or interpretation of the bidding documents. Only modifications set forth in an Addendum will be binding.

SECTION 2

BIDDING FORMS

PROPOSAL

_____ (the "Bidder") submits this Proposal having read and examined the contract documents, including but not limited to the Invitation to Bid; the City of Dublin, Ohio

All bids will be based upon elements indicated within the Drawings and Specifications. All changes to actual length, either additions or subtractions, will be through Change Order(s) using unit price(s) provided by contractor on proposal form.

<u>Addendum Number</u>	<u>Date of Receipt</u>
_____	_____
_____	_____
_____	_____

The Bidder proposes to provide the above named **City of Dublin Partial Roof Replacement, Dublin Recreation Center Project** in accordance with the contract documents for the following sum:

Total Base Bid (in figures): \$ _____

Total Base Bid (in words): _____

Unit Price No. 1: Removal of wet insulation and replace with new insulation:

\$ _____ / S.F.

In the event of a discrepancy between the amount of the total bid as written in figures and in words, the amount written in words shall govern.

The Bidder understands and agrees that delivery under the Agreement for **City of Dublin Partial Roof Replacement, Dublin Recreation Center Project** shall be complete within **one hundred twenty (120) consecutive calendar days**, or as specified in bid documents unless an extension of time is granted by the **Facilities Manager**.

Upon failure to have all work completed within the project time, the City of Dublin, Ohio shall be entitled to retain or recover from the Bidder, as liquidated damages, and not as a penalty, the amounts set forth in the following table for each and every

calendar day until completion. The right of the City of Dublin, Ohio to recover liquidated damages shall not substitute for any recovery for additional costs in the event the Bidder fails to complete the Agreement for construction according to the contract documents.

Liquidated Damages:

<u>Contract Amount</u>	<u>Dollars Per Day</u>
\$0-25,000	\$ 100.00
25,001-50,000	150.00
50,001-100,000	200.00
100,001-500,000	300.00
500,001-1,000,000	500.00
1,000,001-2,000,000	750.00
2,000,001-5,000,000	1,000.00
5,000,001-10,000,000	1,500.00
Over \$10,000,001	2,000.00

REPRESENTATIONS OF THE BIDDER

The Bidder represents the following:

1. The Bidder has read and understands the contract documents and understands that it must comply with all requirements of the contract documents, regardless of whether the Bidder has actual knowledge of the requirements and regardless of any statement or omission made by the Bidder which might indicate a contrary intention.
2. The Proposal is based upon the items specified by the contract documents.
3. The Bidder has visited the site, become familiar with local conditions, and has correlated personal observations about the requirements of the contract documents. The Bidder has no outstanding questions regarding the interpretation of the contract documents.
4. The Bidder has submitted the following in connection with this Proposal and the information contained therein is complete and accurate:
 - a. Non-collusion Affidavit.
 - b. Bid/Performance Bond.
 - c. List of Subcontractors.
 - d. Delinquent Personal Property Tax Affidavit.

- e. Affidavit of Authority (if Bidder is a corporation).
 - g. Experience Record/References.
 - h. Power of Attorney (if Bidder is an out-of-state corporation).
5. The Bidder understands that the Agreement for the **City of Dublin Partial Roof Replacement, Dublin Recreation Center Project** is subject to all of the provisions, duties, obligations, remedies and penalties of Ohio Revised Code Chapter .
6. Within ten (10) business days from the date of receipt the Notice of Intent to Award, the Bidder understands that it must enter into and execute an Agreement for **City of Dublin Partial Roof Replacement, Dublin Recreation Center Project** with the City of Dublin, Ohio if awarded on the basis of this Proposal. If the Bidder does not execute an Agreement for **City of Dublin Partial Roof Replacement, Dublin Recreation Center Project** for any reason, the Bidder and the Bidder's surety shall be liable to the City of Dublin, Ohio as provided in Ohio Revised Code Section 153.54(G).
7. Within ten (10) business days of the date of receipt of the Notice of Intent to Award, the Bidder understands that it must submit the following:
- a. Performance Bond.
 - b. Certificate of Insurance and a copy of Additional Insured Endorsement.
 - c. Certificate of Compliance with Affirmative Action.
8. The Bidder understands that it must furnish any other information requested by the **Brian Ashford, Facilities Manager**.

The Bidder hereby signs this Proposal on the ___ day of _____, 2014.

If Bidder is an individual, complete the following:

Signature: _____

Print Name: _____

Name of Business: _____
(if different than above)

Federal Identification Number: _____

Address: _____

Telephone: () _____

Fax: () _____

If Bidder is a partnership, complete the following:

Name of Partnership: _____

By: _____
(Signature)

Print Name: _____

Federal Identification Number: _____

Address: _____

Telephone: () _____

Fax: () _____

Names and Addresses of all general partners:

If Bidder is a joint venture, complete the following:

Name of Joint Venture: _____

By: _____
(Signature)

Print Name: _____

Address: _____

Telephone: () _____

Fax: () _____

Complete the following for each firm represented by the joint venture:

1. Name: _____

Federal Identification Number: _____

Address: _____

Telephone: () _____

Fax: () _____

2. Name: _____

Federal Identification Number: _____

Address: _____

Telephone: () _____

Fax: () _____

If Bidder is a corporation, complete the following:

Name of Corporation: _____

By: _____

(Signature)

Print Name: _____

Title: _____

Federal Identification Number: _____

Address: _____

Telephone: () _____

Fax: () _____

State of Incorporation: _____

Names and addresses of Corporate Officers:

If Bidder is an entity other than those described above, complete the following:

Name of Bidder: _____

By: _____
(Signature)

Print Name: _____

Title: _____

Federal Identification Number: _____

Address: _____

Telephone: () _____

Fax: () _____

Type of Business Entity: _____

Names and addresses of all Principals:

BID/PERFORMANCE BOND

KNOW ALL PERSONS BY THESE PRESENTS, that we, the undersigned (the "Principal") and (the "Surety") are hereby held and firmly bound unto the City of Dublin, Ohio ("Dublin") as obligee in the penal sum of the dollar amount of the bid submitted by the Principal to Dublin on, _____, 2014 to undertake the project known as:

City of Dublin Partial Roof Replacement, Dublin Recreation Center Project

The penal sum referred to herein shall be the dollar amount of the Principal's bid to Dublin, incorporating any additive or deductive alternate proposals made by the Principal on the date referred to above to Dublin, which are accepted by Dublin. In no case shall the penal sum exceed the amount of _____ dollars (\$ _____). (If the foregoing blank is not filled in, the penal sum will be the full amount of the Principal's bid, including alternates. Alternatively, if the blank is filled in, the amount stated must not be less than the full amount of the bid including alternates, in dollars and cents. A percentage is not acceptable.)

For the payment of the penal sum well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors, and assigns.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH, that whereas the above-named Principal has submitted a bid for **City of Dublin Partial Roof Replacement, Dublin Recreation Center Project**.

NOW, THEREFORE, if Dublin accepts the bid of the Principal and the Principal fails to enter into a proper contract in accordance with the bid, plans, details, specifications, and bills of material; and in the event the Principal pays to Dublin the difference not to exceed ten percent of the penalty hereof between the amount specified in the bid and such larger amount for which Dublin may in good faith contract with the next lowest bidder to perform the work covered by the bid, or in the event Dublin does not award the contract to the next lowest bidder and resubmits the project for bidding, the Principal will pay Dublin the difference not to exceed ten percent of the penalty hereof between the amount specified in the bid, or the costs, in connection with the resubmission, of printing new contract documents, required advertising and printing and mailing notices to prospective bidders, whichever is less, then this obligation shall be null and void, otherwise to remain in full force and effect; if Dublin accepts the bid of the Principal and the Principal within ten days after the awarding of the contract, enters into a proper contract in accordance with the bid, plans, details specifications, and bills of material, which said contract is made a part of this bond the same as though set forth herein.

NOW ALSO, if the Principal shall well and faithfully do and perform the things agreed by Principal to be done and performed according to the terms of said contract; and shall pay all lawful claims of subcontractors, material men, and laborers, for labor performed and materials furnished in the carrying forward, performing, or completing of said contract; we agreeing and assenting that this undertaking shall be for the benefit of any material man or laborer having a just claim, as well as for Dublin herein; then this obligation shall be void; otherwise the same shall remain in full force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall in no event exceed the penal amount of this obligation as herein stated.

The Surety hereby stipulates and agrees that no modifications, omissions, or additions, in or to the terms of said contract or in or to the plans or specifications therefore shall in any wise affect the obligations of the Surety on the Surety's bond, and the Surety does hereby waive notice of any such modifications, omissions or additions to the terms of the contract or to the plans or specifications.

Signed this _____ day of _____, 2014.

PRINCIPAL:

By: _____
(Signature)

Print Name: _____

Title: _____

Address:

Telephone: () _____

SURETY:

By: _____
(Signature)

Print Name: _____

Title: _____

Address:

Telephone: () _____

SURETY AGENT:

By: _____
(Signature)

Print Name: _____

Title: _____

Address:

Telephone: () _____

DELINQUENT PERSONAL PROPERTY TAX AFFIDAVIT

STATE OF _____
COUNTY OF _____, SS:

I, _____ (Affiant),
_____ (Title) of _____ (the "Bidder"),
after being cautioned and sworn, represent to the City of Dublin, Ohio, the following: (check the
appropriate statement)

At the time the Proposal was submitted, the Bidder was not charged with delinquent personal property taxes on the General Tax Lists of Personal Property of a county in which the City of Dublin, Ohio has territory (Franklin, Delaware, and Union Counties).

OR

At the time the Proposal was submitted, the Bidder was charged with delinquent personal property taxes on the General Tax Lists of Personal Property of a county in which the City of Dublin, Ohio has territory (Franklin, Delaware, and Union Counties) and that the amounts of such due and unpaid delinquent taxes, including due and unpaid penalties and interest, are set forth below:

<u>Taxes:</u>	<u>Penalties and Interest:</u>	<u>Counties:</u>
\$ _____	\$ _____	_____
\$ _____	\$ _____	_____
\$ _____	\$ _____	_____

(Signature of Affiant)

(Print Name)

Sworn to and subscribed before me this ____ day of _____ 2014.

Notary Public

NONCOLLUSION AFFIDAVIT

STATE OF _____
COUNTY OF _____, SS:

I, _____ (Affiant),
_____ (Title) of _____ (the
"Bidder"), after being cautioned and sworn, represent to the City of Dublin, Ohio the following:

1. The bid price contained in the Bidder's Proposal for the Project has been arrived at independently without collusion, consultation, communication, or agreement for the purpose of restricting competition as to any matter relating to such bid price with any other bidder or third party.
2. Unless otherwise required by law, neither the bid price nor the Proposal has been knowingly disclosed by the Bidder and will not knowingly be disclosed by the Bidder prior to the bid opening, directly or indirectly, to any other bidder or to any third party that would have any interest in the bid price.
3. No attempt has been made or will be made by the Bidder to induce any other individual, partnership, or corporation to submit or not to submit a bid for the purpose of restricting competition.

(Signature of Affiant)

(Print Name)

Sworn to and subscribed before me this ___ day of _____, 2014

Notary Public

AFFIDAVIT OF AUTHORITY

STATE OF _____
COUNTY OF _____, SS:

I, _____ (Affiant), after being cautioned and sworn, state the following:

1. I am the Secretary of _____ (the "Company"), a corporation organized and existing under the laws of the State of _____.
2. I am familiar with the records of the Company.
3. _____ (name of officer) is authorized to sign the Proposal and to execute a contract on behalf of the Company for the above-referenced project.

(Signature of Affiant)

(Print Name)

Sworn to and subscribed before me this _____ day of _____, 2014

Notary Public

LIST OF SUBCONTRACTORS
Applicable X

NOTE: The bidder must perform at least 50% of the total contract cost with its own forces.

Complete the following information for all subcontractors, which will be employed on the Project.

1. Name of Subcontractor: _____

Federal Identification Number: _____

Address: _____

Type of Work Subcontractor to Provide: _____

Approximate Percentage of the Contract Cost to be Performed by Subcontractor: _____

Experience Record: _____

2. Name of Subcontractor: _____

Federal Identification Number: _____

Address: _____

Type of Work Subcontractor to Provide: _____

Approximate Percentage of the Contract Cost to be performed by Subcontractor:

Experience Record: _____

3. Name of Subcontractor:

Federal Identification Number: _____

Address: _____

Type of Work Subcontractor to Provide:

Approximate Percentage of the Contract
Cost to be performed by Subcontractor: _____

Experience Record: _____

4. Name of Subcontractor:

Federal Identification Number: _____

Address: _____

Type of Work Subcontractor to Provide:

Approximate Percentage of the Contract
Cost to be performed by Subcontractor: _____

Experience Record: _____

EXPERIENCE RECORD/REFERENCES

NOTE: Bids from contractors inexperienced in this particular type of work will not be considered.

Complete the following information with respect to previous purchasers.

1. Name of Person to Contact for Reference:

Address: _____

Phone: () _____

2. Name of Person to Contact for Reference:

Address: _____

Phone: () _____

3. Name of Person to Contact for Reference:

Address: _____

Phone: () _____

SECTION 3
CONTRACT FORMS
(TO BE EXECUTED WITH THE SELECTED BIDDER)

NOTICE OF INTENT TO AWARD

To: _____

You are hereby notified that the City of Dublin, Ohio has accepted the Proposal submitted by you on _____, **2014** in response to the Invitation to Bid for the above-referenced project.

Within ten (10) business days from the date of receipt of this Notice of Award, you are required to:

1. Execute an Agreement for Construction.
2. Submit a Performance Bond.
3. Submit a Certificate of Insurance and a copy of an Additional Insured Endorsement.
4. Submit an Affirmative Action Certificate of Compliance.

If you fail to execute the Agreement for construction or provide the required submittals within ten (10) business days from the date of receipt of this Notice of Intent to Award, you or your surety shall be liable to the City of Dublin, Ohio as provided in Ohio Revised Code Section 153.54(G) and the City of Dublin, Ohio may award the contract to the next lowest and best bidder.

You are required to prepare and submit a progress schedule prior to the pre-construction conference to be held on _____ Not Applicable _____

Return an acknowledged copy of this Notice of Intent to Award to:

Brian Ashford, Facilities Manager
Facilities Department
6555 Shier Rings Road
Dublin, Ohio 43016

CITY OF DUBLIN, OHIO

Date: _____

By: _____
Brian Ashford, Facilities Manager

RECEIPT OF NOTICE OF INTENT TO AWARD

Receipt of this Notice of Intent to Award is hereby acknowledged this _____ day
of _____, 2014.

Company Name: _____

Signature: _____

Print Name: _____

Title: _____

Contract No: _____

**STANDARD AGREEMENT
CITY OF DUBLIN, OHIO**

This Agreement is entered into this _____ day of _____, 20____, by and between the City of Dublin, Ohio (**DUBLIN**), the Owner, located at 5200 Emerald Parkway, Dublin, Ohio 43017, and the

SERVICE PROVIDER

For services in connection with:

The labor, materials, and equipment required for the construction of new little league ball fields and associated site work including fencing, hardscape, landscaping, and electrical improvements.

FOR THE FOLLOWING:

**City of Dublin
Partial Roof Replacement,
Dublin Recreation Center Project
5600 Post Road**

The **ARCHITECT** of the Project is
**Tony Schorr, AIA
Schorr Architects, Inc.
239 Bradenton Avenue
Dublin, Ohio 43017**

**614-798-2096
tschorr@schorrarchitects.com**

**THIS DOCUMENT HAS IMPORTANT LEGAL CONSEQUENCES.
CONSULTATION WITH AN ATTORNEY IS ENCOURAGED WITH RESPECT
TO ITS EXECUTION, COMPLETION AND MODIFICATION**

CONTRACT DOCUMENTS

This Agreement is for performance of a portion of the Work for the Project identified above. All Work by Service Provider shall be performed in accordance with the Contract Documents. The Contract Documents comprise of and include this Agreement, General and Supplemental Conditions, Plans and Specifications, Project Manuals and all amendments thereto. These Contract Documents are hereby specifically incorporated herein as part of this Agreement and shall govern the Service Provider for his portion of the Work related to the Project.

Service Provider shall furnish all materials, supplies, equipment, and other items proper or necessary to perform and complete the Work, including specifically providing all supervision and labor required for the completion of the Work in accordance with the Contract Documents.

Service Provider agrees and acknowledges that it has evaluated and is satisfied with the conditions and limitations under which the Work is to be performed, including, without limitation (i) the location, condition, layout and nature of the Project site and surrounding areas; (ii) generally prevailing weather and climatic conditions; (iii) anticipated labor supply and costs; (iv) availability and cost of materials, tools and equipment; and (v) other similar issues. Service Provider further represents and warrants that it is familiar with the entire Scope of its Work and that the Contract Price includes all of its Work that is specifically included in the Contract Documents or which is reasonably inferable from the Contract Documents.

In the event of inconsistencies within or between parts of the Contract Documents, or between the Contract Documents and applicable standards, codes, and ordinances, Service Provider shall (i) provide the better quality or greater quantity of Work or (ii) comply with the more stringent requirement.

CONTRACT PRICE

As full compensation for performance of the Agreement, Dublin agrees to pay Service Provider in current funds the Contract Price for the satisfactory performance of the Work, in the manner described below, subject to all applicable provisions of the Agreement (check appropriate box):

- the firm fixed price of _____ Dollars (\$_____) subject to additions and deductions as provided for in the Contract Documents; and/or
- 1. unit prices in accordance with the attached Schedule of Unit Prices and estimated quantities, which is incorporated herein by reference and identified as Schedule; and/or

2. time and material rates and prices in accordance with the attached Schedule of Labor and Material Costs which is incorporated herein by reference and identified as Schedule

The firm fixed-price, unit prices and/or time and material rates and prices are hereinafter referred to as the "Contract Price."

SURETY BONDING BONDS

Service Provider shall, if required, furnish to Dublin appropriate surety bonds to secure performance of the Work and to satisfy all Service Provider's payment obligations under the Agreement. The surety bond shall provide that the terms of the Agreement and Contract Documents are incorporated by reference therein. Any bond provided by Service Provider pursuant to this provision is hereby deemed to so incorporate the Contract Documents and it is understood that the surety is accepting each and every responsibility and obligation which Service Provider has assumed toward Dublin under this Agreement and the Contract Documents, including but not limited to liability for indemnity, attorneys' fees and delay damages.

Bond: Required Not Required

If a performance or payment bond, or both, are required of the Service Provider under this Agreement, then said bonds shall be in the full amount of the Contract Price, unless otherwise specified herein.

The cost of the bond, if required, is included in the Contract Price.

In the event Service Provider shall fail to provide the required bonds within seven days after date of signature of this Agreement by both Parties, Dublin after giving the Service Provider written notice and opportunity to cure this may terminate this Agreement and enter into a contract for the balance of the Work with another contractor. The Service Provider shall pay all Dublin's costs and expenses incurred by Dublin as a result of said termination.

PERFORMANCE OF WORK TIME IS OF THE ESSENCE

It is expressly understood and agreed by and between the Parties that time is of the essence regarding completion of the Work by Service Provider. Service Provider shall undertake

all activities necessary for the performance of its Work immediately upon receipt of a letter of intent or notification of the award of this Agreement and shall commence work hereunder so that the entire Project may be completed in accordance with the Project Schedule. Service Provider shall perform, coordinate and schedule its Work so as not to cause any delay or disruption to the Project Schedule, the work of other entities on this Project or the completion date of the Project.

Service Provider acknowledges and agrees that Dublin will incur additional costs, damages, liabilities, lost profits or losses related to loss of use if this Project is not completed in accordance with any milestone or interim dates/deadlines or the substantial or final completion dates on the Project Schedule. As a result, Service Provider shall be liable for and shall reimburse Dublin for any such additional costs, damages, liabilities, lost profits or losses related to loss of use for its failure to meet all milestone, interim, substantial or final completion dates in accordance with the Project Schedule.

RELATIONSHIP OF THE PARTIES

Service Provider accepts the relationship of trust and confidence established by this Agreement to exercise its skill and judgment to further Dublin's interests, and to perform the Work in an expeditious and economical manner consistent with Dublin's interests. Nothing in this Agreement shall be construed to constitute the relationship between Service Provider and Dublin as a partnership, association, or joint venture.

Service Provider shall perform its Work under the general direction of Dublin (and/or Dublin's representative, construction manager, architect, or other duly authorized individual/entity) and in accordance with this Agreement and as reasonably inferable from the Contract Documents as being necessary to produce the intended results as specified hereafter.

PROJECT SCHEDULE

Service Provider agrees to perform its work in accordance with the sequence and schedule for this Project, and with any updates thereto (referred to in this Agreement as the "Project Schedule"). By agreeing to perform its Work in accordance with the Project Schedule, Service Provider has included reasonable allowances for out of sequence work, and weather and unusual or unforeseen delays. If requested by Dublin, Service Provider shall participate and cooperate in the development of the Project Schedule and any revisions thereto.

Service Provider shall continuously monitor the Project Schedule so as to be fully familiar with the timing, phasing and sequence of operations of Service Provider's Work and the other work being performed on the Project. Service Provider shall coordinate its Work with all other work on the Project to avoid conflict or interference with such other work.

If Dublin determines that Service Provider's Work has failed to meet the Project Schedule or any update thereof, Service Provider shall within seventy-two (72) hours of its receipt

of written notice from Dublin prepare and submit a recovery schedule relating to its activities. Service Provider agrees that it shall at its sole cost and expense take such measures as are necessary, including adding manpower and/or equipment and/or working overtime to accelerate its activities to conform to the Project Schedule or any update thereto. Should Service Provider fail to undertake such measures Dublin shall have the right to supplement Service Provider's forces and/or equipment and back-charge Service Provider for the costs so incurred, together with a markup of ten percent (10%) for overhead and profit.

PERFORMANCE

Service Provider shall use its best care, skill, and diligence in supervising, directing and performing, the Work. Service Provider shall have sole responsibility for the performance of the Work, including the methods, techniques and means for completing all portions of the Work. Service Provider has the responsibility to ensure that all material suppliers and subcontractors adhere to the Contract Documents, and that they order materials in time, taking into account the current market regarding both pricing and delivery conditions.

EXTRAORDINARY MEASURES BY DUBLIN

If the performance of the Work, as of a milestone or interim date/deadline on the Project Schedule, has not progressed or reached the level of completion required by the Contract Documents, Dublin shall have the right to order Service Provider to take corrective measures necessary to expedite the progress of the Work, including, without limitation, (i) working additional shifts or overtime, (ii) supplying additional manpower, equipment, and facilities, and (iii) other similar measures (hereinafter referred to collectively as "Extraordinary Measures"). Such Extraordinary measures shall continue until the progress of the Work complies with the stage of completion required by the Contract Documents. Dublin's right to require Extraordinary Measures is solely for the purpose of ensuring the Contractor's compliance with the Project Schedule. Service Provider shall not be entitled to an adjustment in the Contract Price in connection with Extraordinary Measures required by Dublin.

