



Dennis Levinson  
County Executive

Bidder's Name: \_\_\_\_\_  
(PRINTED)

Address \_\_\_\_\_  
(STREET)

Address \_\_\_\_\_  
(STREET)

Address \_\_\_\_\_  
(CITY, STATE, ZIP CODE)

# County of Atlantic

## Department of Facilities Management

### BID # 201959.1

#### INVITATION TO BID

Sealed bids will be received by the Purchasing Agent of the County of Atlantic, New Jersey, in the Conference Center, 3<sup>rd</sup> floor, 1333 Atlantic Avenue, Atlantic City, NJ 08401, at the time and date as specified below, at which time and place the bids shall be publicly opened and read aloud for the following:

#### **RENOVATIONS TO LAKE LENAPE PARK EAST CATERING HALL DECK (Bid Bond and Consent of Surety Required)**

To be performed in accordance with all of the terms, conditions, specifications and requirements set forth herein.

**All bids shall be delivered on or before OCTOBER 10, 2019  
and not later than 11:00 AM E.D.T. to:**

**Atlantic County Office of Budget and Purchasing  
Attn: Ms. Palma Conover, Director  
1333 Atlantic Avenue, 6<sup>th</sup> Floor  
Atlantic City, New Jersey 08401**

**NOTICE: PERFORMANCE OF THIS CONTRACT SHALL BE SUBJECT TO ALL OF THE TERMS, CONDITIONS AND REQUIREMENTS SET FORTH HEREIN**

ANY QUESTIONS PERTAINING TO THE ATTACHED INSTRUCTIONS TO BIDDERS AND SPECIFICATIONS MUST BE DIRECTED TO THE OFFICE OF BUDGET & PURCHASING, TELEPHONE (609) 343-2268 OR FAX (609)343-2193.

## NOTICE TO BIDDERS

Public Notice is hereby given that **SEALED BIDS** will be received by the Purchasing Agent of the County of Atlantic, New Jersey at 11:00am prevailing time on **OCTOBER 10, 2019** the Conference Center; 3rd Floor; 1333 Atlantic Avenue; Atlantic City, NJ  
for:

### **BID 201959.1 RENOVATIONS TO LAKE LENAPE PARK EAST CATERING HALL DECK (Bid Bond and Consent of Surety Required)**

A PRE-BID CONFERENCE SHALL BE HELD ON **OCTOBER 3, 2019 AT 3:00 PM** AT THE LAKE LENAPE PARK EAST CATERING HALL, 753 PARK ROAD, MAYS LANDING, NJ 08330

A site visit will follow

**It is highly recommended that all interested parties attend this pre-bid meeting.** Atlantic County will not be held responsible for vendors not receiving general information due to their not attending any pre-bid meetings

PROSPECTIVE BIDDERS SHALL ENSURE THAT ANY QUESTIONS THEY HAVE CONCERNING THIS PROJECT BE BROUGHT UP AT THE PRE-BID CONFERENCE. QUESTIONS PERTAINING TO THE PLANS OR SPECIFICATIONS ASKED AFTER THE PRE-BID MAY OR MAY NOT BE ADDRESSED DEPENDING ON AVAILABLE TIME.

Specifications and blank bid forms may be obtained online at the following web address  
[www.atlanticcountybids.org](http://www.atlanticcountybids.org)

All questions concerning this specification must be directed to the Office of Budget & Purchasing, by faxing (609) 343-2193 or emailing [Purchasing@aclink.org](mailto:Purchasing@aclink.org)

Bidders are required to comply with requirements of NJSA 10:5-31 et seq. and N.J.A.C. 17:27

Every bidder must abide by the New Jersey Prevailing Wage Act, P.L. 1963, Chapter 150.

The County of Atlantic reserves the right to reject any or all bids

By order of the County Executive of the County of Atlantic

Palma Conover, Director  
Division of Budget & Purchasing  
County of Atlantic, New Jersey

**COUNTY OF ATLANTIC**  
**PROJECT SUMMARY: SCOPE OF WORK**

**PROJECT SUMMARY**

A. Demolition:

Includes, but is not limited to, the removal of the deck ceiling, partial removal of the drywall ceiling in the basement under deck, the opening of holes/partial removal of interior deck walls to insulate the exterior walls, the removal of the exterior door, and modification of existing door opening.

B. New Work

Includes, but it not limited to, the installation of spray foam insulation in between the deck roof rafters, the installation of new cement board deck ceiling to match existing; the installation of blow-in insulation in the exterior walls, the installation of blow-in insulation in the basement ceiling under deck, the painting of the basement drywall ceiling below the deck; the installation of cement board trim, the installation of a single hollow metal exterior door in new door opening, the installation of a new deck coating system, installation of scupper swing gates, installation of vinyl sheet windows, installation of one outdoor heat pump & four indoor mini-split air conditioned & heat pump units, the installation of an elevated concrete platform, the installation of ceiling fans with lights, miscellaneous mechanical and electrical work.