INTERPRETATION OF AGREEMENT INCONSISTENCIES AND OMISSIONS

Should inconsistencies or omissions appear in the Contract Documents, it shall be the duty of Service Provider to so notify Dublin in writing within three (3) working days of Service Provider's discovery thereof. Upon receipt of said notice, Dublin shall instruct the Service Provider as to the measures to be taken and Service Provider shall comply with Dublin's instructions. If Service Provider performs work knowing it to be contrary to any applicable laws, statues, ordinances, building codes, rules or regulations without notice to Dublin and advance approval by appropriate authorities, then Service Provider shall assume full responsibility for such work and shall bear all associated costs, charges, fees and expenses necessarily incurred to remedy the situation.

LAW AND EFFECT

The performance of this Agreement and all of its terms and conditions shall be interpreted and governed by the laws of the State of Ohio, unless otherwise noted herein.

SEVERABILITY

The partial or complete invalidity of anyone or more provisions of this Agreement shall not affect the validity or continuing force and effect of any other provision.

ENTIRE AGREEMENT

This Agreement is solely for the benefit of the signatories hereto and represents the entire and integrated agreement between the Parties hereto and, unless specifically referenced herein, supersedes any prior negotiations, representations, or agreements, either written or oral.

DUBLIN'S OBLIGATIONS

FINANCING INFORMATION Upon written request from Service Provider, Dublin agrees to furnish reasonable evidence that financial arrangements have been made or otherwise exist to fulfill Dublin's payment obligations under the Agreement.

PROJECT FEES Except for permits and fees, which are the responsibility of Service Provider, Dublin agrees to secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

TIMELY COMMUNICATIONS Dublin, with reasonable promptness, shall transmit all submittals, transmittals, and written approvals relating to the Work. Any other information or services relevant to service Provider's performance of the Work under

Dublin's control shall be furnished by Dublin after receipt from Service Provider of a written request for such information or services.

SERVICE PROVIDER'S OBLIGATIONS

RESPONSIBILITIES Service Provider shall furnish all of the labor, materials, equipment, and services, including, but not limited to, competent supervision, shop drawings, samples, tools, and equipment as may be necessary for the proper performance of the Work in accordance with and as reasonably inferable from the Contract Documents.

SUBCONTRACTING Service Provider shall provide to Dublin written notice that it intends to subcontract any of the Work covered by the scope of the Contract Documents to a third party. Dublin shall have the right to approve any and all such subcontracts and Service Provider shall not allow any work to be performed by any subcontractor that has not been approved in writing by Dublin. Service Provider agrees that it shall not be entitled to any additional compensation in the event that Dublin does not approve a proposed subcontractor. Service Provider further agrees to incorporate the terms and conditions of this Agreement into every subcontract.

In the event that Service Provider has work performed by a subcontractor who has not been approved by Dublin, Dublin shall have the right to terminate this Agreement or supplement Service Provider's Work as necessary to have the same completed in accordance with the Contract Documents. Any and all costs incurred by Dublin as a result of such action shall be the responsibility of Service Provider and Dublin may back-charge Service Provider therefore.

SHOP DRAWINGS SAMPLES, PRODUCT DATA AND MANUFACTURERS' LITERATURE

To the extent applicable or required, Service Provider shall promptly submit to Dublin for approval all shop drawings, samples, product data, manufacturers' literature and similar submittals as required by the Contract Documents or as required herein. Service Provider shall prepare and deliver its submittals to Dublin in such time and sequence so as not to delay the Project. The approval of any Service Provider submittal shall not be deemed to authorize deviations, substitutions or changes in the requirements of the Contract Documents unless express written approval is obtained from Dublin authorizing such deviation, substitution or change.

COORDINATION AND COOPERATION

Service Provider shall:

- (a) cooperate with Dublin and all others whose work may interfere or interface with the Work;

- (b) before proceeding with the Work under this Agreement, accurately check all previous and surrounding work done by other entities, determine its correctness, specifically note and immediately advise Dublin of any interference or discrepancies with the Work. Failure of Service Provider to detect and report discrepancies shall relieve Dublin of any and all Service Provider claims to recover cost, expense or damage resulting there from; and
- (c) participate in the preparation of coordination drawings and work schedules involving the Work, to the extent required or requested by Dublin.

AUTHORIZED REPRESENTATIVE

Unless otherwise stated in writing by Dublin, Service Provider shall have a competent foreman, superintendent, or representative, satisfactory to Dublin, on the Project at all times with authority to act on behalf of Service Provider with respect to the work and for the purpose of receiving notices, orders and instructions. Service Provider shall identify the person or persons so authorized to act on its behalf, in writing, before commencing work on the Project. All decisions, agreements or representations made by Service Provider's designated representative for this Project, whether oral or written, shall be binding on Service Provider.

TESTS AND INSPECTIONS

Service Provider shall schedule all required tests, approvals and inspections of the Work or portions thereof at appropriate times so as not to delay the progress of the Work or the Project. Service Provider shall bear all expenses associated with tests, inspections and approvals required of the Service Provider by the Contract Documents, unless otherwise agreed to.

WORKMANSHIP

Every part of the Work shall be executed in accordance with the Contract Documents in a workmanlike and professional manner. All materials used in the Work shall be furnished in sufficient quantities to facilitate the proper and expeditious execution of the Work, and shall be new.

MATERIALS FURNISHED BY OTHERS

In the event the scope of the Work includes installation of materials or equipment furnished by others, it shall be the responsibility of Service Provider to examine those items, store and install the items, unless otherwise provided for in the Contract Documents, with such skill and care as to ensure a satisfactory and proper installation. Loss or damage due to acts of Service Provider shall be deducted from any amounts due or to become due Service Provider under this Agreement.

SUBSTITUTIONS

No substitutions shall be made in the Work unless permitted in the Contract Documents and then only upon the Service Provider first receiving all approvals required under the Contract Documents for substitutions.

WARRANTY

Service Provider warrants and guarantees that its Work conforms in all respects to the Contract Documents and that it is free from defects in material and/or workmanship. Service Provider hereby warrants and guarantees its work to be free of defects in material or workmanship for a period of one year from the date of substantial completion, or such longer period as may be required by the Contract Documents or provided by any manufacturer's warranty applicable thereto. Service Provider further agrees to furnish any special warranties required by the Contract Documents relating to its Work prior to and as a condition of final payment. Service Provider agrees to perform any remedial or corrective work necessary to satisfy its warranty obligations without cost to Dublin.

UNCOVERING/CORRECTION OF WORK

If directed in writing by Dublin, Service Provider must uncover any portion of the Work, which has been covered by the Service Provider in violation of the Contract Documents or contrary to a directive issued by Dublin. Upon receipt of a written directive from Dublin, Service Provider shall uncover such Work for Dublin's inspection and then restore the uncovered Work to its original condition at the Service Provider's time and expense.

Dublin may direct Service Provider to uncover portions of the Work for inspection by Dublin at any time. Service Provider is required to uncover such Work whether or not Dublin had requested to inspect the Work prior to it being covered. This Agreement shall be adjusted by Change Order for the cost and time of uncovering and restoring any Work which is uncovered for inspection and proves to be installed in accordance with the Contract Documents, provided Dublin had not previously instructed the Service Provider to leave the Work uncovered. If Service Provider uncovers Work pursuant to a directive issued by Dublin, and such Work upon inspection does not comply with the Contract Documents, then Service Provider shall be responsible for all costs and time of uncovering, correcting and restoring the Work so as to make it conform to the Contract Documents.

Service Provider is required to correct in a timely fashion any Work rejected by Dublin for failing to comply with the Contract Documents whether observed prior to the commencement of the warranty period(s) or during the warranty period(s). Service Provider shall correct at its own cost and time and bear the expense of additional services for any nonconforming Work for which it is responsible.

CLEANUP

Service Provider shall at all times: (a) keep the Project and premises free from all rubbish and debris resulting from the Work; (b) broom clean each of its work areas prior to discontinuing work each day; and (c) clean up to the satisfaction of Dublin, including, but not limited to, dirt, grease, machine marks, etc., from walks, ceilings, floors, fixtures, etc. deposited or placed by or resulting from its Work.

If Service Provider fails to immediately commence compliance with cleanup duties within twenty-four (24) hours after written notification from Dublin of non-compliance, Dublin may implement appropriate cleanup measures without further notice and deduct the cost thereof from any amounts due or to become due to Service Provider under this Agreement.

SAFETY OF PERSONS AND PROPERTY

Service Provider is responsible for the health and safety of its employees, agents, subcontractors, and other persons on and adjacent to the Project site. Service Provider, however, shall take all necessary and prudent safety precautions with respect to its Work and shall comply with all safety programs and measures, and with all applicable laws, ordinances, rules, regulations and orders of any public authority for the safety of persons or property, including, but not limited to, OSHA. Service Provider shall also coordinate work activities with Dublin, other contractors or entities, or any other parties involved with this Project to reduce the risk of an accident or injury occurring.

Service Provider shall protect any of its work and materials susceptible to damage from moisture or hosting of mold at all times. Service Provider agrees to indemnify, hold harmless and defend Dublin from any and all claims, losses, costs and expenses (including, but not limited to, all attorneys' and consultants' fees) relating to or arising from mold resulting from Service Provider's Work.

INSURANCE

SERVICE PROVIDER'S INSURANCE

Prior to start of the Work, Service Provider shall procure and maintain in full force and effect Workers' Compensation Insurance, Employer's Liability Insurance, Comprehensive or Commercial General Liability Insurance on an occurrence basis, and any additional insurance required of Service Provider. Service Provider shall deliver all certificates of insurance to Dublin, or upon request, copies of the actual insurance policies. All liability insurance policies described above shall be written on a comprehensive form and shall conform to the laws of the State of Ohio. Before any of the Service Provider's employees perform any work on the Project, Service Provider shall furnish Dublin with the Insurance Company's certificate that such coverage has been provided and each certificate shall contain the required limits. Dublin shall be specifically named and included as an additional insured party under all coverage required by this Agreement and coverage for such additional insured shall also be amended to include a waiver of subrogation and primary and noncontributing endorsements in favor of the additional insured.

The types of insurance, and minimum amount of limits, required hereunder are:

- (A) Workers' Compensation Insurance coverage: statutory requirements in the State of Ohio.
- (B) Employers Liability Coverage: The Contractor shall maintain employers liability coverage with (1) an each- accident limit of not less than \$1,000,000, (2) a disease each-employee limit of not less than \$1,000,000, and (3) a disease policy limit of not less than \$1,000,000.
- (C) Commercial General Liability: The Contractor shall maintain commercial general liability ("CGL") coverage that provides (1) an each-occurrence limit of not less than \$1,000,000, (2) a general-aggregate limit of not less than \$2,000,000, and (3) a products and completed-operations aggregate limit of not less than \$2,000,000.
 - 1. The CGL insurance shall be written on ISO occurrence form CG 00 01 10 01 or a substitute form, providing at least equivalent coverage for liability arising from premises, operations, independent contractors, products/completed-operations, personal and advertising injury, and liability assumed under an insured contract.
 - 2. The Contractor shall include the City of Dublin as additional insured under the CGL policy using ISO endorsement CG 20 10 07 04 and ISO endorsement CG 20 37 07 04 or a substitute form(s) providing equivalent coverage.
 - 3. The CGL policy shall be endorsed using ISO endorsement CG 25 03 or a substitute form providing equivalent coverage to provide that the general aggregate limit applies separately to each of the insured's projects.
 - 4. The CGL insurance shall apply as primary and non-contributory insurance with respect to any other insurance or self-insurance programs that cover the additional insured(s).
 - 5. The CGL policy shall not exclude coverage to the additional insured(s) for bodily injury or property damage arising out of the products/completed-operations hazard.
 - 6. The Contractor shall maintain the CGL insurance in effect for no less than 5 years after the earlier of the termination the Contract or Substantial Completion of all Work.
- (D) Business Automobile Liability: The Contractor shall maintain business automobile ("BA") coverage written on ISO form CA 00 01 10 01 or a substitute form, providing at least equivalent coverage with a limit of not less than \$1,000,000 each accident.
 - 1. The coverage shall extend to any auto.
 - 2. The Contractor shall include the City of Dublin as additional insured under the BA policy.
- (E) Umbrella/Excess Liability: The Contractor may employ an umbrella/excess liability policy to achieve the above- required minimum coverage.

1. The Contractor shall maintain umbrella/excess liability coverage with a limit of not less than \$2,000,000 (in addition to the above-required limits).
- (F) Builder's Risk Insurance: The Contractor shall provide and maintain, during the progress of the Work and until Contract Completion, a builder's risk insurance policy to cover all Work in the course of construction including materials used in the construction process, stored on or off-site, or while in transit. This insurance shall be on a special cause of loss form that provides coverage on an open perils basis insuring against the direct physical loss of, or damage to, covered property including, but not limited to, theft, vandalism, malicious mischief, earthquake, tornado, lightning, explosion, breakage of glass, flood, collapse, water damage, and hot and cold testing. This insurance shall be written on a replacement cost basis and shall also include debris removal, and/or demolition occasioned by enforcement of Applicable Law
1. The amount of coverage shall be not less than the total completed value of the Project with a deductible of not more than \$25,000 per occurrence. Any deductible over the amount specified shall be authorized in writing by the Owner and Contracting Authority.
 2. Coverage shall include a provision to pay the reasonable extra costs of acceleration and expediting temporary and permanent repairs to, or permanent replacement of, damaged property. This shall include overtime wages and the extra cost of "express" or other means for rapidly transporting materials and supplies necessary to the repair or replacement.
 3. Coverage shall include "soft cost endorsement" including, but not limited to, the reasonable extra costs of the A/E. and reasonable Contractor extension or acceleration costs.
 4. Coverage shall include material in transit or stored off-site and identified for the Project.
 5. Coverage shall waive all rights between the Owner, Contractor, and Subcontractors at any tier, for damages caused by fire or any other perils to the extent of actual recovery of any insurance proceeds under the policy.
 6. Coverage shall include appropriate sub-limits for installation coverage.
 7. Coverage shall include temporary structures and scaffolding, along with collapse coverage.
 8. Coverage shall be primary to all other applicable insurance.
 9. The Contractor's tools and equipment shall not be covered under the builder's risk policy. It is the Contractor's sole responsibility to maintain such coverage, which shall be included in its Overhead (a component of Contractor's Fee) and not included as a separate item in the Contractor's Schedule of Values.

NUMBER OF POLICIES

Commercial General Liability insurance and other liability insurance may be arranged under a single policy for the full limits required or by a combination of underlying policies

with the balance provided by an Excess or Umbrella Liability Policy. The Umbrella Liability coverage must be as broad or broader than the Primary Insurance Policies.

SUBROGATION

Service Provider on behalf of itself, its insurers, successors and assigns does hereby waive any and all rights of subrogation against Dublin relating to or arising from any loss or damage which is within any insurance coverage of Service Provider, regardless of whether a claim has been submitted to or denied by the insurer.

INDEMNIFICATION AND DUTY TO DEFEND

Except to the extent expressly prohibited by statute, Service Provider agrees to fully indemnify and hold harmless Dublin and its elected officials, agents, officers, representatives, attorneys, employees, volunteers, indemnities, independent contractors and invitees from and against any and all claims, causes of action, amounts, damages, demands, expenses, judgments, liabilities, losses, obligations, proceedings and costs, including actual attorneys' fees, expert witness fees and costs incurred, that in whole or in part, arise out of, involve, result from, relate to or are alleged to have been caused by:

- (a) The performance of any aspect of the Work by Service Provider or any of its subcontractors, independent contractors, suppliers, manufacturers, materialmen or persons or entities for whose acts Service Provider is or may be liable and/or their respective agents and/or employees;
- (b) Act(s), failure(s) to act, omission(s) or negligence of or by Service Provider or any of its subcontractors, suppliers, manufacturers, materialmen or persons or entities for whose acts Service Provider is or may be liable and/or any of their respective agents and/or employees.
- (c) Injury or death to persons or damage to property which arises out of, involves, results from, relates to or is caused by, in whole or in part, any action(s), inaction(s) and/or negligence of or by Service Provider or any of its subcontractors, independent contractors, suppliers, manufacturers, materialmen or persons or entities for whose acts Service Provider is or may be liable and/or any of their respective agents and/or employees.
- (d) The failure of Service Provider to pay its subcontractors, suppliers, materialmen, laborers, union fringe benefits or any other obligation arising in the performance of the Work.

This indemnification provision shall not be construed to negate, abridge or reduce any other rights of Dublin and its elected officials, agents, officers, representatives, attorneys, employees, volunteers, indemnities, independent contractors and invitees.

In the event that any such claims, loss, cost, expense, liability, damage or other injury arise or are made or threatened against any indemnity hereunder, Dublin shall have the right to withhold any payments due or to become due to Service Provider an amount sufficient in its judgment and sole discretion to protect and indemnify in accordance with this provision against any and all such claims, loss, damage, cost and expense.

All indemnity obligations set forth in this Agreement shall survive the termination of this Agreement or the completion of Service Provider's Work.

CHANGES, CLAIMS AND DELAYS

CHANGES

Change to Agreement

Without invalidating this Agreement, Dublin may change, add to or reduce the Work to be performed hereunder. Any such change may be authorized as set forth herein.

Change Order

A Change Order is a document prepared by Dublin and signed by Service Provider stating their agreement upon the change in the scope of the Work, adjustment in the Contract Price and/or to the Project Schedule.

Adjustment in Contract Price

Service Provider shall not be entitled to receive compensation for extra work, materials or changes of any kind regardless of whether ordered by Dublin or Dublin's Representative, unless a written Change Order has been previously issued and signed by Dublin. If a change was ordered by Dublin or Dublin's Representative, and Service Provider performed but did not receive a written Change Order, Service Provider shall be deemed to have waived any claim for extra compensation, including anything related to schedule impacts or lost productivity, regardless of any written or verbal protests or claims by Service Provider. Dublin's issuance of a signed, written Change Order shall be deemed and construed as a condition precedent to Service Provider's filing of a valid claim for extra compensation as a result of Service Provider's performance of any work not originally included as part of the original scope of Work. If a Change Order requires an adjustment in the Contract Price, the adjustment shall be established by one of the following methods:

- (a) mutual agreement on a lump sum, which shall be supported by sufficient information submitted by Service Provider to substantiate the amount, including specifically a labor, material, equipment and Service Provider's cost breakdown;
- (b) unit prices already established in the Agreement or if not established by the Agreement then established by mutual agreement for the adjustment;
- (c) on a time and material basis or, if none, then as otherwise allowed by the Contract Documents, or, if none, as jointly acceptable.
- (d) for overtime work, Service Provider shall only be entitled to recover the premium time differential without mark-up of any kind.

Agreement on any Change Order shall constitute a final settlement, and full accord and satisfaction, of all matters relating to the change in the Work that is the subject of the Change Order, including, but not limited to, the cumulative effect on the Project of all change orders issued to the date thereof, all direct and indirect costs,

home office overhead and any and all adjustments to the Contract Price or Project Schedule.

CLAIMS

Claim

A claim is a demand or assertion made in writing by Dublin or Service Provider seeking an adjustment to the Contract Price and/or Project Schedule, an adjustment or interpretation of the Agreement's terms, or other relief arising under or relating to this Agreement, including the resolution of any matters in dispute between Dublin and Service Provider in connection with the Project.

Timing of Claims

Claims by Service Provider must be made within 21 days after occurrence of the event giving rise to such Claim. Claims must be initiated by written notice to Dublin and must be submitted through the "Statement of Claim" Form. Any submitted "Statement of Claim" Forms must be complete, accurate and contain all information requested by the "Statement of Claim" Form. Failure by Service Provider to present written claims within 21 days of the event giving rise to the claim through the "Statement of Claim" shall constitute an express waiver of any rights to additional time, money or other relief.

Claim Documentation

All Claims presented or submitted by Service Provider shall include all supporting documentation and information to allow Dublin to evaluate the Claim. Dublin may request any additional documentation or information from Service Provider (whether maintained in any form or medium) to assist in assessing and evaluating Service Provider's Claim, and Service Provider agrees to provide the same.

Within ten (10) days of its receipt of a written request, Service Provider shall make available to Dublin or Dublin's Representative any books, records or other documents or information in its possession, custody or control relating to any Claim. Service Provider shall also require its subcontractors and suppliers, regardless of tier, to do likewise.

DELAYS/TIME IMPACT

Should Service Provider delay the progress of the Work so as to cause Dublin to suffer or become liable for any damages, Service Provider agrees to pay to Dublin the full amount

of any and all such damages. Such damages, at Dublin's option, may be deducted from any payments due, or which become due, under the Agreement. Nothing in this paragraph shall limit Dublin's right to claim all actual damages sustained by it

as a result of Service Provider's delay. In addition, Dublin may terminate this Agreement for default as provided in Article 13 herein.

Dublin shall have the right, at any time, to delay or suspend the start or prosecution of the whole or any part of the Work under this Agreement, or to vary the sequence of performance thereof. Progress schedules may from time to time be modified to conform to contract completion requirements.

Dublin shall not be liable to Service Provider for delay to Service Provider's Work by reason of fire or other casualty; or on account of riots or of strikes, or other combined action of the workmen or other persons; or on account of any acts of God; or any other cause, whether foreseen or unforeseen, beyond Dublin's control.

All schedules incorporated into the Contract Documents or provided during the course of the performance of the Work are provided for the Service Provider's convenience. Dublin does not warrant or guarantee such Schedule(s) and Service Provider should not rely upon the sequence or duration of activities as set forth therein for any purpose, including the pricing of the Work. Service Provider specifically acknowledges that the sequence and duration of activities set forth in the Schedule(s) typically change on projects of this size, nature and complexity, and that they are likely to change on this Project. Dublin shall have the right to determine and, if necessary, change the time, order and priority in which the various portions of the Work is to be performed and all other matters relative to the timely and orderly conduct of the Work.

PAYMENT GENERAL PROVISIONS

Schedule of Values

If the Agreement is not a unit price agreement, then the Service Provider shall prepare and submit to the Contractor prior to the due date for the submission of Service Provider's first application for payment, a Schedule of Values apportioned to the various divisions or phases of the Work. The Schedule of Values shall include line items for each portion of the Work. Each line item contained in the Schedule of Values shall be assigned an appropriate monetary price such that the total of all such items shall equal the Contract Price. The Schedule of Values shall be prepared in such detail as may be required by Dublin.

Payment Use and Verification

Service Provider is required to pay for all labor, materials, and equipment used in the performance of the Work. Reasonable evidence, satisfactory to Dublin, may be required to show that all obligations relating to Subcontract Work are current before releasing any payment due to Service Provider. If required by Dublin, before final payment is made for the Work, Service Provider shall submit evidence satisfactory to Dublin that all payrolls, bills for materials and equipment, and all known

indebtedness connected with the Agreement and the Work, have been paid or otherwise satisfied.

Taxes

Service Provider agrees to withhold all municipal income taxes due or payable under the provisions of Chapter 181 of the Codified Ordinances of Dublin, Ohio, for wages, salaries and commissions paid to its employees and further agrees to require that all of its subcontractors shall also withhold any such municipal income taxes due under such chapter for any work completed or services performed related to this Project.

Payment Not Acceptance

Payment to Service Provider by Dublin does not constitute or imply acceptance of any portion of the Work.

PROGRESS PAYMENTS

Applications

Service Provider's Applications for Payment shall, unless otherwise required by Dublin or the Contract Documents, be submitted on the AIA 0702 form and shall be itemized and supported by the Service Provider's Schedule of Values, unit prices, and any other substantiating data as required by Dublin.

Partial Lien Waivers and Affidavits

Service Provider shall obtain from all of its subcontractors, vendors and suppliers, regardless of tier, a waiver of claim under the relevant mechanic's lien laws for the Project of all claim or lien rights for the amounts for which they have received payments with respect to the Project.

Rejection of Service Provider's Payment Application

Dublin may reject a Service Provider's payment application or nullify a previously approved payment application, in whole or in part, as may reasonably be necessary to protect Dublin from loss or damage based upon:

- (a) Service Provider's repeated failure to perform the Work as required by the Contract Documents;
- (b) loss or damage arising out of or relating to the Contract Documents and caused by Service Provider to Dublin;
- (c) Service Provider's failure to properly pay for labor, materials, equipment or supplies furnished in connection with the Work;
- (d) rejected, nonconforming or defective Work, which has not been corrected in a timely fashion;

- (e) reasonable evidence of delay in performance of the Work such that the Work will not be completed in accordance with the Project Schedule, and that the unpaid balance of the Contract Price is not sufficient to offset the additional costs or damages that may be incurred by Dublin as a result of the anticipated delay caused by Service Provider;
- (f) reasonable evidence demonstrating that the unpaid balance of the Contract Price is insufficient to cover the cost to complete the Work; or
- (g) third party claims involving Service Provider or reasonable evidence demonstrating that third party claims are likely to be filed unless and until Service Provider furnishes Dublin with adequate security in the form of a surety bond, letter of credit or other collateral or commitment which are sufficient to discharge such claims if established.

Payment Amount

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

1. The portion of the Contract Price properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the Contract Price allocated to that portion of the Work in the schedule of values, less retainage of ten percent (10%). Pending final determination of cost to Dublin of changes in the Work, amounts not in dispute shall be included and paid upon approval and payment by Dublin.
2. The progress payment amount shall be further modified under the following circumstance: (a) Add, upon Substantial Completion of the Work, a sum sufficient to increase the total payments to the full amount of the Contract Price, less such amounts as Dublin shall determine for incomplete Work, retainage applicable to such Work and unsettled claims.
3. Dublin shall not make advance payments to Service Provider for materials or equipment, which have not been delivered and stored at the site unless the Contract Documents allow otherwise.

Time of Application

For each progress payment period, Service Provider shall submit its progress payment application to Dublin for the Work performed to date no later than the fifth day of each month, unless otherwise agreed.

Stored Materials and Equipment

To the extent permitted by the Contract Documents, applications for payment may include materials and equipment not incorporated into the Work. Approval of payment applications for materials and equipment stored on or off the site shall be conditioned on submission by Service Provider of bills of sale and applicable

insurance or such other procedures satisfactory to Dublin to establish the proper valuation of the stored materials and equipment.

Time of Payment

Dublin shall make progress payments for all undisputed amounts to Service Provider for satisfactory performance of the Work no later than twenty (20) calendar days after receipt of Service Provider's complete payment application.

FINAL PAYMENT

Application

Service Provider may submit its final payment application to Dublin upon acceptance of the Work by Dublin, and upon Service Provider furnishing evidence of fulfillment of the Service Provider's obligations in accordance with the Agreement.

Requirements

When submitting its final payment application, Service Provider shall furnish the following to Dublin:

- (a) the Final Waiver of Lien form. Such form shall be in the amount of the application for final payment and be accompanied by the same Final Lien Waiver form executed by Service Provider's subcontractors, materialmen and suppliers;
- (b) an affidavit that all payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which Dublin might in any way be liable, have been paid or otherwise satisfied;
- (c) consent of Service Provider's surety to final payment, if applicable and required;
- (d) satisfaction of closeout procedures required by Dublin;
- (e) current certificates of insurance establishing that all insurance coverage required by the Agreement shall remain in effect through the final acceptance of the Project by Dublin, or such later date as may be required by the Contract Documents, and that such coverage will not be materially altered, expire or terminate without thirty (30) days prior certified mail notice thereof; and
- (f) other data if required by Dublin, such as receipts, releases, and waivers of liens effective upon payment. Acceptance of final payment by Service Provider shall constitute a waiver of any and all claims (whether known or unknown) by Service Provider except those previously made in writing and identified by Service Provider as unsettled at the time of final application for payment.

Time of Payment

Final payment of the undisputed balance due of the Contract Price shall be made to Service Provider within ten (10) calendar days after receipt of all information required under Section 12.3 of this Agreement.

DISPUTE RESOLUTION

INITIAL DISPUTE RESOLUTION

If a dispute arises out of, or relates to this Subcontract or the alleged breach thereof, the parties shall endeavor to settle the dispute first through direct discussions by and between the parties respective Project Managers or principals.

If the dispute cannot be settled through direct discussions, the parties shall then endeavor to settle the dispute by mediation in accordance with the Construction Industry Mediation Rules of the American Arbitration Association. Notice of demand for mediation shall be filed in writing with the other party to this Agreement with the American Arbitration Association. The demand for mediation shall be made within a reasonable time after written notice of the claim, dispute or other matter in question has been given, but in no event shall it be made when institution of legal or equitable proceedings based on such claim, dispute or other matter in question would be barred by the applicable statutes of limitation. The location of the proceedings shall be in Dublin, Ohio, unless the parties agree otherwise. The parties shall share all costs of the mediation equally.

ARBITRATION/LITIGATION

In the event that a dispute is not resolved as set forth above, Dublin shall have the right, in its sole and exclusive discretion, to elect whether the dispute will then be decided by arbitration or litigation. In the event that Dublin should elect to resolve the dispute through Arbitration it shall so notify Service Provider in writing. The parties will then meet or confer to reach agreement on an arbitrator. The arbitration shall be conducted in general conformity with the Construction Industry Rules of the American Arbitration Association, however, the American Arbitration Association shall not administer the arbitration. The locale of any arbitration hearing shall be Dublin, Ohio. Any award rendered in the arbitration shall be final and binding upon the parties and may be enforced in any court of competent jurisdiction.

In the event that Contractor should elect to resolve the dispute through litigation jurisdiction thereof shall reside exclusively with the Common Pleas court of Franklin County, Ohio.

PREVAILING PARTY

In the event of any arbitration, the prevailing party shall be awarded its share of the arbitration costs and arbitrator compensation. For the purpose of the application of this provision, the arbitrator(s) shall determine the prevailing party as follows: the prevailing party shall be that party who's last written settlement position (demand/offer) made before the commencement of the arbitration hearing(s) is closest to the final award rendered by the arbitrator(s). In order to be considered for the purpose of this provision, any settlement position (demand/offer) must be in writing and must have been delivered by certified mail to the other party. It is the intent of this provision for the arbitrator(s) to identify the true party prevailing in any arbitration proceeding. To that end, in the event that a party seeking relief has not taken a settlement position, i.e. the claimant, the arbitrator(s) shall consider the settlement demand to be the full relief requested in the arbitration demand. In the event that the respondent has not taken a settlement position, the arbitrator(s) shall consider the offer to be a complete rejection of the relief requested by the claimant. Where there are mixed claims and counterclaims, the determination of the prevailing party shall be within the discretion of the arbitrator(s) consistent with the intent of this provision."

WORK CONTINUATION AND PAYMENT

Service Provider shall carry on the Work and maintain the Project Schedule pending final resolution of a Claim including mediation, arbitration or litigation, unless the Agreement has been terminated or the Work suspended as provided for in the Agreement, or the parties otherwise agree in writing to a partial or total suspension of the Work. If Service Provider is continuing to perform in accordance with the Agreement, Dublin shall continue to make undisputed payments as required by the Agreement.

RECOURSE BY DUBLIN

FAILURE OF PERFORMANCE

Notice to Cure

If Service Provider refuses or fails to supply enough properly skilled workers, proper materials, or maintain the Project Schedule, or it fails to make prompt payment to its workers, subcontractors or suppliers, disregards laws, ordinances, rules, regulations or orders of any public authority having jurisdiction, or otherwise is guilty of a breach of a provision of this Agreement, Service Provider may be deemed in default of this Agreement. If Service Provider fails within three (3) working days after written notification to commence and continue satisfactory correction of such default, with diligence and promptness, then Dublin without prejudice to any other rights or remedies, shall have the right to any or all of the following remedies:

- (a) supply such number of workers and quantity of materials, equipment and other facilities as Dublin deems necessary for the satisfactory correction of such default, which Service Provider has failed to complete or perform after the aforesaid notice, and charge the cost thereof to Service Provider, who shall be liable for the payment of same including reasonable overhead and profit;
- (b) contract with one or more additional contractors, to perform such part of the Work, as Dublin shall determine will provide the most expeditious correction of the default and charge the cost thereof to Service Provider;
- (c) without further notice to Service Provider, withhold payment of monies due the Service Provider in accordance with this Agreement; and
- (d) in the event of an emergency affecting the safety of persons or property (as determined in Dublin's sole discretion), Dublin may correct such default, without first giving three (3) working days' written notice to Service Provider, but shall give prompt written notice of such action to Service Provider, and charge the cost thereof to the Service Provider.

Service Provider agrees to indemnify and hold Dublin harmless from and against any and all damage, loss, cost or expense, including the actual attorneys' fees incurred, arising from or relating to the default of Service Provider, regardless of whether Service Provider cures the default or is ultimately determined not to have been in default of its obligations under this Agreement, in which event the termination shall be deemed to have been a termination for Dublin's convenience.

Termination by Dublin Termination for Default/Cause

If Service Provider fails to commence and satisfactorily continue correction of a default within three (3) working days after written notification from Dublin, then the Agreement may be terminated and Dublin may use any materials, implements, equipment, appliances or tools furnished by or belonging to Service Provider to complete the Work. Dublin shall issue a written notice of termination to Service Provider at the time the Agreement is terminated.

Dublin may also furnish those materials, equipment, and/or employ such workers or subcontractors, as Dublin deems necessary to maintain the orderly progress of the Work. Service Provider hereby consents to the assignment of its subcontracts or agreements which Dublin, in its sole discretion, deems necessary for the orderly progress of the Work, immediately upon the issuance of a determination of default.

All costs incurred by Dublin in performing the Work, shall be deducted from any monies due or to become due Service Provider under this Agreement. Service Provider shall be liable for the payment of any amount by which such expense may exceed the unpaid balance of the Contract Price.

Termination for Convenience

Dublin shall have the right to terminate this Agreement for its convenience by providing Service Provider with written notice thereof. Upon Service Provider's receipt of such notification it shall immediately cease work on the Project and take all steps reasonably available to minimize the cost of termination. In the event of such termination, Service Provider shall be entitled to receive as full and complete compensation the value of Work that is properly completed up to the date of termination as identified on the schedule of values, the cost of any stored material not previously paid for or incorporated in the Work which can not be returned or restocked, and reasonable direct costs of demobilization.

Service Provider shall not be entitled to compensation for any field or home office overhead or any profit on work not performed.

In the event that any court or arbitration panel should determine that a termination of Service Provider by Contractor for cause was a breach of the Agreement, any such termination shall immediately be converted to a termination for convenience and Service Provider's damages shall be so calculated.

Use of Service Provider's Equipment

If Dublin performs work under this Article, or subcontracts such work to be so performed, Dublin and/or the persons to whom work has been subcontracted shall have the right to take and use any materials, implements, equipment, appliances or tools furnished by, belonging or delivered to Service Provider and located at the Project for the purpose of completing any remaining Work. Immediately upon completion of the Work, any remaining materials, implements, equipment, appliances or tools not consumed or incorporated in performance of the Work, and furnished by, belonging to, or delivered to the Project by or on behalf of Service Provider, shall be returned to Service Provider in substantially the same condition as when they were taken, normal wear and tear excepted.

BANKRUPTCY

Termination Absent Cure

Should there be filed by or against Service Provider a petition in bankruptcy, or for a reorganization, or should Service Provider become insolvent or be adjudicated as bankrupt or go into receivership, liquidation or dissolution, either voluntarily, involuntarily or under court order, or make a general assignment for the benefit of creditors, or otherwise acknowledge insolvency, then in any such event, each of which shall constitute a default hereunder on the Service Provider's part, Dublin shall have the right, in addition to any other rights and remedies provided by this Agreement, the Contract Documents or by law, to proceed in accordance with the provisions of Article 14 of this Agreement.

Interim Remedies

If Service Provider is not performing in accordance with the Project Schedule at the time a petition of bankruptcy is filed, or at any subsequent time, Dublin may avail itself of such remedies under this Article as are reasonably necessary to maintain the Project Schedule.

EQUAL OPPORTUNITY EMPLOYMENT

Service Provider shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, age or national origin. Service Provider shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, age or national origin.

Such action shall include, but not be limited to the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Service Provider agrees to post in conspicuous places, available to employees and applicants for employment, notices, which may be provided by Dublin setting forth the provisions of this equal opportunity pledge and commitment.

Service Provider shall comply with all provisions of the DPW Regulation on EEO, and the implementing rules, regulations and applicable orders of the State Equal Employment Opportunity Coordinator.

DUBLIN/OWNER:

SERVICE PROVIDER:

CITY OF DUBLIN, OHIO

By:

By:

Its:

Its:

Date:

Date:

APPROVED AS TO FORM:

Law Director

Date: _____

CERTIFICATION OF FUNDS

**City of Dublin Partial Roof Replacement,
Dublin Recreation Center Project
at 5600 Post Road**

I, Angel L. Mumma, Deputy City Manager - Director of Finance of the City of Dublin,
Ohio, certify that:

1. The Council of the City of Dublin, Ohio has appropriated \$ _____ for
the above-referenced project by Resolution No. _____ adopted on
_____, 2014.
2. The amount so appropriated is on deposit or in the process of collection to the
credit of the appropriate fund free from any outstanding obligations.

CITY OF DUBLIN, OHIO

Date: _____

By: _____
Angel L. Mumma
Deputy City Manager – Director of
Finance

NOTICE TO PROCEED
Not Applicable ____

To: _____

You are hereby notified to commence work within ten (10) business days from the date of receipt of this Notice to Proceed. You are required to complete the work within **one hundred twenty (120) consecutive calendar days**.

Return an acknowledged copy of this Notice to Proceed to:

Brian Ashford
Administrative Services - Facilities
6555 Shier Rings Road
Dublin, Ohio 43016

CITY OF DUBLIN, OHIO

Date: _____

By: _____
Brian Ashford
Facilities Manager

RECEIPT OF NOTICE TO PROCEED

Receipt of this Notice to Proceed is hereby acknowledged this ____ day of _____, 2014.

Company Name: _____

Signature: _____

Print Name: _____

Title: _____

NOTICE OF COMMENCEMENT OF PUBLIC IMPROVEMENT
Not Applicable ____

Section 1311.252, Ohio Revised Code

Notice is hereby given of the commencement of a public improvement as follows:

1. The public improvement is identified as:

Project Name:

City of Dublin Partial Roof Replacement, Dublin Recreation Center

Project Number: _____

Location: **5600 Post Road**

2. The public authority responsible for the public improvement is:

City of Dublin, Ohio
5200 Emerald Parkway
Dublin, Ohio 43017

3. The principal contractor and its surety on the public improvement are as follows:

Principal Contractor: _____	Surety: _____
Name _____	Name _____
Address _____	Address _____
City, State _____	City, State _____
Zip Code _____	Zip Code _____
Telephone Number _____	Telephone Number _____

4. The City of Dublin, Ohio first executed a contract with a principal contractor for the public improvement on _____ .

5. The name and address of the representative of the City of Dublin, Ohio upon whom service may be made for the purposes of serving an affidavit pursuant to Section 1311.26 of the Ohio Revised Code is:

**Brian Ashford, Facilities Manager
Facilities Department
6555 Shier Rings Road
Dublin, Ohio 43016**

CITY OF DUBLIN, OHIO

By: _____
**Brian Ashford
Facilities Manager**

Sworn to and subscribed before me this ____ day of _____, 2014.

Notary Public

CHANGE ORDER

Change Order No. _____ Contractor Name: _____

Date: _____

Agreement Date: _____

The following changes are made to the contract documents:

The changes are made for the following reasons:

Change to contract price:

Original contract amount: \$ _____

Current contract amount
adjusted by previous
Change Orders: \$ _____

The contract will be (circle one:
increased/decreased) due to this
Change Order by: \$ _____

New contract amount (including
this Change Order): \$ _____

Change to contract time:

The contract time will be (circle one: increased/decreased) due to this Change Order by _____ calendar days.

The date for completion of all work will be _____, 2014.

This Change Order is signed this _____ day of _____, 2014.

CONTRACTOR

Print Name: _____

Title: _____

CITY OF DUBLIN, OHIO

By: _____
Marsha I. Grigsby
City Manager

By: _____
(signature)

By: _____
Brian Ashford
Facilities Manager

By: _____
Angel L. Mumma
Deputy City Manager - Director
of Finance

SECTION 4
TECHNICAL SPECIFICATIONS

SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including Contract Documents and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Access to site.
4. Coordination with occupants.
5. Work restrictions.
6. Specification and drawing conventions.

1.3 PROJECT INFORMATION

- A. Project Identification: Partial Roof Replacement, Dublin Recreation Center.
 1. Project Location: 5600 Post Road, Dublin, Ohio 43017.
- B. Owner: City of Dublin.
 1. Owner's Representative: Brian Ashford, Facilities Manager, 6555 Shier Rings Road, Dublin, Ohio 43016-8716.
- C. Architect: Schorr Architects, Inc., Tony Schorr, AIA, 230 Bradenton Ave., Dublin, Ohio 43017, 614/798-2096, tschorr@schorrarchitects.com.

1.4 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of Project is defined by the Contract Documents. The general scope includes the following:
 1. Removal of single-ply membrane.
 2. Replacement of wet insulation.
 3. New single-ply roof membrane system.
 4. Replacement of metal copings.
 5. The Contractor is to verify all existing conditions which may affect their bid including, but not limited to the following:
 - a. Existing structural systems and roofing systems.
 - b. Areas and dimensions.
 - c. Size and location of all roof penetrations.

6. The project includes related demolition. It is the Contractor's responsibility to remove and dispose of all materials in accordance with all local, state and federal codes and regulations.
7. The project also includes all sheet metal work, flashings, carpentry and other related work.
8. The project, when finished, is to be complete in every respect.

B. Type of Contract:

1. Project will be constructed under a single prime contract.

C. Permits:

1. The Architect will submit all Contract Drawings and Specifications to the City of Dublin and will pay for the Plan Approval Certificate.
2. Contractor to secure and pay for any licenses or registrations required for the proper execution and completion of the Work.
3. Contractor to arrange for all inspections required to obtain a Certificate of Occupancy.

1.5 ACCESS TO SITE

A. General: Contractor shall have limited use of Project site for construction operations as indicated by requirements of this Section.

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

1. Driveways, Walkways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, public and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
 - a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
 - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

C. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair damage caused by construction operations. **CONTRACTOR WILL BE REQUIRED TO PROVIDE TEMPORARY MEASURES (ROOFING, JOINT SEALANT, ETC.) TO KEEP WATER FROM ENTERING BUILDING. ROOF DRAINS ARE TO BE FLASHED-IN AND WATERTIGHT PRIOR TO LEAVING SITE EACH DAY.**

1.6 COORDINATION WITH OCCUPANTS

A. Full Owner Occupancy: Owner will occupy site and existing building during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits unless otherwise indicated.

1. Do not close or obstruct walkways or exits without written permission from Owner and approval of authorities having jurisdiction.
2. Notify Owner not less than 72 hours in advance of activities that will affect Owner's operations.

3. Contractor is not to enter building without specific permission of the Owner.

1.7 WORK RESTRICTIONS

- A. On-Site Work Hours: Contractor can work from 7:00 a.m. to 7:00 p.m., Monday through Saturday. Contractor will not be able to work on Sundays or Federal Holidays. Contractor to verify local governmental restrictions.
- B. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
 1. Notify Architect and Owner not less than two days in advance of proposed utility interruptions.
- C. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.
 1. Notify Architect and Owner not less than two days in advance of proposed disruptive operations.
 2. Obtain Architect's and Owner's written permission before proceeding with disruptive operations.
 3. Radios will not be permitted.
- D. Nonsmoking Building: Smoking is not permitted within the building. Smoking can take place at designated area determined by the Owner.
- E. Controlled Substances: Use of controlled substances on the Project site is not permitted.

1.8 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
 1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
 2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
- C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:
 1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
 2. Abbreviations: Materials and products are identified by abbreviations scheduled on Drawings.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including Contract Documents and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. General coordination procedures.
 - 2. Requests for Information (RFIs).
 - 3. Project meetings.

1.3 DEFINITIONS

- A. RFI: Request from Owner, Architect, or Contractor seeking information required by or clarifications of the Contract Documents.

1.4 GENERAL COORDINATION PROCEDURES

- A. Coordination: Contractor shall coordinate its construction operations to ensure efficient and orderly installation of each part of the Work.
- B. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
 - 1. Preparation of Contractor's construction schedule.
 - 2. Preparation of the schedule of values.
 - 3. Installation and removal of temporary facilities and controls.
 - 4. Delivery and processing of submittals.
 - 5. Progress meetings.
 - 6. Project closeout activities.

- C. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.

1.5 REQUESTS FOR INFORMATION (RFIs)

- A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.

1. Architect will return RFIs submitted to Architect by other entities controlled by Contractor with no response.
 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of Subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
1. Project name.
 2. Project number.
 3. Date.
 4. Name of Contractor.
 5. Name of Architect.
 6. RFI number, numbered sequentially.
 7. RFI subject.
 8. Specification Section number and title and related paragraphs, as appropriate.
 9. Drawing number and detail references, as appropriate.
 10. Field dimensions and conditions, as appropriate.
 11. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 12. Contractor's signature.
 13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
 - a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.
- C. RFI Forms:
1. Contractor form.
- D. Architect's action: Architect will review each RFI, determine action required, and respond. Allow three working days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.
1. The following Contractor-generated RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for approval of Contractor's means and methods.
 - d. Requests for coordination information already indicated in the Contract Documents.
 - e. Requests for adjustments in the Contract Time or the Contract Sum.
 - f. Requests for interpretation of Architect's actions on submittals.
 - g. Incomplete RFIs or inaccurately prepared RFIs.
 2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt of additional information.
 3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal.
 - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within 7 days of receipt of the RFI response.
- E. RFI Log: The Architect will maintain.

- F. On receipt of Architect's action, immediately distribute the RFI response to affected parties. Review response and notify Architect within seven days if Contractor disagrees with response.
 - 1. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
 - 2. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.