**PROJECT SCHEDULE**

This construction project MUST be completed and closed out within one-hundred & five (105) consecutive calendar days (CCD) after project start date:

(A) Substantial Completion shall occur no later than fifty (50) CCD from project start date.

(B) Final Completion and Close-Out shall occur no later than twenty-five (25) CCD after Substantial Completion

(c.) The County will be allowed an thirty day (30) CCD after the Final Completion date for County administrative purposes only, i.e. processing documents, etc., for final contract payment.

The County will apply liquidated damages of \$500.00 (five-hundred dollars) per CCD until missed milestone(s) are met, **including but not limited to administrative requirements.**

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Note: All vendors SHOULD submit a copy of their NJ Business Registration Certificate with their packet. Vendor must submit a copy of their NJ Business Registration Certificate prior to award of any contract.

**COUNTY OF ATLANTIC, NEW JERSEY INVITATION TO BID,  
INSTRUCTIONS TO BIDDERS, AND GENERAL CONDITIONS**

**INVITATION TO BID**

Sealed bids will be received by the Purchasing Agent of the County of Atlantic, New Jersey, 1333 Atlantic Avenue, Atlantic City, NJ 08401, at the time and date as specified in NOTICE TO BIDDERS, at which time and place the bids shall be publicly opened and read aloud for the following:

**BID #201959.1- RENOVATIONS TO LAKE LENAPE PARK EAST CATERING HALL  
DECK**

**(BID SECURITY & SURETY REQUIRED)**

**INSTRUCTIONS TO BIDDERS**

**1. Delivery of BIDS; Deadline for Submission of BIDS**

Bid shall be submitted in a clearly marked sealed envelope, plainly marked on the outside as follows: Bidder's Name and Address, Bid Category and/or Project Name, and due date, in accordance with all of the requirements set forth herein.

All bids shall be delivered at time and date as stated on NOTICE TO BIDDERS to:

Atlantic County Division of Budget and Purchasing  
Attn: Palma Conover, QPA  
Atlantic City, New Jersey 08401

**2. Late or Erroneous Bid Delivery**

Late bids (i.e., any bid not delivered at the time, date and location specified above) shall be rejected. The County shall not be responsible for late courier delivery or late postal delivery, nor shall postmark dates or overnight dates be considered in honoring bids. The County shall not be responsible for Bidders hand-delivering bids which arrive late or to the wrong location.

**3. Use of County Forms**

Unless otherwise specified, bids shall be received only on the bidding forms attached to this specification, or a true copy thereof. Unless otherwise specified, bidders shall not alter the forms or use different forms. Unless otherwise specified, failure to use the County's forms or true copies thereof, shall be grounds for rejection of the bid.

#### 4. Addendums and Modifications of the Bid

The County reserves the right to issue Addendums, Modifications, Clarifications and Updates to this bid, and to add or remove materials, quantities, equipment, goods, services and divisions of Work, or parts thereof, or other components of the Work from the bid specifications or Contract Documents, as the County deems necessary to serve the County's needs and interests.

Bidders shall acknowledge receipt of any notice, modifications, revisions or addenda to the advertisement or to these bid documents that may be issued by the County in accordance with an acknowledgement form provided by the County.

#### 5. Signatures

This Bid requires certain documents be provided to the County as required by law. Documents listed in Section A below must have ORIGINAL SIGNATURES at the time of the Bidder's submission of its bid proposal to the County. Documents listed in Section B below may be submitted as copies with the bid submission, provided that original signatures will be provided by the Bidder who is issued a Notice of a recommendation of award, within 5 day after issuance of such notice.

##### A. ORIGINAL SIGNATURES **REQUIRED** AT THE TIME OF SUBMISSION OF THE BID.

These documents shall **REQUIRE ORIGINAL SIGNATURES AT THE TIME OF THE BID SUBMISSION BY THE BIDDER TO THE COUNTY. FACSIMILE, COPY OR RUBBER STAMP SIGNATURES WILL NOT BE ACCEPTED AND SHALL BE CAUSE FOR AN AUTOMATIC REJECTION OF THE BIDDER'S PROPOSAL.** Any bid price showing any erasure or alteration must be initialed by the bidder in **INK**.