1.6 PROJECT MEETINGS

- A. General: Architect to schedule and conduct project meetings at Project site unless otherwise indicated. The Architect will record discussions and will distribute minutes.
- B. Preconstruction Conference: Architect will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect.
 - 1. Conduct the conference to review responsibilities and personnel assignments.
 - 2. Attendees: Authorized representatives of Owner, Architect, Contractor and its superintendent and major subcontractors, shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 3. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - b. Sequencing.
 - c. Designation of key personnel and their duties.
 - d. Lines of communications.
 - e. Procedures for processing field decisions and Change Orders.
 - f. Procedures for RFIs.
 - g. Submittal procedures.
 - h. Preparation of record documents.
 - i. Use of the premises and existing building.
 - j. Work restrictions.
 - k. Working hours.
 - l. Owner's occupancy requirements.
 - m. Responsibility for temporary facilities and controls.
 - n. Procedures for moisture and mold control.
 - o. Procedures for disruptions and shutdowns.
 - p. Parking availability.
 - q. Office, work, and storage areas.
 - r. Equipment deliveries and priorities.
 - s. First aid.
 - t. Security.
 - u. Progress cleaning.
 - 4. Minutes: Architect will record discussions and will distribute minutes.
- C. Progress Meetings: Architect to conduct progress meetings at weekly intervals.
 - 1. Attendees: Authorized representatives of Owner, Architect, Contractor, and its superintendent and major subcontractors, shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

- a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

- 1) Review schedule for next period.

- 3. Minutes: Architect will record discussions and will distribute minutes.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

SECTION 013200 – CONSTRUCTION SCHEDULE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including Contract Documents and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. By submitting the Bid, the bidder agrees that the periods for performing the Work are reasonable, and that the bidder's work can be complete by the applicable dates for completion.
- B. The completion date below, shall be adhered to unless modified by mutual agreement between the Contractor, Owner and Architect. The Contractor is responsible to maintain progress so as to achieve the milestones including shift work, overtime work, weekend work, supplemental labor and equipment, etc. at no additional cost to the Owner:

<u>MILESTONE ACTIVITY</u>	<u>DURATION (CALENDAR DAYS)</u>	<u>MILESTONE</u>
Submittal Review	14	Day 14
Mobilization	01	Day 15
Construction	91	Day 106
Punch-Out & Closeout Documents	<u>14</u>	<u>Day 120</u>
	Total	120 days

- C. **CONTRACTOR IS TO PROVIDE DAILY CONSTRUCTION REPORTS TO THE ARCHITECT ON A WEEKLY BASIS. IF THESE FORMS ARE NOT PROVIDED WEEKLY, THE CONTRACTOR'S APPLICATIONS FOR PAYMENT WILL NOT BE PAID AND THE WORK WILL BE STOPPED.**

1.3 Historical Weather Data

- A. The Contract Time may be extended by Change Order for the number of days lost due to inclement weather occurring in excess of the "Maximum Expected Days Lost" as shown on the following table. Actual weather experience will be recorded by the U.S. Department of Commerce, National Oceanic and Atmospheric Administration (USDC/NOAA). Inclement weather exists when one or more of the following occurs: the precipitation other than snow and ice exceeds 1/10" within a calendar day, when snow or ice accumulation exceeds 1.0 inch within a calendar day, when maximum temperature for the calendar day is 32 degrees F. or below, or when any combination of these occurs simultaneously. The Contract Time shall not be extended unless actual inclement weather for a number of calendar days in excess of the "Maximum Expected Days Lost" for the Contract Time and that the completion of the work was, in fact, delayed because of such excess inclement weather.

MONTH	Precipitation 0.10" or more	Snow/Ice Pellets 1.0" or more	Max. at 32 Degrees or Below	MAXIMUM EXPECTED DAYS LOST
January	10	3	14	14
February	9	3	12	12
March	9	2	2	9
April	9	0	0	6
May	9	0	0	5
June	8	0	0	5
July	8	0	0	4
August	7	0	0	4
September	7	0	0	5
October	8	0	0	6
November	9	1	1	6
December	10	3	9	10
YEAR TOTAL	103	12	38	108

1.4 SCHEDULE OF WORK

- A. If at any time the Contractor's working force and equipment, in the opinion of the Architect shall be inadequate for securing the necessary progress or required quality of work as herein stipulated, the Contractor shall, if so directed, at his own expense, increase or supplement the working force and equipment an/or perform the work on an overtime or multiple shift basis to such an extent as to give reasonable assurance of compliance with the schedule of completion and the required quality of the work. When so directed, the Contractor shall submit for approval such supplementary construction schedules as may be necessary to demonstrate the manner in which such compliance will be established. Failure to make such demands shall not relieve the Contractor of his obligation to secure the quality and the rate of progress required by the Contract; and the Contractor alone shall be and remain liable and responsible for the efficiency and adequacy of his methods, materials, working force, and equipment, irrespective of whether or not he makes any change as a result of any order or orders received.
- B. Should the Architect require, either for convenience or to move the completion date forward or to otherwise accelerate schedules, causing the Contractor to perform contract work outside of the normal working hours, the Contractor shall do so, in which case the Contractor shall be reimbursed for actual premium payments made for labor overtime worked, with no allowance for overhead or profit. In the event that such overtime work is required the Contractor shall, at the end of each day on which the overtime is worked, furnish daily time slips showing the name or number of each workman employed thereon with the time worked, the character of work performed and the wages to be paid. Loss of efficiency or productivity associated with multiple shift or overtime work, work whether affecting work on which overtime is spent or on work under the contract, shall not be the basis for any claim for additional compensation by the Contractor.

END OF SECTION 013100

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including Contract Documents and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."
- B. File Transfer Protocol (FTP): Communications protocol that enables transfer of files to and from another computer over a network and that serves as the basis for standard Internet protocols. An FTP site is a portion of a network located outside of network firewalls within which internal and external users are able to access files.
- C. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

1.4 ACTION SUBMITTALS

- A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and additional time for handling and reviewing submittals required by those corrections.
 - 1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
 - 2. Initial Submittal: Submit concurrently with startup construction schedule. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
 - 3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.
 - a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.

4. Format: Arrange the following information in a tabular format:
 - a. Scheduled date for first submittal.
 - b. Specification Section number and title.
 - c. Submittal category: Action; informational.
 - d. Name of subcontractor.
 - e. Description of the Work covered.
 - f. Scheduled date for Architect's final release or approval.
 - g. Scheduled date of fabrication.
 - h. Scheduled dates for purchasing.
 - i. Scheduled dates for installation.
 - j. Activity or event number.

1.5 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
 3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
 4. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- B. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
 1. Initial Review: Allow 7 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
 3. Resubmittal Review: Allow 3 days for review of each resubmittal.
- C. Paper Submittals; Place a permanent label or title block on each submittal item for identification
 1. Indicate name of firm or entity that prepared each submittal on label or title block.
 2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
 3. Include the following information for processing and recording action taken:
 - a. Project name.
 - b. Date.
 - c. Name of Architect.
 - d. Name of Contractor.
 - e. Name of subcontractor.

- f. Name of supplier.
 - g. Name of manufacturer.
 - h. Submittal number or other unique identifier, including revision identifier.
 - 1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 061000.01.A).
 - i. Number and title of appropriate Specification Section.
 - j. Drawing number and detail references, as appropriate.
 - k. Location(s) where product is to be installed, as appropriate.
 - l. Other necessary identification.
4. Transmittal for Paper Submittals: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will return without review submittals received from sources other than Contractor.
- a. Transmittal Form for Paper Submittals: Use AIA Document G810.
 - b. Transmittal Form for Paper Submittals: Provide locations on form for the following information:
 - 1) Project name.
 - 2) Date.
 - 3) Name and address of Architect.
 - 4) Name of Contractor.
 - 5) Name of firm or entity that prepared submittal.
 - 6) Names of subcontractor, manufacturer, and supplier.
 - 7) Category and type of submittal.
 - 8) Submittal purpose and description.
 - 9) Specification Section number and title.
 - 10) Specification paragraph number or drawing designation and generic name for each of multiple items.
 - 11) Drawing number and detail references, as appropriate.
 - 12) Indication of full or partial submittal.
 - 13) Transmittal number numbered consecutively.
 - 14) Submittal and transmittal distribution record.
 - 15) Remarks.
 - 16) Signature of transmitter.
- D. Electronic Submittals: Contractor can submit electronically. Identify and incorporate information in each electronic submittal file as follows:
- 1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
 - 2. Name file with submittal number or other unique identifier, including revision identifier.
 - a. File name shall use project identifier and Specification Section number followed by a decimal point and then a sequential number (e.g., LNHS-061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., LNHS-061000.01.A).
 - 3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Architect.
 - 4. Transmittal Form for Electronic Submittals: Use electronic form acceptable to Owner and Architect, containing the following information:

- a. Project name.
 - b. Date.
 - c. Name and address of Architect.
 - d. Name of Contractor.
 - e. Name of firm or entity that prepared submittal.
 - f. Names of subcontractor, manufacturer, and supplier.
 - g. Category and type of submittal.
 - h. Submittal purpose and description.
 - i. Specification Section number and title.
 - j. Specification paragraph number or drawing designation and generic name for each of multiple items.
 - k. Drawing number and detail references, as appropriate.
 - l. Location(s) where product is to be installed, as appropriate.
 - m. Related physical samples submitted directly.
 - n. Indication of full or partial submittal.
 - o. Transmittal number, numbered consecutively.
 - p. Submittal and transmittal distribution record.
 - q. Other necessary identification.
 - r. Remarks.
- E. Options: Identify options requiring selection by Architect.
- F. Deviations and Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.
- G. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
- 1. Note date and content of previous submittal.
 - 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
 - 3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.
- H. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- I. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.

PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES

- A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
- 1. Submit electronic submittals via email as PDF electronic files.
 - a. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.

2. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
 - a. Provide a digital signature with digital certificate on electronically submitted certificates and certifications where indicated.
 - b. Provide a notarized statement on original paper copy certificates and certifications where indicated.

- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
 1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
 2. Mark each copy of each submittal to show which products and options are applicable.
 3. Include the following information, as applicable:
 - a. Manufacturer's catalog cuts.
 - b. Manufacturer's product specifications.
 - c. Standard color charts.
 - d. Statement of compliance with specified referenced standards.
 - e. Testing by recognized testing agency.
 4. Submit Product Data before or concurrent with Samples.

- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
 1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
 - a. Identification of products.
 - b. Notation of dimensions established by field measurement.
 2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches, but no larger than 30 by 42 inches.

- D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
 1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
 2. Identification: Attach label on unexposed side of Samples that includes the following:
 - a. Generic description of Sample.
 - b. Product name and name of manufacturer.
 - c. Sample source.
 - d. Number and title of applicable Specification Section.
 - e. Specification paragraph number and generic name of each item.
 3. For projects where electronic submittals are required, provide corresponding electronic submittal of Sample transmittal, digital image file illustrating Sample characteristics, and identification information for record.

4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 - a. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
 - a. Number of Samples: Submit two full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
- E. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of Architect and Owners, and other information specified.
- F. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- G. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- H. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- I. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- J. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- K. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.
- B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of

Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S ACTION

- A. Action Submittals: Architect will review each submittal and make marks to indicate corrections or revisions required. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.
- B. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.
- C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect.
- D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- E. Submittals not required by the Contract Documents may be returned by the Architect without action.

END OF SECTION 013300

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including Contract Documents and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

1.3 USE CHARGES

- A. Water and Sewer Service from Existing System: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.
- B. Electric Power Service from Existing System: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

1.4 INFORMATIONAL SUBMITTALS

- A. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program.
- B. Moisture-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage.
 - 1. Describe delivery, handling, and storage provisions for materials subject to water absorption or water damage.
 - 2. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and replacing water-damaged Work.

PART 2 - PRODUCTS

2.1 TEMPORARY FACILITIES

- A. Field Offices, General: Contractor can provide prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading. Progress meetings to take place within the Dublin Recreation Center.

- B. Contractor Field Office: Of sufficient size to accommodate needs of construction personnel office activities.
- C. Storage: Contractor can provide lockable trailers sized, furnished, and equipped to accommodate materials and equipment for construction operations. Verify location with the Owner.
 - 1. Contractor can store materials and equipment on roof if they feel the roof can support materials.

2.2 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

PART 3 - EXECUTION

3.1 TEMPORARY UTILITY INSTALLATION AND PARKING

- A. Water Service: Connect to Owner's existing water service facilities. Clean and maintain water service facilities in a condition acceptable to Owner. At Final Completion, restore these facilities to condition existing before initial use.
- B. Sanitary Facilities: Contractor to provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
 - 1. Verify location with the Owner.
 - 2. Use of Owner's existing toilet facilities will not be permitted.
- C. Isolation of Work Areas in Occupied Facilities: Prevent fumes and odors from entering occupied areas.
 - 1. Prior to commencing work, isolate the HVAC system in area where work is to be performed according to coordination drawings.
 - 2. Perform daily construction cleanup and final cleanup using approved, HEPA-filter-equipped vacuum equipment.
- D. Electric Power Service: Connect to Owner's existing electric power service. Maintain equipment in a condition acceptable to Owner.
- E. Parking: Verify location with the Owner.

3.2 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site, except those indicated to be removed or altered. Repair damage to existing facilities.
- B. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

- C. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.
- D. Temporary Fire Protection: Contractor to install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; Contractor to manage fire-prevention program.
 - 1. Prohibit smoking in construction areas.
 - 2. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.

3.3 MOISTURE AND MOLD CONTROL

- A. Contractor's Moisture-Protection Plan: Avoid trapping water in finished work. Document visible signs of mold that may appear during construction.
- B. Provide temporary enclosures and/or roofing as required.
 - 1. Water shall be diverted to or shall be pumped into existing drains and shall not be allowed to run onto ground area or overflow into the building. Contractor shall have on the job site a container of 6 mil clean plastic cover and a wet/dry vacuum sweeper for emergency situations. Cover to be the size of the possible largest area of tear-off. Contractor is to remove only a portion of the existing roof which can be made watertight at the end of each work day. The Contractor will be held responsible for any water damage to the building or its contents during the construction project.

3.4 OPERATION AND TERMINATION

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses. If Contractors are being negligent, Owner may decide to halt use of utilities and Contractor will be responsible to provide and pay for temporary utility use.
- B. Maintenance: Maintain facilities in good operating condition until removal.

END OF SECTION 015000

SECTION 016000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including Contract Documents and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.

1.3 DEFINITIONS

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
 - 3. Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.

1.4 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.
 - 1. Each Contractor is responsible for providing products and construction methods compatible with products and construction methods of other Contractors.
 - 2. If a dispute arises between Contractors over concurrently selectable but incompatible products, Architect will determine which products shall be used.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. **COMPLETELY COVER ALL INSULATIONS DURING DELIVERY AND WHILE STORED ON SITE. DO NOT INSTALL ANY WET INSULATION.** Comply with manufacturer's written instructions.

- B. Delivery and Handling:
 - 1. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 - 2. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.

- C. Storage:
 - 1. Store products to allow for inspection and measurement of quantity or counting of units.
 - 2. Store products that are subject to damage by the elements, in a weathertight enclosure, with ventilation adequate to prevent condensation.
 - 3. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
 - 4. Protect stored products from damage and liquids from freezing.

1.6 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
 - 1. **Manufacturer's Warranty:** Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000

SECTION 017700 - CLEANING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including Contract Documents and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 - 1. Cleaning.
 - 2. Repair of the Work.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.
 - 1. Use cleaning products that comply with Green Seal's GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

PART 3 - EXECUTION

3.1 CLEANING

- A. General: Perform cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. The Contractor shall keep the project broom-clean at all times. All debris shall be removed from the roof daily. Dumpsters will be permitted within the secured perimeter. The dumpsters will not be permitted to leave the Center until after inmate count has taken place. The Owner's dumpsters are not to be used. THE CONTRACTOR IS TO KEEP DEBRIS AND MATERIALS FROM FLYING OFF THE ROOF. IF THIS HAPPENS, THE CONTRACTOR NEEDS TO PICK UP DEBRIS IMMEDIATELY.
- C. During the course of the project, the Contractor needs to clean all interior spaces affected by the construction process. This cleaning needs to be coordinated with the Owner's Representative.
- D. At the conclusion of the project the following is to be done:

1. Remove all remnants of roofing system, sealants, etc. from these roof areas.
2. Sweep this roof area clean of all debris.
3. Remove all adhesive off building and metal surfaces.
4. Wipe metal fascia, copings etc. clean.
5. Remove all tools, equipment, etc. from the site.

3.2 REPAIR OF THE WORK

- A. Complete repair and restoration operations before requesting inspection for determination of Final Completion.
- B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces and touching up with matching materials. Where damaged or worn items cannot be repaired or restored, provide replacements. Restore damaged construction and permanent facilities used during construction to specified condition.

END OF SECTION 017700

SECTION 017839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including Contract Documents and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for project record documents.

1.3 CLOSEOUT SUBMITTALS

- A. Record Drawings: Comply with the following:
 - 1. Number of Copies: Submit one set of marked-up record prints.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.
 - 1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Accurately record information in an acceptable drawing technique.
 - c. Record data as soon as possible after obtaining it.
 - d. Record and check the markup before enclosing concealed installations.
 - 2. Content: Types of items requiring marking include, but are not limited to, the following:
 - a. Dimensional changes to Drawings.
 - b. Revisions to details shown on Drawings.
 - c. Changes made by Change Order or Construction Change Directive.
 - d. Changes made following Architect's written orders.
 - 3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
 - 4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.

5. Mark important additional information that was either shown schematically or omitted from original Drawings.
6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project.
- B. Maintenance of Record Documents: Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Architect's reference.

END OF SECTION 017839

SECTION 061000 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including Contract Documents and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Wood blocking and nailers.

1.3 DEFINITIONS

- A. Dimension Lumber: Lumber of 2 inches nominal or greater but less than 5 inches nominal in least dimension.
- B. Lumber grading agencies, and the abbreviations used to reference them, include the following:
 - 1. NeLMA: Northeastern Lumber Manufacturers' Association.
 - 2. NLGA: National Lumber Grades Authority.
 - 3. SPIB: The Southern Pine Inspection Bureau.
 - 4. WCLIB: West Coast Lumber Inspection Bureau.
 - 5. WWPA: Western Wood Products Association.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Stack lumber flat with spacers beneath and between each bundle to provide air circulation. Protect lumber from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
 - 1. Factory mark each piece of lumber with grade stamp of grading agency.
 - 2. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
 - 3. Provide dressed lumber, S4S, unless otherwise indicated.

- B. Maximum Moisture Content of Lumber: 19 percent.

2.2 MISCELLANEOUS LUMBER

- A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
 - 1. Blocking.
 - 2. Nailers.
- B. For items of dimension lumber size, provide Construction or No. 2 grade lumber and any of the following species:
 - 1. Hem-fir (north); NLGA.
 - 2. Mixed southern pine; SPIB.
- C. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.

2.3 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
 - 1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.
- B. Nails, Brads, and Staples: ASTM F 1667.
- C. Power-Driven Fasteners: NES NER-272.
- D. Wood Screws: ASME B18.6.1.
- E. Lag Bolts: ASME B18.2.1.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.
- B. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- C. Sort and select lumber so that natural characteristics will not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.

- D. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
 - 1. NES NER-272 for power-driven fasteners.
 - 2. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.
 - 3. Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments," in ICC's International Residential Code for One- and Two-Family Dwellings.

- E. Use steel common nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood. Drive nails snug but do not countersink nail heads unless otherwise indicated.

3.2 WOOD BLOCKING AND NAILER INSTALLATION

- A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.

- B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces unless otherwise indicated.

END OF SECTION 061000

SECTION 075323 - ETHYLENE-PROPYLENE-DIENE-MONOMER (EPDM) ROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including Contract Documents and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:

1. Removal of existing roofing system, wet insulations, metal trim, etc. as indicated on the drawings.
2. Adhered ethylene-propylene-diene-monomer (EPDM) roofing system.
3. Roof insulation and saddles.
4. Vapor retarder.
5. THE CONTRACTOR AND ROOFING MANUFACTURER ARE REQUIRED TO REVIEW THE CONTRACT DOCUMENTS AND THE EXISTING CONDITIONS. IN SUBMITTING A BID, THEY GUARANTEE THEY WILL PROVIDE WARRANTIES SPECIFIED WITHOUT REQUIRING MODIFICATIONS. IF MODIFICATIONS ARE NEEDED, THEN THE COST FOR SUCH MODIFICATIONS IS TO BE INCLUDED IN THE BID. THERE WILL NOT BE ANY ADDITIONAL COST TO THE OWNER FOR UNKNOWN DETAILS TO MEET MANUFACTURER'S SPECIFICATIONS.

1.3 DEFINITIONS

- A. Roofing Terminology: Definitions in ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" apply to work of this Section.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For roofing system. Include seam layout, insulation layout and all edge and penetration details:
 1. Base flashings and membrane terminations.
 2. Custom details for project requirements (edge installations, etc...)
 - a. Manufacturer's standard details are not acceptable.
- C. Edited copies of the manufacturer's roofing specifications and warranty.
- D. Uplift pressure classification data.
 1. Roof system shall meet the following design pressures per ASCE7 wind design:
 - a. Field: 30 psf

- b. Perimeter: 45 psf
- c. Corners: 60 psf

- E. Fire classification data.
- F. Material safety data sheets.
- G. Contractor is required to provide with initial submittals, approved pre-installation notice to show manufacturer's required Pre-Installation Notice (PIN) has been accepted and approved by the manufacturer. PIN must clearly state that all metal installed on the project will be supplied and warranted by the primary roof system manufacturer.
- H. Qualification Data: For Installer and manufacturer.
- I. Sample Warranties: For manufacturer's special warranties

1.5 QUALITY ASSURANCE

- A. THE ROOFING MANUFACTURER IS REQUIRED TO HAVE MANUFACTURED THEIR OWN MEMBRANE FOR A MINIMUM OF TEN (10) YEARS IN THEIR OWN FACILITIES.
- B. Roofing system installation shall be performed by an installer trained and approved by the manufacturer for a minimum of 5 years. The installer and his workmen shall be certified by the manufacturer and are subject to the approval of the Owner and the Architect.
- C. The Roofing Contractor is to have five years experience installing the roofing system with the manufacturer they bid. Also, the Superintendent is to have five years experience installing the roof system specified. The Superintendent is to be familiar with the requirements of this project and is to be on the job at all times when roofing system work is in progress.
- D. The manufacturer's representative shall inspect project a minimum of 4 times during the installation; just prior to the installation of the system, at 25% completion, 50% completion, and at the completion of the installation. They shall advise the Architect of their findings in writing. The Contractor is required to correct any defective work indicated as such by the manufacturer's representative at no cost to the Owner.
 - 1. The manufacturer's representative shall notify the Architect of the time they plan to visit the site so that Architect and/or owner(s) representative may be on site.
 - 2. A copy of the manufacturer's inspection report must be supplied to the Architect within 72 hours after the inspection.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.
- B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.
 - 1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.

- C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.
- D. Handle and store roofing materials, and place equipment in a manner to avoid permanent deflection of deck.

1.7 FIELD CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.

1.8 WARRANTY

- A. At areas to receive 60 mil membrane, provide a written twenty (20) year Manufacturer's Total System Warranty with no dollar limit. At areas to receive 90 mil membrane, provide a written thirty (30) year Manufacturer's Total System Warranty with no dollar limit. This warranty is to be non-prorated. This warranty is to cover ALL materials and workmanship used to install those materials including the membrane, flashing, fasteners, adhesives, insulations, sheet metal, metal fascia and coping systems, SKYLIGHTS, etc. The warranty is to include any labor and/or materials required to make any repairs including accidental cuts and punctures without limit to the amount of hours, incidents, or other monetary caps. Warranty is to include verbiage that states warranty covers damages due to winds up to 90 m.p.h. for the roofing and for the metal fascias and copings. There are to be no inspection fees for any manufacturer inspections during the twenty years. Nor shall Owner be required to submit yearly inspection reports in order to maintain warranty.
- B. In addition to and without limiting any other warranty or repair requirement in the Contract Documents, Contractor shall provide a roofing installer's written guarantee for all material and workmanship against defects for a period of two (2) years.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Source Limitations: Obtain all components for roofing system from manufacturer approved by membrane roofing manufacturer.

2.2 PERFORMANCE REQUIREMENTS

- A. General Performance: Installed roofing and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Roofing and base flashings shall remain watertight.
 - 1. Accelerated Weathering: Roofing system shall withstand 2000 hours of exposure when tested according to ASTM G 152, ASTM G 154, or ASTM G 155.
 - 2. Impact Resistance: Roofing system shall resist impact damage when tested according to ASTM D 3746 or ASTM D 4272.

- B. **Material Compatibility:** Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roofing manufacturer based on testing and field experience.
- C. The roofing system is to remain secured and watertight for a peak gust for wind velocity of 90 m.p.h. Metal fascias and copings to remain secure and watertight for a peak gust for wind velocity of 90 m.p.h.
- D. The roofing system installation shall meet uplift pressure in accordance with ASCE-7 or ANSI-SPR1 and has been tested and certified by an independent agency.
- E. **Exterior Fire-Test Exposure:** ASTM E 108 or UL 790, Class A; for application and roof slopes indicated; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
- F. **Fire-Resistance Ratings:** Comply with Class A fire-resistance-rated assembly. Identify products with appropriate markings of applicable testing agency.

2.3 EPDM ROOFING

- A. **EPDM:** ASTM D 4637, Type II, scrim or fabric internally reinforced, uniform, flexible EPDM sheet.
 - 1. **Manufacturers:** Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include the following:
 - a. Carlisle SynTec Incorporated.
 - b. Firestone Building Products.
 - c. Johns Manville
 - d. Versico Incorporated.
 - 2. **Thickness:** 60 mils, nominal, 90 mils, nominal. Reference drawing for locations for each thickness.
 - 3. **Exposed Face Color:** Black.

2.4 AUXILIARY ROOFING MATERIALS

- A. **General:** Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with roofing.
 - 1. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.
- B. **Sheet Flashing:** 60-mil- thick EPDM, scrim or fabric internally reinforced, partially cured or cured, according to application.
- C. **Bonding Adhesive:** Manufacturer's standard.
- D. **Seaming Material:** Manufacturer's standard, synthetic-rubber polymer primer and 3-inch- wide minimum, butyl splice tape with release film.
- E. **Lap Sealant:** Manufacturer's standard, single-component sealant.
- F. **Water Cutoff Mastic:** Manufacturer's standard butyl mastic sealant.

- G. Fasteners: Factory-coated steel fasteners complying with corrosion-resistance provisions in FM Global 4470, designed for fastening membrane to substrate, and acceptable to roofing system manufacturer.
- H. Pourable Sealer; two-part polyurethane, two-color for reliable mixing.
- I. Termination Bars; aluminum bars with integral caulk ledge; 1.3 inches wide by 0.01 inch thick.
- J. Roofing sealants; compatible with membrane and other adjoining materials and in accordance with membrane manufacturer's specification.
- K. Premolded boots and pipe flashing; semi-cured and uncured flashing strips.
- L. Clamps; stainless steel air craft type.

2.5 VAPOR RETARDERS

- A. Self-adhering vapor retarder comprised of SBS modified bitumen adhesive, factory-laminated to a tri-laminate woven, high-density polyethylene top surface. Acceptable products are as follows:
 1. Firestone Building Products; V-Force.
 2. Carlisle Syntec, Incorporated; CCW.
 3. Soprema; Sopravap'r.
 4. Johns Manville; JM Vapor Barrier SA.

2.6 ROOF INSULATION

- A. General: Preformed roof insulation boards manufactured or approved by EPDM roofing manufacturer, selected from manufacturer's standard sizes suitable for application, of thicknesses indicated.
- B. Contractor to remove and replace all wet insulation. The roofs have been scanned and the approximate location of wet insulation has been marked. Contractor to include a unit price per square foot for additional replacement. A change order will be processed once exact amounts are determined. SIX HUNDRED (600) SQUARE FEET OF WET INSULATION IS TO BE REMOVED AND REPLACED IN CONTRACTOR'S BASE BID.
- C. 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. Atlas Roofing Corporation.
 2. Carlisle SynTec Incorporated.
 3. Firestone Building Products.
 4. Hunter Panels.
 5. Johns Manville.
 6. Rmax, Inc.
- D. Flat and tapered roof insulation; minimum (2) layers staggered , rigid, closed cell polyisocyanurate foam core bonded to heavy duty glass filter mat facers, long term thermal resistance (LTTR) of approximately 6.0 per inch, selected for chemical compatibility with specific manufacturer's roofing membrane, compressive strength of 20 psi when tested in accordance with ASTM C1289. Reference drawings for flat versus tapered and thicknesses.

- E. **COVERBOARD:** 1/2", high density, 120 P.S.I., rigid polyisocyanurate foam core bonded to heavy duty glass fiber mat facers. (LTTR) of 2.5 or greater, surface water absorption of 3% maximum when tested in accordance with ASTM C209, compressive strength of 120 psi when tested in accordance with ASTM D1621, density of 5 pcf when tested in accordance with ASTM D1622, mold growth resistance passing ASTM D3273.
- F. Provide preformed saddles, polyisocyanurate insulation, crickets, tapered edge strips, and other insulation shapes where indicated for sloping to drain. Fabricate to slopes indicated.

2.7 INSULATION ACCESSORIES

- A. General: Roof insulation accessories recommended by insulation manufacturer for intended use and compatibility with roofing.
- B. Adhesive attachment where indicated on the drawings: Insulation manufacturer's recommended adhesive formulated to attach roof insulation to substrate or to another insulation layer as follows:
 - 1. Spray-applied or bead applied, low-rise, two-component urethane adhesive to be applied in accordance with manufacturer's requirements for uplift and wind warranty.
- C. Fastener attachment where indicated on the drawings: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions is FM Global 4470, designed for fastening insulation to substrate and acceptable to roofing system manufacturer.

2.8 WALKWAYS

- A. Flexible Walkpads: Factory-formed, heavy-duty, solid-rubber, slip-resisting, surface-textured walkway pads, approximately 375 mil thick and acceptable to roofing system manufacturer.

PART 3 - EXECUTION

3.1 GENERAL

- A. Where indicated, remove existing roofing system, insulations, etc. complete down to metal deck. Remove all debris in metal deck flutes. At other areas where not removed, cut existing membrane 10' center to center.
- B. Install roofing, insulation, flashings, and accessories in accordance with roofing manufacturer's published instructions and recommendations for the specified roofing system. Where manufacturer provides no instructions or recommendations, follow good roofing practices and industry standards. Comply with federal, state, and local regulations.
- C. Obtain all relevant instructions and maintain copies at project site for duration of installation period.
- D. Do not start work until Pre-Installation Notice has been submitted to manufacturer as notification that this project requires a manufacturer's warranty.
- E. Perform work using competent and properly equipped personnel.
- F. Temporary closures, which ensure that moisture does not damage any completed section of the new roofing system, are the responsibility of the applicator. Completion of flashings, terminations, and

temporary closures shall be completed as required to provide a watertight condition at the end of each day. Roof drains to be completely flashed and watertight each day.

- G. Install roofing membrane only when surfaces are clean, dry, smooth and free of snow or ice; do not apply roofing membrane during inclement weather or when ambient conditions will not allow proper application; consult manufacturer for recommended procedures during cold weather. Do not work with sealants and adhesives when material temperature is outside the range of 60 to 80 degrees F.
- H. Protect adjacent construction, property, vehicles, and persons from damage related to roofing work; repair or restore damage caused by roofing work.
 - 1. Protect from spills and overspray from adhesives, sealants and coatings.
 - 2. Particularly protect metal, glass, plastic, and painted surfaces from adhesives and sealants within the range of wind-borne overspray.
 - 3. Protect finished areas of the roofing system from roofing related work traffic.
- I. Until ready for use, keep materials in their original containers as labeled by the manufacturer.
- J. Consult membrane manufacturer's instructions, container labels and Material Safety Data Sheets (MSDS) for specific safety instructions. Keep all adhesives, sealants, primers and cleaning materials away from all sources of ignition.

3.2 EXAMINATION

- A. Examine roof deck to determine that it is sufficiently rigid to support installers, their mechanical equipment and materials and that deflection will not strain or rupture roof components or deform deck.
- B. Verify that the specifications and drawing details are workable and not in conflict with the roofing manufacturer's recommendations and instructions; start of work constitutes acceptance of project conditions and requirements.

3.3 INSTALLATION OF ROOF NAILERS

- A. Wood Nailers: Provide wood nailers at all perimeters and other locations where indicated on the drawings, of total height matching the total thickness of insulation being used.
 - 1. Install with 1/8 inch gap between each length and at each change of direction.
 - 2. Mechanically fasten to deck to resist force of 200 lbf per linear foot.

3.4 INSTALLATION OF VAPOR RETARDER

- A. Where indicated on the drawings, install vapor retarder directly over the metal decks and below the insulation. Install with minimum 3" side laps and 6" end laps. Membrane sheets should be rolled in with a 75 pound roller to fully mate each roll to substrate, including all lap areas. Vapor retarders shall be positively sealed at all edges, penetrations and wall utilizing manufacturer's vapor retarder accessories.

3.5 INSULATION AND COVER BOARD INSTALLATION

- A. Some insulation is to be attached using low-rise foam adhesives. Some insulation is to be attached using fasteners. Reference the drawings.

- B. Install only as much insulation as can be covered with the completed roofing system before the end of the day's work or before the onset of inclement weather.
- C. Lay roof insulation in courses parallel to roof edges.
- D. Neatly and tightly fit insulation to all penetrations, projection, and nailers, with gaps not greater than 1/4 inch. Fill gaps greater than 1/4 inch with acceptable insulation. Do not leave the roofing membrane unsupported over a space greater than 1/4 inch.
- E. Cold Adhesive Attachment: Apply in accordance with membrane manufacturer's instructions and recommendations; "walk-in" individual roof insulation boards to obtain maximum adhesive contact.

3.6 SINGLE-PLY MEMBRANE INSTALLATION

- A. Beginning at low point of roof, place membrane without stretching over substrate and allow to relax at least 30 minutes before attachment or splicing; in colder weather allow for longer relax time.
- B. Lay out the membrane pieces so that field and flashing splices are installed to shed water.
- C. Install membrane without wrinkles and without gaps or fishmouths in seams; bond and test seams and laps in accordance with membrane manufacturer's instructions and details.
- D. Install membrane adhered to the substrate, with edge securement as specified.
- E. Adhered Membrane: Bond membrane sheet to substrate using membrane manufacturer's recommended bonding material, application rate, and procedures.
- F. Edge Securement: Secure membrane at all locations where membrane terminates or goes through an angle change greater than 2 in 12 inches using mechanically fastened reinforced perimeter fastening strips, plates, or metal edging as indicated or as recommended by roofing manufacturer.
 - 1. Exceptions: Round pipe penetrations less than 18 inches in diameter and square penetrations less than 4 inches square.
 - 2. Metal edging: Ensure anchorage of membrane as intended by roofing manufacturer.

3.7 FLASHING AND ACCESSORIES INSTALLATION

- A. Install flashings, including laps, splices, joints, bonding, adhesion, and attachment, as required by membrane manufacturer's recommendations and details.
- B. Metal Accessories: Install metal fascias, edgings and copings in locations indicated on the drawings. Reference Section 077100 Roof Specialties.
- C. Flashing at Walls, Curbs, and Other Vertical and Sloped Surfaces: Install weathertight flashing at all walls, curbs, parapets, and other vertical and sloped surfaces that the roofing membrane abuts to; extend flashing at least 8 inches high above membrane surface.
 - 1. Use the longest practical flashing pieces.
 - 2. Evaluate the substrate and overlay and adjust installation procedure in accordance with membrane manufacturer's recommendations.
 - 3. Complete the splice between flashing and the main roof sheet with specified splice adhesive before adhering flashing to the vertical surface.
 - 4. Provide termination directly to the vertical substrate as shown on roof drawings.

D. Roof Drains

1. Taper insulation around drain to provide smooth transition from roof surface to drain. Use specified pre-manufactured tapered insulation with facer or suitable bonding surface to achieve slope; slope not to exceed manufacturer's recommendations.
2. Position membrane, then cut a hole for roof drain to allow 1/2 to 3/4 inch of membrane to extend inside clamping ring past drain bolts.
3. Make round holes in membrane to align with clamping bolts; do not cut membrane back to bolt holes.
4. Apply sealant on top of drain bowl where clamping ring seats below the membrane.
5. Install roof drain clamping ring and clamping bolts/ tighten clamping bolts to achieve constant compression.

E. Flashing at Penetrations: Flash all penetrations passing through the membrane; make flashing seals directly to the penetration.

1. Pipe Penetrations: Provide penetration pocket at least 2 inches deep, with at least 1 inch clearance from penetration, sloped to shed water.

3.8 WALKWAY INSTALLATION

- A. Walkway Pads: Adhere to the roofing membrane, spacing each pad at minimum of 1.0 inch and maximum of 3.0 inches from each other to allow for drainage.

3.9 FIELD QUALITY CONTROL

- A. Inspection by Manufacturer: Provide all inspections as specified earlier herein as well as final inspection of the roofing system by a Technical Representative employed by roofing system manufacturer specifically to inspect installation for warranty purposes.
- B. Provide copies of all inspection reports to the Architect within 72 hours after inspection.
- C. Perform all corrections necessary for issuance of warranty.

3.10 CLEANING

- A. Clean all contaminants generated by roofing work from building and surrounding areas, including adhesives, sealants, and coatings.
- B. Repair or replace building components and finished surfaces damaged or defaced due to the work of this section; comply with recommendations of manufacturers of components and surfaces.
- C. Remove leftover materials, trash, debris, equipment from project site and surrounding areas.

END OF SECTION 075323

SECTION 076210 - MANUFACTURED ROOF SPECIALTIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SECTION INCLUDES

- A. Provide fabricated retrofit roof drains at existing roofs, where indicated on the drawings. The fixture is installed from the roof surface and provides a watertight connection to the existing plumbing and roofing system. The fixture is designed so that it may be installed without removing the existing drain body and plumbing.
- B. Provide new ladders where indicated on the drawings.

1.3 REFERENCES

- A. ANSI/SPRI RD-1 2004
- B. CAN/ULC-C790.4-1996.

1.4 SUBMITTALS

- A. Provide manufacturer specification and data sheet.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to project site in manufacturer's original packaging, marked with manufacturer's name, product model names, and catalog numbers, identification numbers, and other related information.

PART 2 - PRODUCTS

2.1 MANUFACTURER FOR ROOF DRAINS

- A. Acceptable Manufacturer: OMG Roofing Products or Zurn.

2.2 MATERIALS FOR ROOF DRAINS

- A. Drain Body:
 - 1. Manufactured from 11 gauge (.125") spun aluminum
 - 2. 17 ½ diameter flange with a 12" long, aluminum studs
 - 3. Flange includes six, 2 ½" long stem
 - 4. Depressed sump area
- B. Strainer Dome:
 - 1. Made of cast aluminum
 - 2. Height - 7.25"
 - 3. Outside base diameter – 9.77"

- C. Clamping Ring:
1. Made of cast aluminum
 2. Gravel stop height – 1.2”
 3. Drainage slots – 18 “V” shaped
 4. Six bosses to accept studs on flange

- D. Backflow Seal (UFlow Seal):
1. Mechanical compression seal
 2. Made of Polyamid and EPDM rubber
 3. Required for activation – A UFlow Screwdriver

- E. Nuts and Screws:
1. Six stainless steel locknuts for the studs
 2. Three stainless steel screws to attach strainer to clamping ring

2.3 ACCESSORIES FOR ROOF DRAINS

- A. UFlow Screwdriver: A 12 ½” long shaft with a #2 square socket tip designed to reach the base of the drain stem to activate the backflow seal (UFlow Seal).

2.4 LADDER

- A. Ladder; Aluminum “503 Tubular Rail Low Parapet Access Ladder with Platform and Return” as manufactured by O’Keeffe’s, Inc.

PART 3 EXECUTION

3.1 INSTALLATION OF ROOF DRAINS

- A. Remove the clamping ring, strainer dome, and bolts from the existing drain assembly and discard.
- B. The existing drain leader pipe shall be cleaned of bitumen, dirt, and debris.
- B. Install the retrofit roof drain with aluminum dome into the existing drain leader as per the installation instructions.
- C. Install the flashing material into place per primary roofing manufacturers.

3.2 INSTALLATION OF LADDER

- A. Install ladder as shown on the drawings and as recommended by the manufacturer.

END OF SECTION 076210

SECTION 077100 - ROOF SPECIALTIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including Contract Documents and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Copings.
 - 2. Roof-edge specialties.
 - 3. Roof-edge drainage systems.
 - 4. Reglets, counterflashings and drip edges.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Shop Drawings: For roof specialties.
 - 1. Include plans, elevations, keyed details, and attachments to other work. Distinguish between plant- and field-assembled work.
 - 2. Include details for expansion and contraction; locations of expansion joints, including direction of expansion and contraction.
 - 3. Indicate profile and pattern of seams and layout of fasteners, cleats, clips, and other attachments.
 - 4. Detail termination points and assemblies, including fixed points.
 - 5. Include details of special conditions.
- C. Samples for Initial Selection:
 - 1. For coping and fascia systems.
 - 2. Metal samples of manufacturer standard colors.

1.4 INFORMATIONAL SUBMITTALS

- A. Product Certificates: For each type of roof specialty.
- B. Product Test Reports: For copings and roof-edge flashings, for tests performed by a qualified testing agency.
- C. Sample Warranty: For manufacturer's special warranty.

1.5 QUALITY ASSURANCE

- A. **Manufacturer Qualifications:** A qualified manufacturer offering products meeting requirements that are SPRI ES-1 tested to specified design pressure.
- B. **Source Limitations:** Obtain roof specialties approved by manufacturer providing roofing-system warranty specified in Section 075323 EPDM Roofing.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Do not store roof specialties in contact with other materials that might cause staining, denting, or other surface damage.
- B. Protect strippable protective covering on roof specialties from exposure to sunlight and high humidity, except to extent necessary for the period of roof-specialty installation.

1.7 FIELD CONDITIONS

- A. **Field Measurements:** Verify profiles and tolerances of roof-specialty substrates by field measurements before fabrication, and indicate measurements on Shop Drawings.
- B. **Coordination:** Coordinate roof specialties with flashing, trim, and construction of parapets, roof deck, roof and wall panels, and other adjoining work to provide a leak-proof, secure, and noncorrosive installation.

1.8 WARRANTY

- A. **Roofing-System Warranty:** Roof specialties are included in warranty provisions in Section 075323 EPDM Roofing.
- B. **Special Warranty on Painted Finishes:** Manufacturer agrees to repair finish or replace roof specialties that show evidence of deterioration of factory-applied finishes within specified warranty period.
 - 1. **Fluoropolymer Finish:** Deterioration includes, but is not limited to, the following:
 - a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
 - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
 - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
 - 2. **Finish Warranty Period:** 20 years from date of Final Completion of roofing work.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. **General Performance:** Roof specialties shall withstand exposure to weather and resist thermally induced movement without failure, rattling, leaking, or fastener disengagement due to defective manufacture, fabrication, installation, or other defects in construction.

- B. SPRI Wind Design Standard: Manufacture and install roof-edge specialties tested according to SPRI ES-1.
- C. The roof edge specialties are to be secure and watertight for a peak gust for wind velocity of 90 m.p.h.
- D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, hole elongation, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Provide clips that resist rotation and avoid shear stress as a result of thermal movements. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
 - 1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

2.2 COPINGS

- A. Metal Copings: Manufactured coping system consisting of metal coping cap in section lengths not exceeding 12 feet, concealed anchorage; with corner units, end cap units, and concealed splice plates with finish matching coping caps.
 - 1. Basis-of-Design Product: Subject to compliance with requirements, provide “Perma-Tite Coping” as manufactured by Metal-Era, Inc. or comparable product approved by roofing system manufacturer specified in Section 075323 EPDM Roofing.
 - 2. Formed Aluminum Sheet Coping Caps: Aluminum sheet, 0.050 inch thick. Verify drawings for sizes.
 - a. Surface: Smooth, flat finish.
 - b. Finish: Two-coat fluoropolymer.
 - c. Color: As selected by Architect from manufacturer's full range.
 - 3. Corners: Factory mitered and continuously welded.
 - 4. Coping-Cap Attachment Method: Snap-on.
 - a. Snap-on Coping Anchor Clips: Concealed, 20-gauge galvanized-steel sheet, with integral cleats.

2.3 ROOF-EDGE SPECIALTIES

- A. Roof-Edge Fascia: Manufactured, two-piece, roof-edge fascia consisting of snap-on metal fascia cover in section lengths not exceeding 12 feet and a continuous metal receiver with integral drip-edge cleat to engage fascia cover and secure single-ply roof membrane. Provide matching corner units.
 - 1. Basis-of-Design Product: Subject to compliance with requirements, provide “Anchor-Tite Standard Fascia” as manufactured by Metal-Era, Inc. or comparable product approved by the roofing system manufacturer specified in Section 075323 EPDM Roofing.
 - 2. Formed Aluminum Sheet Fascia Covers: Aluminum sheet, 0.050 inch thick.
 - a. Surface: Smooth, flat finish.
 - b. Finish: Two-coat fluoropolymer.
 - c. Color: As selected by Architect from manufacturer's full range.
 - 3. Corners: Factory mitered and continuously welded.
 - 4. Splice Plates: Concealed, of same material, finish, and shape as fascia cover.
 - 5. Receiver: Extruded aluminum, 0.080 inch thick.