- **Proposal Form**
- **Bid Security (Check or Bid Bond with Agent and Bidder Signatures )**
- **Consent of Surety (Agent and Bidder Signatures)**
- **Disclosure Statement**
- **Acknowledgement of Receipt of Addenda**
- **Investment Activities in Iran Certification**

B. ORIGINAL SIGNATURES ARE **NOT REQUIRED** AT THE TIME OF SUBMISSION OF THE VENDOR'S BID PROPOSAL. The County will accept copies of the following documents with the Bid Submission, provided that these documents shall be submitted with original signatures within 5 days after the County's issuance of a notice of award:

- **Non-Collusion Affidavit;**
- **Affirmative Action Information**

**THERE ARE NO EXCEPTIONS TO THESE REQUIREMENTS; FAILURE TO COMPLY WITH THESE REQUIREMENTS SHALL RESULT IN A BID GUARANTEE CLAIM, A DISQUALIFICATION OF THE BIDDER OR ANY OTHER REMEDY AVAILABLE TO THE COUNTY, IN ITS SOLE DISCRETION.** The County shall have the right to award the contract to the next lowest responsible vendor. There will be no negotiation of this requirement.

## **6. Incomplete Submissions; Updates & Addenda**

It shall be the responsibility of the bidder to submit bids that are responsive to all bid specifications and forms, including any updates, clarifications or addenda thereto that may be issued by the County prior to the bid submission due date either directly from the Division of Budget and Purchasing or the Atlantic County Bid Portal.

The County shall not be responsible for any erroneous pages or pages missing from the bid documents, if the bidder has obtained the documents from a source other than directly from the County Division of Budget and Purchasing or the Atlantic County Bid Portal, or if such forms are missing or altered due to bidder error, neglect or any other cause.

The County shall not be held responsible if a Bidder fails to receive any updates or addenda to this Bid, due to the failure of the Bidder to secure its bid documents directly from the County Division of Budget and Purchasing or the Atlantic County Bid Portal, or due to bidder error or neglect.

## **7. Sealed Bid Submissions - No Phone, Fax or Unauthorized Submissions**

As this is a Sealed Bid Submission pursuant to N.J.S.A. 52:34-12, Telephone, Facsimile (fax), Telegraph Bids or any other electronic mediums will not be accepted for publicly advertised bid requirements.

## **8. Pre-bid Meeting**

Site visits are recommended, as indicated in the Advertisement for Bid. Site visits can be scheduled by contacting the project manager.

## **9. Pre-Bid Inquiries**

In the event that a Bidder may have any questions regarding this Bid or the Work, all such questions should be submitted in writing to: Fax (609) 343-2193

Atlantic County Division of Budget and Purchasing  
Attn: Palma Conover, QPA  
1333 Atlantic Avenue, 6<sup>th</sup> Floor  
Atlantic City, New Jersey 08401

Responses will be forwarded to all bidders who have obtained a bid package from the County Office of Budget and Purchasing or from the Atlantic County Bid Portal.

## **10. No Oral Instructions**

Neither the County of Atlantic nor their authorized representatives will be responsible in any way for oral answers unconfirmed in writing to any inquiries regarding the intent or meaning of these specifications. All inquiries shall be submitted and addressed by the County Purchasing Agent, as specified above.

## **11. Communications with County Staff**

No bidder intending to submit a bid, nor any employee of any firm intending to submit a bid, shall contact any County employee for any reason either directly or indirectly related to this Bid except as specified above.

## **12. Purchasing Agent's Interpretations Are Binding**

Should any difference arise between the bidders and the County as to the meaning or intent of these instructions or specifications, the County Purchasing Agent's decision shall be final and conclusive to the fullest extent permitted by law.

## **13. CONSENT OF SURETY (REQUIRED TO BE SUBMITTED WITH THE BID PROPOSAL PACKAGE)**

In addition to the Bid Security, each bid must be accompanied by one (1) or more consent of surety statements, in a form similar to the Certificate attached as Exhibit B, of one (1) or more surety companies authorized by the State of New Jersey Department of Banking and Insurance to issue Bonds in the State of New Jersey and acceptable to the County, unconditionally agreeing, in the event the Bidder is awarded the Contract, to furnish a performance bond(s) with material and payment guarantees pursuant to N.J.S.A. 2A:44-143 (Performance Bond). In the event the surety company or companies choose(s) to furnish its (their) own form of Certificate, the substituted form must be substantially in compliance with the form provided herein. A power of attorney and the most current financial disclosure statement shall support the Consent of Surety. AIA forms are not acceptable. The failure to provide these documents with the bid proposal shall result in a rejection of the bid.