B. Metal-Edge Fascia: Manufactured, two-piece, roof edge fascia consisting of screw-applied metal fascia cover in section lengths not exceeding 12 feet, with a horizontal flange and vertical leg fascia terminating in a drip edge, and a continuous metal receiver with integral drip-edge cleat to engage fascia cover. Provide concealed splice plates of same material, finish, and shape as fascia. Provide matching corner units.

1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product approved by the roofing system manufacturer specified in Section 075323 EPDM Roofing.
2. Formed Aluminum Sheet Fascia Cover: Aluminum sheet, 0.050 inch thick.
 - a. Surface: Smooth, flat finish.
 - b. Finish: Two-coat fluoropolymer.
 - c. Color: As selected by Architect from manufacturer's full range.
3. Corners: Factory mitered and continuously welded .
4. Split Plates: Concealed, of same material, finish, and shape as fascia cover.
5. Receiver: Concealed, 20 gauge, galvanized steel sheet.

2.4 ROOF-EDGE DRAINAGE SYSTEMS

A. Downspouts: Plain rectangular complete with mitered elbows, manufactured from the following exposed metal. Furnish with metal hangers, from same material as downspouts, and anchors.

1. Formed Aluminum: 0.040 inch thick.
 - a. Surface: Smooth, flat finish.
 - b. Finish: Two-coat fluoropolymer.
 - c. Color: As selected by Architect from manufacturer's full range.

2.5 REGLETS, COUNTERFLASHINGS AND DRIP EDGES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Castle Metal Products.
2. Cheney Flashing Company.
3. Fry Reglet Corporation.
4. Heckmann Building Products Inc.
5. Hickman Company, W. P.
6. Keystone Flashing Company, Inc.
7. Metal-Era, Inc.
8. Metal-Fab Manufacturing, LLC.

B. Reglets: Manufactured units formed to provide secure interlocking of separate reglet and counterflashing pieces, from the following exposed metal:

1. Stainless Steel: 0.019 inch thick.
2. Corners: Factory mitered and continuously welded.
3. Masonry Type, Embedded: Provide reglets with offset top flange for embedment in masonry mortar joint.

- C. Counterflashings and Drip Edges: Manufactured units of heights to overlap top edges of base flashings by 4 inches and in lengths not exceeding 12 feet designed to snap into reglets and compress against base flashings with joints lapped, from the following exposed metal:
 - 1. Formed Aluminum: 0.040 inch thick.
 - 2. Aluminum Finish: Two-coat fluoropolymer.
 - 3. Color: As selected by Architect from manufacturer's full range.

2.6 MATERIALS

- A. Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653/A 653M, G90 coating designation.
- B. Aluminum Sheet: ASTM B 209, alloy as standard with manufacturer for finish required, with temper to suit forming operations and performance required.
- C. Aluminum Extrusions: ASTM B 221, alloy and temper recommended by manufacturer for type of use and finish indicated, finished as follows:
- D. Stainless-Steel Sheet: ASTM A 240/A 240M or ASTM A 666, Type 304.

2.7 MISCELLANEOUS MATERIALS

- A. Fasteners: Manufacturer's recommended fasteners, suitable for application and designed to meet performance requirements. Furnish the following unless otherwise indicated:
 - 1. Fasteners for Aluminum: Aluminum or Series 300 stainless steel.
 - 2. Fasteners for Zinc-Coated (Galvanized) Steel Sheet: Series 300 stainless steel or hot-dip zinc-coated steel according to ASTM A 153/A 153M or ASTM F 2329.
- B. Elastomeric Sealant: ASTM C 920, elastomeric polyurethane polymer sealant of type, grade, class, and use classifications required by roofing-specialty manufacturer for each application.
- C. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type joints with limited movement.
- D. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D 1187/D 1187M.
- E. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required for application.

2.8 FINISHES

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Noticeable variations in same piece are unacceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
- D. Coil-Coated Aluminum Sheet Finishes:

1. High-Performance Organic Finish: Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - a. Two-Coat Fluoropolymer: AAMA 2605. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of the Work.
- B. Examine walls, roof edges, and parapets for suitable conditions for roof specialties.
- C. Verify that substrate is sound, dry, smooth, clean, sloped for drainage where applicable, and securely anchored.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

- A. General: Install roof specialties according to manufacturer's written instructions. Anchor roof specialties securely in place, with provisions for thermal and structural movement. Use fasteners, solder, protective coatings, separators, underlayments, sealants, and other miscellaneous items as required to complete roof-specialty systems.
 1. Install roof specialties level, plumb, true to line and elevation; with limited oil-canning and without warping, jogs in alignment, buckling, or tool marks.
 2. Provide uniform, neat seams with minimum exposure of solder and sealant.
 3. Install roof specialties to fit substrates and to result in weathertight performance. Verify shapes and dimensions of surfaces to be covered before manufacture.
 4. Torch cutting of roof specialties is not permitted.
 5. Do not use graphite pencils to mark metal surfaces.
- B. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.
 1. Coat concealed side of uncoated aluminum roof specialties with bituminous coating where in contact with wood, ferrous metal, or cementitious construction.
 2. Bed flanges in thick coat of asphalt roofing cement where required by manufacturers of roof specialties for waterproof performance.
- C. Expansion Provisions: Allow for thermal expansion of exposed roof specialties.
 1. Space movement joints at a maximum of 12 feet with no joints within 18 inches of corners or intersections unless otherwise indicated on Drawings.
 2. When ambient temperature at time of installation is between 40 and 70 deg F, set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures.

- D. Fastener Sizes: Use fasteners of sizes that penetrate wood blocking or sheathing not less than 1-1/4 inches for nails and not less than 3/4 inch for wood screws.
- E. Seal concealed joints with butyl sealant as required by roofing-specialty manufacturer.
- F. Seal joints as required for weathertight construction. Place sealant to be completely concealed in joint. Do not install sealants at temperatures below 40 deg F.

3.3 COPING INSTALLATION

- A. Install cleats, anchor plates, and other anchoring and attachment accessories and devices with concealed fasteners.
- B. Anchor copings with manufacturer's required devices, fasteners, and fastener spacing to meet performance requirements.
 - 1. Interlock face and back leg drip edges of snap-on coping cap into cleated anchor plates anchored to substrate at manufacturer's required spacing that meets performance requirements.

3.4 ROOF-EDGE SPECIALITIES INSTALLATION

- A. Install cleats, and other anchoring and attachment accessories and devices with concealed fasteners.
- B. Anchor roof edgings with manufacturer's required devices, fasteners, and fastener spacing to meet performance requirements.

3.5 ROOF-EDGE DRAINAGE-SYSTEM INSTALLATION

- A. General: Install components to produce a complete roof-edge drainage system according to manufacturer's written instructions. Coordinate installation of roof perimeter flashing with installation of roof-edge drainage system.
- B. Downspouts: Join sections with manufacturer's standard telescoping joints. Provide hangers with fasteners designed to hold downspouts securely to walls and 1 inch away from walls; locate fasteners at top and bottom.
 - 1. Provide elbows at base of downspouts at roof to direct water away from wall.
- C. Parapet Scuppers: Install scuppers through parapet where indicated. Continuously support scupper, set to correct elevation, and seal flanges to interior wall face, and under roofing membrane.
 - 1. Anchor scupper closure trim flange to exterior wall and seal or solder to scupper.
 - 2. Loosely lock front edge of scupper with conductor head.
 - 3. Seal or solder exterior wall scupper flanges into back of conductor head.

3.6 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean and neutralize flux materials. Clean off excess solder and sealants.

- C. Remove temporary protective coverings and strippable films as roof specialties are installed. On completion of installation, clean finished surfaces, including removing unused fasteners, metal filings, pop rivet stems, and pieces of flashing. Maintain roof specialties in a clean condition during construction.
- D. Replace roof specialties that have been damaged or that cannot be successfully repaired by finish touchup or similar minor repair procedures.

END OF SECTION 077100

SECTION 099000 – PAINTINGS AND COATINGS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including Contract Documents and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Use products specified in this section to finish all surfaces exposed to view, unless otherwise indicated.
- B. Do not paint the following:
 - 1. Items specified or provided with factory finish.
 - 2. Brick or precast concrete.
 - 3. Stainless steel, anodized aluminum, bronze, terne, or lead.
 - 4. Equipment nameplates, fire rating labels, and operating parts of equipment.
- C. Materials and products having factory-applied primer are not considered factory finished.
- D. For paint systems, see Schedules at end of Section.

1.3 REFERENCES

- A. ANSI A13.1 - Scheme for the Identification of Piping Systems.
- B. ANSI Z535.1 - Safety Color Code.
- C. ASTM D 16 - Standard Terminology Relating to Paint, Varnish, Lacquer, and Related Products.

1.4 DEFINITIONS

- A. Conform to definitions of terms in ASTM D 16 in interpreting requirements of this specification section.

1.5 SUBMITTALS

- A. Manufacturer's descriptive literature for coating materials and coating application accessories.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store products of this section in manufacturer's unopened packaging until installation.
- B. Establish and maintain storage area conditions for products of this section in accordance with manufacturer's instructions until installation.
- C. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction over project.

1.7 PROJECT CONDITIONS

- A. Do not apply coatings to exterior surfaces except under environmental conditions recommended by coating manufacturer.

- B. Establish and maintain environmental conditions recommended by coating manufacturer before, during, and after application of coatings to interior surfaces.
- C. During application of coating materials, post "WET PAINT" signs.
- D. During application of solvent-based materials, post "NO SMOKING" signs.

1.8 SEQUENCING

- A. Do not allow application of finish coats in an area until moisture-producing construction activities, dust-producing construction activities, and other construction activities which could impair performance or appearance of finish coatings, have been completed in that area.

2.0 PRODUCTS

2.1 MANUFACTURERS

- A. Sherwin Williams
- B. Benjamin Moore
- C. Pittsburgh Paints

2.2 MATERIALS

- A. Paints and Coatings - General:
 - 1. Acceptable products: Indicated in Schedules at the end of this section.
 - 2. Unless otherwise indicated, provide factory-mixed coatings. When required, mix coatings to correct consistency in accordance with manufacturer's instructions before application. Do not dilute or thin coatings, except as instructed.
 - 3. Do not add additives, except as instructed or recommended by coating manufacturer.
 - 4. Supply each coating material in quantity required for this section from a single production run.
 - 5. Colors: To be selected by Architect from manufacturer's full range of standard colors.
- B. Coating Application Accessories: Specified in this section or in coating manufacturer's application instructions, including but not limited to thinners, sealers, primers, cleaning agents, etching agents, cleaning cloths, sanding materials, and clean-up materials.

3.0 EXECUTION

3.1 EXAMINATION

- A. Immediately prior to coating application, ensure that surfaces to receive coatings are dry.
- B. Ensure that moisture-retaining substrates to receive coatings have moisture content within tolerances allowed by coating manufacturer, using moisture measurement techniques recommended by coating manufacturer.
- C. Immediately prior to coating application, examine surfaces to receive coatings for surface imperfections and for contaminants which could impair performance or appearance of coatings, including but not limited to, loose primer, rust, scale, oil, grease, mildew, algae, or fungus, stains or marks, cracks, indentations, or abrasions.

- D. Correct the above conditions and other conditions which could impair performance or appearance of coatings in accordance with specified surface preparation procedures before proceeding with coating application.

3.2 PREPARATION

- A. Do not start work until surfaces to be finished are in proper condition to produce finished surfaces of uniform, satisfactory appearance.
- B. Stains and Marks: Remove completely, if possible, using materials and methods recommended by coating manufacturer; cover stains and marks which cannot be completely removed with isolating primer or sealer recommended by coating manufacturer to prevent bleed-through.
- C. Mildew, Algae, and Fungus: Remove using materials and methods recommended by coating manufacturer.
- D. Remove dust and loose particulate matter from surfaces to receive coatings immediately prior to coating application.
- E. Remove or protect hardware, electrical equipment plates, mechanical grilles and louvers, lighting fixture trim, and other items not indicated to receive coatings which are adjacent to surfaces to receive coatings.
- F. Disconnect equipment adjacent to surfaces indicated to receive coatings.
- G. Move equipment and fixtures adjacent to surfaces indicated to receive coatings to allow application of coatings.
- H. Protect surfaces not indicated to receive coatings which are adjacent to surfaces indicated to receive coatings.
- I. Do not allow coatings on surfaces not indicated to receive them.
- J. Prepare surfaces in accordance with manufacturer's instructions for specified coatings and indicated materials, using only methods and materials recommended by coating manufacturer, and as follows:
- K. Existing Coatings:
 - 1. Remove surface irregularities by scraping or sanding to produce uniform substrate for coating application; apply one coat primer of type recommended by coating manufacturer for maximum coating adhesion.
 - 2. If presence of lead in existing coatings is suspected, cease surface preparation of existing coating and notify Architect immediately.
- L. Ferrous Metals, Unprimed: Remove rust or scale, if present, by wire brush cleaning, power tool cleaning, or sandblast cleaning; remove grease, oil, and other contaminants which could impair coating performance or appearance by solvent cleaning, with phosphoric-acid solution cleaning of welds, bolts and nuts; spot-prime repaired welds with specified primer.
- M. Ferrous Metals, Shop-Primed: Remove loose primer and rust, if present, by scraping and sanding, feathering edges of cleaned areas to produce uniform flat surface; solvent-clean surfaces and spot-prime bare metal with specified primer, feathering edges to produce uniform flat surface.
- N. Galvanized Steel: Wipe down surfaces using clean, lint-free cloths saturated with mineral spirits or lacquer thinner; wipe dry using clean, lint-free cloths.
- O. Stainless Steel: Clean surfaces by pressurized steam, pressurized water, or solvent washing.

3.3 APPLICATION

- A. Apply each coat to uniform coating thickness in accordance with manufacturer's instructions, not exceeding manufacturer's specified maximum spread rate for indicated surface; thins, brush marks, roller marks, orange-peel, or other application imperfections are not permitted.
- B. Allow manufacturer's specified drying time, and ensure correct coating adhesion, for each coat before applying next coat.
- C. Inspect each coat before applying next coat; touch-up surface imperfections with coating material, feathering, and sanding if required; touch-up areas to achieve flat, uniform surface without surface defects visible from 5 feet (1.5 m).
- D. Do not apply succeeding coat until previous coat has been approved by Architect, only Architect-approved coats will be considered in determining number of coats applied.
- E. Remove dust and other foreign materials from substrate immediately prior to applying each coat.
- F. Where coating application abuts other materials or other coating color, terminate coating, making clean sharp termination line without coating overlap.
- G. Where color changes occur between adjoining spaces, through framed openings which are of same color as adjoining surfaces, change color at outside stop corner nearest to face of closed door.
- H. Re-prepare and re-coat unsatisfactory finishes; refinish entire area to corners or other natural terminations.

3.4 RE-INSTALLATION

- A. Re-install hardware, electrical equipment plates, mechanical grilles and louvers, lighting fixture trim, and other items which have been removed to protect from contact with coatings.
- B. Reconnect equipment adjacent to surfaces indicated to receive coatings.
- C. Relocate to original position equipment and fixtures which have been moved to allow application of coatings.
- D. Remove protective materials.

3.5 CLEANING

- A. Clean excess coating materials, and coating materials deposited on surfaces to indicated to receive coatings, as construction activities of this section progress; do not allow to dry.

3.6 PROTECTION

- A. Protected completed coating applications from damage by subsequent construction activities.
- B. Repair to Architect's acceptance coating applications which are damaged by subsequent construction activities in accordance with specified application procedures; re-apply finish coating to nearest adjacent change of surface plane, in both horizontal and vertical directions, where repairs cannot be made to Architect's acceptance.

3.7 SCHEDULE - EXTERIOR PAINT SYSTEMS

A. The products listed are as manufactured by Sherwin-Williams. Equivalent products by Benjamin Moore & Pittsburgh Paints are acceptable.

1. Unprimed & Shop Primed Ferrous Metal Surfaces:
Prime – Kem Kromik Universal Primer B50WZ Series
Paint – Fast Clad DTM Urethane B65W851 Series – Part A & B65V850 Series – Part B
2. Galvanized & Mill Finished Aluminum Surfaces:
Primer – Procryl Universal Primer B66W310 Series
Paint – Fast Clad DTM Urethane B65W851 Series – Part A & B65V850 Series – Part B
3. Wood Surfaces:
Prime – Sher-Cryl HPA High Performance Acrylic Semi-Gloss Extra White B66W00351
Paint – Pro Industrial Multi-Surface Acrylic Extra White BN66W00501

END OF SECTION 099000

DIVISION 26
ELECTRICAL INDEX

26 00 00 ELECTRICAL

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SECTION 26 05 00

COMMON WORK RESULTS FOR ELECTRICAL

PART 1 GENERAL

1.01 PREFACE

- A. The Work shall be performed under a single Prime General Trades Contract.
- B. Electrical Contractor is a Subcontractor to the General Trades Contractor.
- C. Electrical Contractor is responsible for the Work described in Division 26, "Electrical," Sections 26 00 00 through 26 99 99 (as included), unless otherwise noted.
- D. **Terminology:** In the Sections listed above, the term "Contractor" shall mean the Electrical Contractor performing Work on this Project, unless otherwise noted.
- E. Contractor is responsible for the more restrictive requirement between these general provisions and other requirements contained elsewhere in the Specifications.

1.02 RELATED DOCUMENTS

- A. Refer to the following additional Divisions and Sections for specific requirements, responsibilities, and methods relating to Division 26 Work:
 - 1. Division 00, "Procurement and Contracting Requirements": All sections.
 - 2. Division 01, "General Requirements": All sections.

1.03 DESCRIPTION

- A. Furnish material, labor, tools, accessories, and equipment to complete and leave ready for operation all electrical systems of this Project as described in these Specifications and as shown on the Drawings.
- B. Use sufficient journeymen electricians and competent supervisors in execution of this portion of the Work to ensure proper and adequate installation throughout. In the acceptance or rejection of installed electrical system, no allowance will be made for lack of skill on the part of workers.
- C. Maintain existing facilities in operation whenever possible. Occupied sections of the building will remain in use throughout construction. Coordinate with the Architect/Engineer (A/E) and Owner.
- D. Work includes, but is not limited to, the following:
 - 1. Demolition work.
 - 2. Electrical and cathodic protection:
 - a. Lightning protection system.

- E. The electrical system shall not be considered complete and acceptable unless, and until, all Code and Governing Agency requirements are satisfied.
- F. Refer to Division 01 and Section 26 05 60, "Requirements for Completion of Electrical Work," for additional requirements.

1.04 COORDINATION OF WORK

- A. Contractor shall read the entire Specification covering other branches of the Work. It will be held responsible for the coordination of its work with the work performed by other Trades.
- B. Contractor shall coordinate its Work carefully with all other Contractors.
- C. Do not install work without first coordinating the layout, routing, etc., with other Contractors whose work may be affected.
- D. Coordinate location of all work with other Contractors and equipment.
- E. Consult all Contract Drawings that may affect the location of any equipment, and wiring and conduit, and make any other adjustments in location as necessary to secure coordination.
- F. Contractor shall be responsible for the cost of additional engineering work required for changes to the work as shown or described, due to the relocation of items requested by the Contractor.
- G. Review all equipment nameplate ratings and advise the A/E immediately of any system design changes required to wire the equipment properly.

1.05 EXAMINATION OF SITE

- A. Certain existing conditions may affect the manner or sequence of the performance of the Work.
- B. Before submitting its Bid, it is recommended that the Contractor visit the site of the proposed Project.
- C. Existing services, structures, and operating schedules may need to be reviewed, prior to bidding, to facilitate the installation of the Work without disrupting the normal operation of the facility.
- D. After receipt of Bids, no allowances will be made for lack of knowledge of Project conditions.
- E. Verify and reconcile Work required by the Contract Documents with existing conditions at the Site.
- F. Should the Contractor note any discrepancies during the Bidding Period, it shall notify the A/E immediately, in writing, to permit issuance of an Addendum to prevent misunderstandings at a later date.

1.06 STANDARDS OF QUALITY

- A. It is the intent that the Electrical Work be complete in every respect.

- B. All work on this Project shall conform to applicable National, State, and Local Building Codes and any local laws, ordinances, regulations, and requirements pertaining to this work.
- C. Contractor shall provide Work of the highest quality, conforming to the accepted practices and standards of the Trades involved.
- D. Further definition of quality is given by reference to various Laws, Codes, Standards, and Regulations.
- E. Only a Contractor and craftsmen licensed by the State as required shall provide this Electrical Work.
- F. Install Work in compliance with the currently enforced Edition of all applicable Codes, Regulations, and Standards, unless otherwise noted.
- G. Any Law, Code, Standard, or Regulation referred to in other Sections of Division 26 is included in its entirety as a part of these Specifications.
- H. Give notice and comply with all Laws, Ordinances, Rules, Regulations, and lawful orders of the Code Authority having Jurisdiction bearing on the performance of the Electrical Work.
 - 1. If the Contractor observes that any of the Contract Documents are at variance therewith in any respect, it shall promptly notify the A/E in writing, and any necessary changes will be arranged by the A/E.
 - 2. If the Contractor performs any Work knowing it to be contrary to such Laws, Ordinances, Rules, and Regulations, and fails to give prior notice to the A/E, the Contractor shall assume full responsibility for, and shall bear all costs associated with, correcting the Work.
- I. The following Codes apply to this Work:
 - 1. State of Ohio: Ohio Administrative Code (OAC) 4101:1: 2011 Ohio Building Code.
 - 2. National: National Fire Protection Association (NFPA). Codes as listed in subsequent Specification Sections, including 2014 NFPA 70, "National Electrical Code® (NEC)."
- J. Methods and materials shall be certified where noted in the individual Specification Sections.
- K. All equipment and appliances installed on this Project shall bear the label of an Approved Testing Agency, and shall be installed in accordance with the Manufacturer's instructions for the labeled equipment and appliances.
- L. All electrical equipment and wiring shall be listed by Underwriters Laboratories, Inc.

1.07 CONTRACT DRAWINGS

- A. The Contract Drawings are schematic and show approximate locations, general arrangement, and general extent of Work. Not all items of work required for a complete and operating system are shown on the Drawings. Refer also to the Specifications for additional work that shall be provided. If

a conflict occurs, the Contractor is responsible for the more restrictive requirement.

- B. Verify exact locations in the field, and coordinate with all other Contractors.
- C. The A/E shall approve, in writing, significant deviations from the Drawings.
- D. The A/E reserves the right to make minor changes in location that do not require additional labor or material, up to the time of roughing-in, without additional cost. The A/E reserves the right to determine what is "significant" and what is "minor."
- E. If a conflict occurs between the Drawings and Specifications, immediately submit a written request for an interpretation or clarification from the A/E, who shall determine which interpretation has precedence. Refer to Article 3.2 of the General Conditions.
- F. Should overlap of work among the Trades become evident, immediately submit a written request for an interpretation or clarification from the A/E, who shall determine which interpretation has precedence. Refer to Article 3.2 of the General Conditions. In such event, none of the Contractors shall assume that it is relieved of the Work that is specified under its branch unless instructions are received, in writing, from the A/E.

1.08 APPLICABLE CODES, LICENSES, PERMITS, FEES, AND NOTICES

- A. The A/E will submit all Contract Drawings and Specifications to the State of Ohio Department of Commerce, Division of Industrial Compliance and Labor, Bureau of Building Code Compliance, pay the application fee to secure Plan Approval, and obtain and pay for the Plan Approval Certificate.
- B. Contractor shall secure and pay for any **ADDITIONAL** permits, governmental fees, bonds, licenses, and inspections required for the proper execution and completion of the Electrical Work.
- C. Contractor shall pay for all other fees and other charges related to Electrical Work and payable to Code Enforcement Agencies.
- D. It may be necessary to fully complete several portions of Work in one area, before other areas are started.

1.09 CONTRACTOR'S RESPONSIBILITY

- A. Provide a Superintendent, on site, whose duties include the directing and supervising of work. Inform the A/E of the Superintendent's name and phone number, and the method of contact when the Superintendent is not at the site.
- B. Submit shop drawings for the installation of the electrical system for review by the A/E before any electrical work is installed, enlarged, or extended. Under **NO** circumstances shall any Work be performed prior to receiving shop drawings reviewed by the A/E.

- C. As soon as possible after the Award of the Contract and the approval of Shop Drawings, the Contractor shall place orders for materials and equipment required for its Work. Immediately inform the A/E in writing as to any materials and equipment that cannot be obtained within the required time period, either due to conditions of the market or other governing factors.
- D. Inspect each item of materials or equipment immediately prior to installation. Reject damaged and defective items.
- E. Contractor shall determine erection procedures and sequence the construction to keep its work on schedule and to ensure the safety of the building and its occupants. This includes supplying any temporary bracing, guys, or tie-downs that might be required. Such materials shall remain the Contractor's property after completion of the Project.
- F. Provide attachment and connection devices and methods for securing work. Secure all work true to line and level and within recognized industry tolerances. Allow for expansion and building movement.
- G. Recheck measurements and dimensions of the Work as an integral step of starting each installation.
- H. Where mounting heights are not indicated, individual units generally can be mounted at industry-recognized standard mounting heights for the particular application indicated. However, the A/E must approve all mounting heights.
- I. Coordinate the enclosure or concealment of the Work with the required inspections and tests so as to minimize the necessity of uncovering work for that purpose.

1.10 FACTORY INSTALLATION AND START-UP

- A. For those items of equipment that are to be installed, tested, started up, and certified by a factory-trained Representative, furnish a letter from the Manufacturer to the A/E stating that this service shall be provided for this Project, describing the scope of services to be provided, and disclosing the name of the Representative assigned to provide the required services.

1.11 GUARANTEES AND WARRANTIES

- A. Contractor shall guarantee its equipment, workmanship, and materials for a period of (1) year from the date of Contract Completion. Should defects develop within this period, the Contractor shall, at no cost to the Owner, remedy the defects and reimburse the Owner for all damage to other Work caused either by the defects or as a result of the work of correcting the same.
- B. Provide a copy of OFCC Form 390-02, "Certification of Warranty Commencement," signed by the Owner and the A/E. Insert copies in each Operating and Maintenance Manual.

- C. Refer also to Division 01 and other Specification Sections that define the starting date of the guarantee period, or that discuss either additional warranty requirements, or extended equipment warranties beyond the standard period.

1.12 PROJECT RECORD DOCUMENTS

- A. Contractor shall maintain, at the job site, (1) copy of the following items related to its Trade:
 - 1. Contract Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Reviewed Shop Drawings.
 - 5. Change Orders.
 - 6. Other modifications to Contract.
 - 7. Field Test Records.
 - 8. Minutes of Coordination and Progress Meetings.
 - 9. (1) set of the Contract Drawings that will be used for Record Drawings. This set shall be used exclusively for documenting and recording the exact location of all installed Work.
- B. Do not use record documents for construction purposes.
- C. Store record documents in temporary field office, apart from documents used for construction.
- D. Provide files and racks for storage of record documents.
- E. Maintain record documents in clean, dry, legible condition.
- F. Use red ballpoint pen for all marking of record documents.
- G. Make record documents available at all times for inspection by the A/E and Owner.
- H. Record Drawings:
 - 1. Record Drawings shall be legibly marked to record actual "as-built" construction with the following information:
 - a. Horizontal and vertical location of underground utilities and appurtenances referenced to permanent surface improvements.
 - b. Location of internal utilities and appurtenances concealed in construction referenced to visible and accessible features of structure.
 - c. Field changes of dimension and detail.
 - d. Changes made by Field Work Order or Change Order.
 - e. Details not on the original Contract Drawings.
 - 2. Do not permanently conceal any work until the required information has been recorded. This especially applies to site utilities.
 - 3. Record deviations in locations of concealed conduit and wiring, equipment, and all buried or concealed utility lines and services, etc., dimensioned from a fixed control point, including depth of bury, and as required for further reference.

4. Minor conduit and wiring variations need not be recorded.
5. Record locations of abandoned conduit and wiring, including exterior lines.
6. Record deviations made necessary to incorporate equipment different from the Design Base equipment.
7. Record all Addendum Items.
8. At completion of project, the Contractor shall deliver (1) copy of its Record Drawings to the A/E.
9. Contractor shall accompany its Record Drawings with a transmittal letter, in duplicate, containing the following information:
 - a. Date.
 - b. Project title and number.
 - c. Contractor's name and address.
 - d. Title and number of each record document.
 - e. Certification that each document as submitted is complete and accurate.
 - f. Signature of the Contractor or its Authorized Representative.

1.13 ABBREVIATIONS AND SYMBOLS

- A. Titles and abbreviations may be used in these Specifications. Abbreviations may be shown on the Electrical Drawings. Refer to the list of abbreviations attached to this Section. Refer also to the symbols lists shown on the Drawings for further abbreviations. All titles and abbreviations may not necessarily apply to this Work.

1.14 DEFINITIONS

- A. "Provide": To furnish, install, and connect to make completely ready for regular operation.
- B. "Furnish": To supply or deliver to site complete with all required accessories and installation instructions.
- C. "Install": To mount, erect, hang, or fasten in place, and connect to make ready for regular operation.
- D. "Concealed": Either embedded in masonry or other construction, or installed below floor slab, behind wall furring, within chases or soffits, within walls, within double partitions, above ceilings, in trenches, in tunnels, or within crawl spaces.
- E. "Exposed": In full or partial view; not "Concealed" as defined above.
- F. "Accessible Ceiling": Lay-in ceiling with removable ceiling tiles.
- G. "Low Voltage": Systems or wiring operating at potentials less than 48 volts.
- H. Refer to additional Definitions in Division 01 and in the State Building Codes.

1.15 UTILITIES AND OUTAGES

- A. Closely coordinate any utility service shutdowns or outages, interruptions, or downtime with the A/E, Owner, and Power Company.
- B. Avoid inconveniencing the Owner.
- C. Notify the Owner at least (5) working days in advance of commencing work involving utility service shutdowns or outages, interruptions, or downtime.
- D. Contractor shall alert occupants of nearby premises of any emergency conditions that arise as a result of its work in connection with existing utilities.

PART 2 PRODUCTS

2.01 DESIGN BASE MANUFACTURER STANDARD

- A. The Drawings and Specifications reflect a design based on the specific equipment requirements and configuration for a Design Base Manufacturer. Design coordination of equipment with the building and with other Trades has been made for this specific Model and Manufacturer of equipment. Where several Manufacturers are listed for an item of equipment or material, the first-named shall be considered the Design Base Manufacturer Standard.

2.02 OTHER ACCEPTABLE COMPONENTS (MANUFACTURERS)

- A. Other Manufacturers listed in the Specifications shall be acceptable; however, whenever the Contractor elects to furnish specified equipment or material manufactured by other than the Design Base Manufacturer, the Contractor shall be responsible for the cost and coordination of all modifications required to accommodate the elected equipment or material, including any Work of other Trades that might be affected. Where changes to other Trades' Work are required, the Contractor shall include the additional costs of all such Work in its bid.
- B. Any specified Equipment Manufacturer furnished by the Contractor, other than the Design Base Manufacturer, shall be, in the opinion of the A/E, equivalent in quality, design, features, performance, arrangement, and appearance to that of the Design Base equipment or material, including any special features or requirements.
- C. Where deemed necessary by the A/E, the Contractor shall, at no additional cost to the Owner, prepare layouts for these other brands of equipment that may have different dimensional or service requirements from the Design Base Manufacturer Standard. Submit these layouts to the A/E for review.
- D. Contractor shall reimburse the Owner for the cost of any design changes incurred by the A/E in the preparation of revised Drawings or Specifications to accommodate the use of any Manufacturer other than the Design Base Manufacturer.

- E. The A/E will not give consideration to any other Manufacturer that the Contractor proposes to use, unless the A/E approves the Manufacturer, and specifically names the Manufacturer in the Addenda to the Specifications.

2.03 SUBSTITUTIONS

- A. Contractor shall submit information on any proposed equipment or material that the Contractor desires to use as a Substitution.
- B. Contractor shall be responsible for the same costs of coordination and modifications, etc., listed above in Article 2.02, "Other Acceptable Components (Manufacturers)."
- C. If the A/E determines that the proposed Manufacturer is acceptable, the A/E will issue an Addendum adding that Manufacturer to the Specification.

2.04 EQUIPMENT SUITABILITY

- A. All equipment provided shall perform as intended. All items listed shall function properly, and as the Manufacturer intended. Install equipment according to the Manufacturer's recommendations. Properly attach equipment to the floor, wall, or structure. Each item of equipment shall be compatible with all other accessories or hook-ups, including controls, wiring, and other equipment not furnished by the equipment Manufacturer, but required to achieve the intended function.

2.05 MISCELLANEOUS ACCESSORIES

- A. Provide any additional adapters, fittings, trim, structural steel angles, channels, strut channels, brackets, etc., as necessary to securely install all items of equipment specified or shown on the Drawings. All steel installed outside or exposed to moisture shall be hot-dipped galvanized.
- B. These accessories are required even though they may not be shown or detailed on the Drawings.
- C. Installation shall be compatible with the building construction on which the item is to be located.
- D. Verify the type of construction prior to ordering the equipment item, so that all required accessories are included.

2.06 QUANTITIES

- A. Equipment may be referred to in these Specifications, or on the Drawings, as either singular or plural; the Contractor shall verify the exact number of items required to complete its Work.

2.07 EQUIPMENT PROTECTION

- A. Unless equipment and material can be protectively stored in a manner acceptable to the A/E, they shall not be delivered to the site until the Work is ready to receive them.

- B. Protect all equipment and materials during construction from damage by weather, water, dirt, paint droppings, welding and cutting spatters, and other construction activities.
- C. All materials or equipment stored outside shall be elevated and protectively covered in a secured and locked area.
- D. Store materials and equipment sensitive to weather or construction conditions inside. Where necessary, store sensitive equipment in a heated area.
- E. During construction, cover all equipment and other items that are susceptible to damage until they can be installed in place.
- F. Immediately repair or replace damaged equipment or materials to the satisfaction of the A/E and at no additional cost to the Owner.
- G. Contractor shall protect the building and other Contractors' material and equipment from damage caused by its Work. Protect floors from cutting oil and chips.
- H. Use all means necessary to protect materials before, during, and after installation.
- I. Refer also to individual Specification Sections for specialized protection.

PART 3 EXECUTION

3.01 SAFETY

- A. Maintain Project in accordance with Federal, State, and Local Safety and Insurance Standards. All procedures shall comply with the latest regulations of the Occupational Safety and Health Administration (OSHA).
- B. Contractor shall provide eye and ear protection, as approved by OSHA, for each of its employees.
- C. Contractor shall be solely responsible for construction means, methods, techniques, sequences, procedures, and safety precautions and programs in connection with the Work. The Owner or A/E will not be responsible for the Contractor's failure to employ proper safety procedures.
- D. Contractor shall be solely responsible for the structural design of all temporary items that it uses in the construction of the building, or that become a permanent part of the building, including, but not limited to, hoisting, the temporary bracing for structural steel, and the shoring for concrete and masonry work, cut earth banks, suspended ceilings, equipment, walls, etc.
- E. Exercise precaution for the protection of persons and property. Provide guard rails, barricades, enclosures, canopies, passageways, lanterns, warning lights, and other protective safety devices as necessary or required by the Code Authorities having Jurisdiction, and as required to protect

persons and property against accidentally dropped materials or other construction hazards.

- F. Provide protection as may be required to prevent glass breakage. Replace broken glass at no cost to the Owner.
- G. Electrical Equipment Operation Safety: Make provisions for locking off and tagging out disconnect switches or other power control devices in accordance with the requirements of Federal OSHA Regulations 29 CFR 1910.147 and 2009 NFPA 70E, "Standard for Electrical Safety in the Workplace," Part II, Chapter 5.
- H. Hazards Control:
 - 1. Do not dispose of volatile wastes, such as mineral spirits, oil, or paint thinner, in storm or sanitary drains.
 - 2. Store volatile wastes in covered metal containers, and remove from premises daily.
 - 3. Prevent accumulation of waste that creates hazardous conditions.
 - 4. Provide adequate ventilation during use of volatile or noxious substances.

3.02 CUTTING AND PATCHING

- A. All cutting and patching shall be accomplished in a neat and workmanlike manner, acceptable to the A/E.
- B. Cutting:
 - 1. Contractor shall perform all cutting required for installing its own Work unless otherwise noted.
 - 2. Cutting shall be done with such tools and methods so as to prevent unnecessary damage to surrounding areas and equipment.
 - 3. Use rotary drills where the cutting of holes through concrete, brick, plaster, or tile is necessary.
 - 4. No cutting shall be done that will, in any way, reduce the structural strength of the building. Cutting of structural support beams, joists, plates, or other structural members is strictly prohibited without the specific written consent of the A/E. Should such cutting be necessary, consult the A/E and do not proceed further without written approval of the A/E.
- C. Patching:
 - 1. Contractor shall be responsible for patching except as otherwise noted.
 - 2. Only a qualified Finish Tradesman, skilled in the respective craft required, shall perform patching.
 - 3. Patching shall match adjacent surface construction.
 - 4. Materials and equipment used in the patching work shall comply with requirements of other Sections of this Specification.
- D. All cutting and patching shall be done promptly, and all repairs shall be made as necessary to leave the entire Work in good condition, including all cutting, fitting, and drilling of masonry, concrete, metal, wood, plaster, and

other materials as specified or required for proper assembly, fabrication, installation, and completion of the Work.

- E. Coordinate drilling, welding, etc., and method of attachment to columns, joists, beams, etc., with the General Trades Contractor before proceeding.
- F. Roofing:
 - 1. General Trades Contractor shall be responsible for all cutting of roofing, modification, roof opening framing, or repair work.
- G. General Trades Contractor, or other Tradesman approved by the A/E, shall replace floors, ceilings, roofs, etc., damaged during construction. The cost of repairs shall be borne by the Contractor causing damage.
- H. Contractor shall be responsible for construction that is disturbed during the installation of conduit or equipment.
- I. Contractor shall repair or replace any roads, sidewalks, or other items that its employees may damage during the performance of this Work.
- J. Cutting and Patching of Existing Work: Remodeling, modifying, patching, and repair of the existing building shall be done so as to match the existing conditions. Complete all work necessary to achieve this requirement. Quality of workmanship, materials, and finish shall complement appearance of existing construction.

3.03 CLEANING

- A. Maintain all work areas in a neat and orderly manner, free of debris. Clean up all occupied travel areas at the end of each shift, or immediately after use for material removed.
- B. Contractor shall do its own cleanup, shall move materials that are in the way of constructing its work, shall repair and replace any damage it does, and shall do any other work of a similar nature which must be done.
- C. Equipment cleaning and touch-up:
 - 1. Use only cleaning materials recommended by Manufacturer of the surface to be cleaned.
 - 2. Clean interiors of all enclosures of dirt and debris before installing trim or covers.
 - 3. Brush-clean, prime, and paint-in-kind rust spots on any part.
- D. Final cleaning:
 - 1. Repair, patch, and touch up all scratched or damaged surfaces to specified finish to match adjacent surfaces, before final acceptance of the work. Repair dents and marred finishes to the satisfaction of the A/E. Prepare for finish painting, where painting is specified.
 - 2. Thoroughly clean all fixtures, material, finished surfaces of equipment, painted, enameled, or varnished work, and all other exposed finished surfaces, removing all labels, stickers, marks, stains, fingerprints, spots, rust, oil, grease, dirt, dust, and other foreign materials, so that

the Work is presented in a complete and finished condition, ready for acceptance and intended use.

3. Employ experienced workers, or professional cleaners, for final cleaning.
4. Expedite the cleaning, washing, waxing, and polishing required within other Sections of these Specifications.

3.04 TESTS AND INSPECTIONS

- A. The Contract Documents, Laws, Ordinances, Rules, Regulations, or Orders of any Code Authority having Jurisdiction may require the Work to be inspected, tested, or approved.
- B. Arrange for inspection of the Work by the Code Authority having Jurisdiction. Inspections shall be conducted by the State of Ohio, Department of Commerce, Division of Industrial Compliance and Labor, Bureau of Building Code Compliance.
- C. Notify the A/E of all scheduled tests and adjustments at least (48) hours before they are scheduled, so that the A/E may witness same. If the Contractor performs any test or adjustment without the A/E present, or without proper notification, the Contractor shall perform the test or adjustment a second time, in the presence of the A/E. Coordinate all test schedules with the Owner to minimize inconvenience.
- D. Provide all required testing and obtain approvals. Secure required certificates of inspection, testing, or approval, and include them in the Operating and Maintenance manuals.
- E. Contractor shall bear all costs of such inspections, tests, or approvals.
- F. Should any of the Work be covered up or enclosed prior to completion of all required inspections and approvals, uncover the Work as required and, after it has been completely inspected and approved, make all repairs and replacements with such materials and workmanship as are necessary to secure the approval of the A/E, and at no additional cost to the Owner.
- G. Furnish all meters, equipment, and personnel required, and test as necessary, to demonstrate the integrity of the finished installation to the approval of the Code Authority having Jurisdiction and the A/E.
- H. Check each piece of equipment for defects and verify that all parts are properly furnished and installed, that all items function properly, and that all adjustments have been made.
- I. Refer to Section 26 05 93, "Testing, Adjusting, and Balancing for Electrical," for additional requirements.

TITLES, ABBREVIATIONS, AND SYMBOLS

&	And	C/L	Center line
@	At	CAB.	Cabinet
∠	Angle	CAP.	Capacity
∅	Diameter	CEIL./CLG.	Ceiling
#	Number	CFC	Chlorofluorocarbon
∅	Round OR Phase	CFH	Cubic feet per hour
A.	Compressed air	CFM	Cubic feet per minute
A.D.	Access door OR Area drain	CFR	Code of Federal Regulations
A.F.D.	Acid floor drain	CGA	Compressed Gas Association
A.F.F.	Above finished floor	CHEM.	Chemical
A.P.	Access panel	CISPI	Cast Iron Soil Pipe Institute
A.W.C.O.	Acid wall cleanout	COL.	Column
AABC	Associated Air Balance Council	COMB.	Combination
AB.	Above	CONC.	Concrete
ACI	American Concrete Institute	COND.	Condensate OR Condenser
ACPA	American Concrete Pipe Association	CONN.	Connection OR Connect
ADA-AG	Americans with Disabilities Act — Accessibility Guidelines	CONST.	Construction
ADC	Air Diffusion Council	CONTR.	Contractor
AFCI	Arc-fault circuit interrupter	CONV.	Convector OR Converter
AH	Air handler	COORD.	Coordinate
AHRI	Air-Conditioning, Heating, and Refrigeration Institute	CSA	Canadian Standards Association
ALT.	Alternate	CSI	Construction Specifications Institute
ALUM.	Aluminum	CT	Current transformer
AMCA	Air Movement and Control Association	CU. FT.	Cubic feet
amp	ampere	CU IN.	Cubic inch
ANSI	American National Standards Institute	CUH	Cabinet unit heater
APPROX.	Approximately	D.	Deep
ARCH.	Architect	D.F.	Drinking fountain
ARR'T.	Arrangement	D.L.	Door louver
ASA	Acoustical Society of America	D.M.	Damper motor
ASHRAE	American Society of Heating, Refrigerating, and Air Conditioning Engineers	D.S.	Downspout
ASME	American Society of Mechanical Engineers	DB	Dry bulb
ASPE	American Society of Plumbing Engineers	DBL.	Double
ASSE	American Society of Sanitary Engineering	DCW	Domestic cold water
ASTM	American Society for Testing & Materials	DET.	Detail
AUTO.	Automatic	DHW	Domestic hot water
AV	Acid vent	DHW R	Domestic hot water return
AW	Acid waste	DIA. / ∅	Diameter
AWG	American wire gauge	DIFF.	Diffuser
AWS	American Welding Society	DIM.	Dimension
AWWA	American Water Works Association	DISCH.	Discharge
B.D.D.	Backdraft damper	DN.	Down
B.T.	Bathtub	DOE	United States Department of Energy
B.V.	Backwater valve	DPR.	Damper
BAL.	Balancing	DR.	Door
BFP	Backflow preventer	DW	Distilled water
BHP	Brake horsepower	DWG.	Drawing
BICSI	Building Industry Consulting Services International	DWH	Domestic water heater
BLDG.	Building	DWV	Drain, waste and vent
BSBD.RAD.	Baseboard radiation	E.A.T.	Entering air temperature
BSMT.	Basement	E.C.	Electrical Contractor
BTM.	Bottom	E.S.P.	External static pressure
BTU	British thermal unit	E.T.	Expansion tank
c.	Conduit	E.W.T.	Entering water temperature
C.B.	Catch basin	EA.	Each
C.I.	Cast iron	EFF.	Efficiency
C.O.	Clean out	EIA	Electronic Industries Alliance
C/C	Center to center	ELEC.	Electric OR Electrical
		ELEM.	Element
		ELEV.	Elevation
		ENGR.	Engineer
		ENT.	Entering
		EPA	Environmental Protection Agency

EQUIP.	Equipment
ETL	Electrical Testing Laboratories
EW	Eye wash
EWC	Electric water cooler
EXH.	Exhaust
EXIST.	Existing
EXT.	Exterior
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F & T	Float and thermostatic
F.	Fan OR Fire
F.D.	Fire damper
F.E.	Fire extinguisher
F.E.C.	Fire extinguisher cabinet OR Food Service Equipment Contractor
F.H.	Fire hydrant
F.H.C.	Fire hose cabinet
F.H.E.C.	Fire hose/extinguisher cabinet
F.V.	Flush valve
FCC	Federal Communications Commission
FD	Floor drain
FDA	Food and Drug Administration
FHA	Federal Housing Administration
FIG.	Figure
FIN.	Finish
FIN.RAD.	Finned radiation
FLEX.	Flexible
FLR. / FL.	Floor
FMG	Factory Mutual Global
FOR	Fuel oil return
FOS	Fuel oil supply
FPC / FSC	Fire Protection / Fire Suppression Contractor
FPM	Feet per minute
FT.	Feet
FT.HD.	Feet of head
FURN.	Furnish(ed)
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G	Gas
G.C.	General Contractor
G.I.	Grease interceptor
G.T.C.	General Trades Contractor
gal.	Gallon
GALV.	Galvanized
GEN.	General
GFI	Ground fault interrupter
GPM	Gallons per minute
GR	Grille
Grd.	Ground
GRAV.	Gravity
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H./HT.	Height
H.P.	High pressure
H.S.	Hair strainer
H'STAT	Humidistat
HAC	Heating and air conditioning
HB	Hose bibb
HCFC	Hydrochlorofluorocarbon
HHS	United States Department of Health and Human Services
HORIZ.	Horizontal
HP	Horsepower
HPC	High pressure steam condensate
HPS	High pressure steam
hr.	Hour
HTG.	Heating
HTR.	Heater
HUD	United States Department of Housing and Urban Development
HV	Heating and ventilating OR High velocity
HVAC	Heating, ventilating, and air conditioning
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I.D.	Inside diameter
IAQ	Indoor air quality

ICC	International Code Council
ICEA	Insulated Cable Engineers Association, Inc.
IDF	Intermediate distribution frame
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronics Engineers, Inc.
IESNA	Illuminating Engineering Society of North America
IN.	Inside OR Inches
IND.	Indirect
IND. U.	Induction unit
INSUL.	Insulation
INT.	Interior
INV.	Invert
INV. ELEV.	Invert elevation
IPS	Iron pipe size
ISO	International Organization for Standardization
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J.R.	Janitor's receptor
JCAH	Joint Commission for Accreditation of Hospitals
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kVA	Kilovolt-ampere
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L.	Length
L.A.T.	Leaving air temperature
L.W.T.	Leaving water temperature
LAB	Laboratory
LAV	Lavatory
lb.	pound
LEED	Leadership in Energy and Environmental Design
LH	Left hand
LP	Liquefied petroleum
LPC	Low pressure steam condensate
LPS	Low pressure steam
LV'G.	Leaving
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M.A.	Mixed air
M.O.	Motor operated
MAN. DPR.	Manual damper
MAT.	Material
MAX.	Maximum
MBH	1,000 British thermal units/hour
MECH.	Mechanical
MET./MTL.	Metal
MEZZ.	Mezzanine
MFR.	Manufacturer
MH	Manhole
MIN.	Minimum
MISC.	Miscellaneous
MPS	Medium pressure steam
MS	Motor starter
MSS	Manufacturers Standardization Society of the Valve and Fittings Industry Inc.
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MTD./MT.	Mounted OR Mount
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N.I.C.	Not in contract
N.T.S.	Not to scale
N2	Nitrogen
N2O	Nitrous oxide
NADCA	National Air Duct Cleaners Association
NAECA	National Appliance Energy Conservation Act
NB	National Board of Boiler and Pressure Vessel Inspectors
NCPI	National Clay Pipe Institute
NEBB	National Environmental Balancing Bureau
NEC	National Electrical Code
NEMA	National Electrical Manufacturers Association
NESHAPs	National Emissions Standards for Hazardous Air Pollutants
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety and Health

NIST	National Institute of Standards and Technology	S.A.	Shock absorber OR Supply air
NO. OR #	Number	S.F.	Square feet
NOM.	Nominal	S.M., S/M	Sheet metal
NP	Not permitted	S.P.	Static pressure
NPT	National Pipe Thread Tapered	S.S.	Service sink OR Storm sewer
NSF	National Sanitation Foundation	S.S., S/S	Stainless steel
NSPE	National Society of Professional Engineers	SAN.	Sanitary sewer
O.	Oxygen	SB	Shampoo bowl
O.A.	Outside air	SD	Shower drain OR Smoke detector
O.D.	Outside diameter	SECT.	Section
O.I.	Oil interceptor	SHR.	Shower
O.V.	Outlet velocity	SHT.	Sheet
O/C	On center	SHT. MT'L.	Sheet metal
OAC	Ohio Administrative Code	SMACNA	Sheet Metal and Air Conditioning Contractors National Association
ODH	Ohio Department of Health	SPEC.	Specification
ODMHAS	Ohio Department of Mental Health and Addiction Services	SQ.	Square
ODDD	Ohio Department of Developmental Disabilities	SQ. FT.	Square feet
ODOE	Ohio Department of Energy	SQ. IN.	Square inch
ODOT	Ohio Department of Transportation	ST	Sound trap
ODRC	Ohio Department of Rehabilitation and Correction	STAT	Thermostat
ODYS	Ohio Department of Youth Services	STD.	Standard
OPG.	Opening	STL.	Steel
OPP.	Opposite	STM.	Storm
ORC	Ohio Revised Code	SUCT./S	Suction
OSHA	Occupational Safety and Health Administration	SW	Softened water
OU./OZ.	Ounce	SW.	Switch
P.D.	Pressure drop	T.W.	Tempered water
P.I.V.	Post indicator valve	T'STAT	Thermostat
P/L	Property line	TD	Temperature difference
PDI	Plumbing & Drainage Institute	TEMP.	Temperature
PEI	Petroleum Equipment Institute	THERM.	Thermometer OR Thermostat
PLBG.	Plumbing	TIA	Telecommunications Industry Association
PNEU.	Pneumatic	TYP.	Typical
PRESS.	Pressure	UC	Undercut
PROP.	Propeller	UH	Unit heater
PRV	Pressure-reducing valve	UL	Underwriters Laboratories, Inc.
PSF	Pounds per square foot	UR	Urinal
PSI	Pound-force per square inch	USGBC	United States Green Building Council
PSIG	Pound-force per square inch gauge	UV	Unit ventilator
PT	Plaster trap OR Potential transformer	V.	Vent
PVC	Polyvinyl chloride	V.T.R.	Vent through roof
R	Register	VAC.	Vacuum
R.A.	Return air	VC	Vacuum cleaning
R.D.	Roof drain	VCP	Vitrified clay pipe
R/W	Right of way	VERT.	Vertical
RAD.	Radius OR Radiation OR Radiator	VIB. ISO.	Vibration isolator
RECIRC.	Recirculating	VOC	Volatile organic compound
REG.	Register	VSP	Vitrified sewer pipe
REINF.	Reinforced	W.	Width OR Water
REL.	Relief	W.G.	Water gauge
REQ'D.	Required	W/	With
RH	Right hand	W/O	Without
RHC	Reheat coil	WWW	Wall to wall
RM.	Room	WAT.	Water
RPM	Revolutions per minute	WB	Wet bulb
RTA/C	Rooftop air-conditioning unit	WC	Water closet OR Water column
RW	Raw water	WH	Wall hydrant OR Water heater
RWC	Rainwater conductor	WO	Waste oil
S	Sink	WOG	Water/oil/gas
S & R	Supply and return	XFMR	Transformer
S. DPR.	Smoke damper	YD.	Yard
		YH	Yard hydrant

END OF SECTION 26 05 00

SECTION 26 05 06
ELECTRICAL SUBMITTALS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Section 01 33 00, "Submittal Procedures."

1.02 DESCRIPTION

- A. Materials and equipment installed under the Electrical Contract shall meet all the requirements of the Contract Documents. Do not order or install materials or equipment until submittals are reviewed by the Architect/Engineer (A/E).
- B. Refer to the list at the end of this Section and to the Sections listed in Section 26 05 00, "Common Work Results for Electrical," Article 1.01, for the items that the Contractor shall submit.
- C. Submit complete copies of the catalog data or shop drawings for each manufactured item of equipment and all components to be used in the Work, including the following:
1. Brand name.
 2. Catalog number.
 3. Specific performance data.
 4. Material description.
 5. Rating.
 6. Capacity.
 7. Dimensional data.
 8. Material gauge or thickness.
 9. Wiring diagrams.
- D. Manufacturer's Catalog Sheets, Brochures, Diagrams, Schedules, Performance Charts, Illustrations, and Other Standard Descriptive Product Data: Contractor shall:
1. Clearly mark or highlight each copy to identify pertinent materials, products, or models.
 2. Show dimensions and clearances required.
 3. Show performance and characteristics and capacities.
 4. Show wiring diagrams and controls.
- E. Catalog data for equipment reviewed by the A/E shall not take precedence over the requirements of the Contract Documents. Review by the A/E shall not relieve the Contractor from the responsibility for deviations from Drawings or Specifications, nor from the responsibility for providing proper clearance and coordination with other Contractors.

- F. When submitted for review, all shop drawings shall bear the Contractor's signed certification of the following:
 - 1. Contractor has reviewed, checked, and approved the shop drawings.
 - 2. Shop drawings have been coordinated with the requirements of the Project and with the provisions of the Contract Documents.
 - 3. Contractor has verified all field measurements and construction criteria, materials, catalog numbers, and similar data.
- G. The A/E's review is **ONLY** for conformance with the design concept of the Project and with the Contract Documents. Contractor shall be solely responsible for construction means, methods, techniques, sequences, procedures, and safety precautions and programs in connection with the Work.

1.03 SHOP DRAWINGS

- A. Indicate arrangement of component parts, physical dimensions, materials, electrical and mechanical service requirements, colors (where required), controls, accessories, capacities, and performance characteristics.
- B. Prior to submitting shop drawings, the Contractor shall stamp and sign its certification that the equipment shown on the submittals meets all the requirements of the Contract Documents. **UNSIGNED COPIES WILL NOT BE REVIEWED.**
- C. NOTE: At the Contractor's option, shop drawings may be submitted electronically in Portable Document Format (PDF). Contractor shall be responsible for making all copies for distribution and file.

1.04 CONTRACTOR RESPONSIBILITIES

- A. Completely review Shop Drawings, product data, and samples prior to submission.
- B. Determine and verify the following:
 - 1. Field measurements.
 - 2. Field construction criteria.
 - 3. Catalog numbers and similar data.
 - 4. Conformance with Specifications.
 - 5. Quantities and sizes.
- C. Coordinate each submittal with requirements of the Work and the Contract Documents.
- D. Notify the A/E, in writing, at time of submission, of any deviations in the submittals from the requirements of the Contract Documents.
- E. Contractor shall make submittals promptly in accordance with the approved schedule, and in such sequence as to cause no delay either in its Work or in the work of any other Contractor.
- F. Immediately make any corrections or changes in rejected submittals as required by the A/E and resubmit until accepted.

- G. If the Contractor orders equipment or materials, or begins installation, fabrication, or work prior to return of approved submittals, it shall be "at the Contractor's own risk."
- H. When (2) or more items of the same material or equipment are required, they shall be of the same Manufacturer.
- I. Incorporate Shop Drawings into the Operating and Maintenance Manuals.

1.05 CERTIFICATIONS

- A. Provide:
 - 1. Test Agency results verifying capacities, operating conditions, and power requirements at design conditions.
 - 2. Manufacturer's statement of compliance with Standards discussed in individual Specification Sections.
 - 3. Equipment labels indicating Certification requirements.
 - 4. Quality standard designations on each unit piece, e.g., each device, fixture, or component.
 - 5. Typed verification that noted testing procedures were complied with.
 - 6. Other Certifications listed in other Sections of the Specifications.

1.06 REQUIRED SUBMITTAL INFORMATION

- A. The items listed below may not be a complete list of required submittals. Submit for approval all items to be provided, whether listed or not.

KEY FOR REQUIRED SUBMITTALS

- A Catalog Cuts/Shop Drawings.
- B Operating and Maintenance Manuals.
- C Color samples.
- D Product samples.
- E Typed statement of material to be furnished.
- F Typed verification of compliance with certification requirements.
- G Test.
- H Coordination Drawings / Studies.

(Submit number of copies indicated in Section 01 33 00.)

ELECTRICAL SUBMITTALS REQUIRED	KEY
Lightning Protection System Drawings.....	A
Lightning Protection System Components	A
Operating and Maintenance Manuals (Refer to Section 26 05 07).....	B

END OF SECTION 26 05 06

SECTION 26 05 07

ELECTRICAL OPERATING AND MAINTENANCE MANUALS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Section 26 05 60, "Requirements for Completion of Electrical Work."

1.02 DESCRIPTION

- A. Compile Operating and Maintenance Manual upon completion of the Work, and as required for final acceptance. Submit draft of Operating and Maintenance Manual to the Architect/Engineer (A/E) for review and approval (30) days before Contract Completion.
- B. Submit final corrected Operating and Maintenance Manual (7) days before Contract Completion.
- C. Upon approval, provide (3) Operating and Maintenance Manual(s) in the physical format described in Article 2.01 A. 1. below, as well as (1) compact disk (CD) containing a Portable Document Format (PDF) file of the manual.

PART 2 PRODUCTS

2.01 OPERATING AND MAINTENANCE MANUALS

- A. The following items, together with any other pertinent data, shall be included in each Operating and Maintenance Manual. This list is not necessarily complete and shall be used only as a guide. Format of manual to be as follows:
 - 1. Operating and Maintenance Manuals shall be loose-leaf, 3-ring, hardcover binders, no larger than 11 in. wide x 12 in. high. Material shall be typewritten or printed, and be fully legible. Each section shall be divided by labeled tabs.
 - 2. Cover:
 - a. Title of Project.
 - b. Date of Project completion.
 - c. Name and address of the Owner.
 - d. Date of submittal.
 - e. Name and address of the Contractor.
 - f. Name and address of the Architect.
 - g. Name and address of the Engineer.
 - 3. Second Page: Index.
 - 4. First Section: A copy of each shop drawing and approved submittal with an index at the beginning of the section.
 - 5. Second Section:
 - a. A list of all equipment used on the job.

- b. Parts list with numbers of replaceable items, including sources of supply.
 - c. Manufacturers' and nearest Factory Representatives' names, addresses, telephone numbers, and e-mail addresses.
 - d. Model and Serial numbers of components of systems installed.
 - e. Routine and 24-hour emergency service/repair information:
 - 1) Name, address, telephone number, and e-mail address of servicing agency.
 - 2) Names of personnel to be contacted for service arrangements.
6. Third Section:
- a. Description of systems.
 - b. Manufacturer's literature describing each piece of equipment, including the following:
 - 1) Operating and maintenance instructions.
 - 2) Routine and emergency servicing instructions.
 - c. Copies of all testing reports.
 - d. Prints of all system wiring diagrams.
 - e. All certifications and related information.
 - f. Copies of all written warranties.
 - g. The Owner's statement of completion of instruction. Refer to Section 26 05 60.

END OF SECTION 26 05 07

SECTION 26 05 26

GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Section 26 41 13, "Lightning Protection for Structures."

1.02 DESCRIPTION

- A. Bond the lightning protection system to the main electrical service ground bus.
- B. Ground the following items:
 - 1. Raceways.
 - 2. Exposed metallic projections, including the items listed below. Coordinate with Section 26 41 13.
 - a. Railings, ladders and other metal structures, and equipment attached to the building.
 - b. Rooftop HVAC equipment.
- C. For additional grounding work, refer to Section 26 41 13.

1.03 QUALITY ASSURANCE

- A. Standards:
 - 1. National Fire Protection Association (NFPA): 2014 NFPA 70, "National Electrical Code® (NEC)," Article 250.
 - 2. Underwriters Laboratories, Inc. (UL).

1.04 GROUNDING CONNECTORS

- A. Bond conduits entering a switchboard, panelboard, or similar enclosure requiring a ground bond, with the use of O-Z Gedney Type "BLG" bonding bushings and the same size conductor as the equipment grounding conductor.
- B. Make all other connections to pipes or conduits by the use of one of the following clamps:
 - 1. Burndy "GAR" Type.
 - 2. Penn-Union "GPL" Type.
 - 3. O-Z Gedney "ABG" or "CG" Type.
 - 4. Anderson GC-111 Type.

1.05 CONDUIT AND RACEWAY SYSTEM GROUNDING

- A. The entire metallic conduit system shall be electrically continuous with locknuts cutting through paint on enclosures. Bonding bushings shall be required where reducing washers are used and where concentric or eccentric knockouts are not completely removed.

1.06 EQUIPMENT GROUNDING CONDUCTOR

- A. Include an equipment grounding conductor (green ground wire) with all circuit conductors over 100 volts. Size in accordance with 2014 NEC Table 250.122.

1.07 WIRED GROUND CONNECTIONS

- A. Because the conduit system can provide a lower impedance path than the wired equipment grounding system, the wired equipment grounding system shall connect to the metallic conduit ground system in **EVERY** accessible panel, junction box, pullbox, and other metallic enclosures, as specified below.
- B. In any enclosure that has a grounding assembly, connect all ground wires to the assembly. Provide connection lugs or terminals for the ultimate number of wires to be connected to the assembly. Use a separate connection for each wire.
- C. In any enclosure that does not require a ground assembly, connect together all ground conductors entering the enclosure. Bond a pigtail the size of the largest conductor to the enclosure with an attachment used for no other purpose.
- D. Bond junction and pullboxes by the use of UL-listed grounding screws or lugs. If there are more than (4) ground wires entering a box, bond a listed ground assembly securely to the enclosure.
 - 1. **NOTE:** 2014 NEC requires that an equipment grounding conductor passing through any accessible location be bonded to that enclosure. Do **NOT** use self-tapping sheet-metal screws.
- E. Remove paint and any other foreign material from ground connections so that the connection is metal-to-metal.

END OF SECTION 26 05 26

SECTION 26 05 60

REQUIREMENTS FOR COMPLETION OF ELECTRICAL WORK

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Section 26 05 00, "Common Work Results for Electrical."
- B. Section 26 05 06, "Electrical Submittals."
- C. Section 26 05 07, "Electrical Operating and Maintenance Manuals."

1.02 DESCRIPTION

- A. Complete and submit the following list, which is a partial list of the items required prior to Contract Completion:
 - 1. Submittals. Refer to Section 26 05 06.
 - 2. Operational tests, adjustments, and inspections of all equipment and systems, as required in this, as well as other, Sections. Refer to Section 26 05 93.
 - 3. All required certifications, labels, and Underwriters Laboratories, Inc., certificates, as required.
 - 4. Protection and cleaning. Refer to Section 26 05 00.
 - 5. Operating and Maintenance Manuals. Refer to Section 26 05 07.
 - 6. Record Drawings. Refer to Section 26 05 00.
 - 7. Equipment warranties.
 - 8. Guarantee. Refer to Section 26 05 00.
- B. Provide or perform all of the above items before Contract Completion.

PART 2 PRODUCTS — NOT APPLICABLE

PART 3 EXECUTION

3.01 FINAL OPERATING TESTS AND PROCEDURES

- A. Prior to Contract completion, conduct system operational tests for a period of at least (5) days, not necessarily consecutive, as scheduled by the Owner, to demonstrate fulfillment of the requirements of the Contract. During this time, adjust equipment so that it will perform as the Manufacturer intended and so that systems will function as designed.
- B. Operate each system in every mode of operation, and check the position of switches and other devices for proper closure, operation, and switching.
- C. Refer to Section 26 05 93 for additional information.

END OF SECTION 26 05 60

SECTION 26 41 13

LIGHTNING PROTECTION FOR STRUCTURES

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Section 26 05 26, "Grounding and Bonding for Electrical Systems."

1.02 SCOPE

- A. Remove and replace existing lightning protection system.
- B. Provide all items of equipment necessary for, and incidental to, a complete new UL Class I (less than 75 ft.) Master Label Lightning Protection System.
- C. Provide parapet-mounted and roof-mounted air terminals 20 ft. on center, roof perimeter cable, and tap conductors. Connect to existing building steel. Reuse existing through-roof assemblies and associated connectors.
- D. General Trades Contractor shall provide new roof pitch pockets, if required.
- E. Bond to metal objects within 6 ft. of conductor if not inherently connected.
- F. Bond lightning protection ground system to electrical service ground with full-size conductor.
- G. Terminals, conductors, etc., shall be suitable for building construction.

1.03 QUALITY ASSURANCE

- A. Complete system shall comply with the following:
 - 1. National Fire Protection Association (NFPA):
 - a. 2014 NFPA 70, "National Electrical Code® (NEC)," Article 250.
 - b. 2008 NFPA 780, "Standard for the Installation of Lightning Protection Systems."
 - 2. Underwriters Laboratories, Inc., (UL) UL96A requirements for a Master Label System.
 - 3. Lightning Protection Institute.
- B. Materials and fittings shall be of type, weight, and construction as listed and labeled by UL.
- C. Lightning Protection Contractor:
 - 1. Shall have minimum of (10) years of experience in this type of work.
 - 2. Shall be a member in good standing with UL.
 - 3. Shall possess a UL Listing Number.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Air Terminals:

1. Steel: Cat. No. AT12CB solid copper, 3/8 in. x 12 in. long, drawn to a blunt point.
 2. Coordinate length and mounting with roof construction. Furnish mechanical attachments for terminals on roof construction.
- B. Anchors, Fasteners, and Connectors: Heavy hard copper or bronze, of bolt connection type best suited for connection to surface where used. Do **NOT** use pinch type.
- C. Conductors, Steel:
1. Roof conductors: #29 Class I copper lightning conductor, 29 strands of #17 AWG copper wire.
 2. Bonding conductors: #14, 14 strands of #17 AWG copper wire.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Use cables and terminals that are compatible with the roof and building materials and finish to prevent galvanic action between dissimilar metals.
- B. Run cables as inconspicuously as possible.
- C. Interconnect cables on roofs so as to divide the roof surfaces into rectangles not exceeding 50 ft. in length. Roof cables shall have air terminals at each point of intersection.
- D. Cables shall be protected by stiff copper or brass tubing encasing cables where exposed within buildings and where exposed to injury. Solder cables to ends of protector tubing.
- E. Make connections between connecting cables, and between cables and grounds, by unraveling 6 in. or more of each cable and making wrapped (Western Union) splice, or with malleable bronze bolted couplings of proper size. Cad-weld all connections to ground system. Do not cover any connections to ground system before receiving approval from the Architect/Engineer (A/E).
- F. Bond all exposed metal on roof, such as antennas, exhaust fans, lighting fixture brackets, ladders, roof hatches, roof ventilators, satellite dish, rooftop HVAC units, and similar construction to lightning protection system.
- G. Air Terminals:
1. Terminals shall project a minimum of 10 in. above the object protected.
 2. Locate terminals at intervals not exceeding 20 ft.-0 in. along ridges and around perimeter of flat, or gently sloping, roofs. Provide flat or gently sloping roofs exceeding 50 ft.-0 in. in width with additional terminals at intervals not exceeding 50 ft.-0 in. on the flat or gently sloping area.
 3. Locate terminals within 24 in. of the roof edge and outside corners of the protected area.
 4. Provide terminals for metal stacks, flues, and mechanical equipment having a metal thickness of less than 3/16 in., which are not within a

zone of protection of a terminal. Bond equipment with metal thickness 3/16 in. or greater.

5. Securely fasten terminals to roof or structure with mechanical fasteners only. Use fasteners as required for roof construction.
6. General Trades Contractor shall provide new pitch pockets to maintain roof warranty, if required.
7. Lightning Protection Contractor shall coordinate size and location of pitch pockets with the General Trades Contractor.

END OF SECTION 26 41 13