### **PERFORMANCE SECURITY**

Within ten (10) days after receipt of the Notice of Award the Contractor shall furnish a surety bond or bonds of face value equal to one hundred (100%) percent of the Contract price as security for faithful performance of the Contract, and for the payment of all persons performing labor on the project under the Contract and furnishing materials in connection therewith, all as specified in the Contract Documents. The Performance Bond shall be in the form annexed as Exhibit G. The surety on such bond or bonds shall be duly authorized by the State of New Jersey Department of Banking and Insurance to issue Bonds in the State of New Jersey and satisfactory to the County, except as otherwise provided by N.J.S.A. 40A:11-22 and except as modified by the County by separate resolution. If the Contractor is a partnership, the bond is to be signed by each of the individual partners; if a corporation, the bond is to be signed in the correct corporate name by a duly authorized officer, agent or attorney in fact. There shall be executed an appropriate number of counterparts of the bond corresponding to the number of counterparts of the Contract. Each executed bond shall be accompanied by:

1. An appropriate acknowledgment of the respective parties.
2. An appropriate certified copy of a power of attorney when the bond(s) is/are executed by the surety's agent, officer or other representative.
3. A certified extract from the by-laws or resolution of the surety under which power of attorney or other certificate of the agent, officer or representative was issued.
4. A Surety Disclosure Statement and Certification.

Performance Security set forth on AIA forms is not acceptable.



**14. BID SECURITY (REQUIRED TO BE SUBMITTED WITH THE BID PROPOSAL PACKAGE)**

Each Bidder shall submit with the bid a certified check, cashier's check or bid bond in the amount of ten (10%) percent of the total price bid, but not in excess of \$20,000.00, payable unconditionally to the owner. When submitting a Bid Bond, it shall contain a Power of Attorney for the full amount of the Bid Bond from a surety company authorized to do business in the State of New Jersey and acceptable to the owner. The check or bond of the bidder to whom the contract is awarded shall be retained until a contract is executed and the required performance bond or other security is submitted. The check or bond of the successful bidder shall be forfeited if the bidder fails to enter into a contract pursuant to N.J.S.A. 40A:11-21.

The bid security of all bidders except the three (03) apparent lowest responsible bidders shall be returned pursuant to N.J.S.A. 40A:11-24(a) after the opening of the bid proposals. The bid security of the remaining unsuccessful bidders will be returned within three (03) days, Sundays and holidays exempted, after award of the contract and upon receipt and approval of the Contractor's Performance Bond.

Non-performance by a successful bidder or their failure to execute the contract or meet bond requirements within ten (10) days after receipt of the County Contract shall result in their bid security being forfeited to the County as liquidated damages.

Where the specifications or instructions provide for no Surety/Performance bond requirements, the check of the successful bidder will be returned upon satisfactory completion of the work or delivery and inspection of the goods and services purchased subject to such other provisions of these instructions or the specifications, whichever may apply.

If no contract has been awarded within sixty (60) days (or upon written extension by both parties) after the bid proposal opening, the bid security will be returned upon demand of the bidder.

**NOTE:** Documents attesting to the County of the persons executing this bond to so act on behalf of the surety company, as well as the most current financial statement of the company, must be annexed hereto. The surety company's own form will be accepted if in compliance with Atlantic County's sample bid bond and consent of surety. No AIA forms are acceptable. The failure to provide these documents with the bid proposal shall result in a rejection of the bid.

**15. Bid Prices**

Prices must be stated for all bid items, in numeric form, in accordance with the forms provided by the County. Bidders shall not alter the Bid format provided by the County.

Blank values, or responses which indicate that an item is not included, or subject to conditions or modifications not otherwise stated or permitted by this Bid shall be deemed non-conforming and shall be rejected.

Bid prices shall include all of the materials, goods, work and services to be delivered or performed by the Contractor to perform the Work and shall not be subject to additional charges or expenses unless such additional charges or expenses are explicitly authorized and approved in advance by the County, as set forth herein.

Each component of the bid, whether stated as a lump sum, a unit price, allowance or "as and where directed" quantity, shall include all related costs, including but not limited to profit and overhead associated with each such component of the bid.

All components of the Work assigned to the bidder under the Contract Documents shall be performed at no additional costs to the County and the Bidder shall not seek or impose additional costs or charges for any such component of the Work, unless such charges or costs are explicitly authorized by the Contract Documents.

#### **16. Add and/or Deduct Alternates**

In the event that this Bid includes or is amended by the County to include Add and/or Deduct Alternates, all Bidders shall be required to respond to such Add and/or Deduct Alternates in their bid proposals, in accordance with the Proposal forms supplied by the County. Failure to do so shall result in rejection of your bid. Bidders shall not alter the Add and/or Deduct Alternate form provided by the County. Bidders shall fully complete and execute the form provided by the County in accordance with all instructions applicable to bid submissions as stated herein. The County reserves the right, in its sole judgment and discretion, to award or reject all Add and/or Deduct Alternates, or any combination thereof.

#### **17. Multiple Bids Not Allowed**

Each bidder shall submit no more than one bid. Submission of multiple bids by or on behalf of any individual, firm, partnership, corporation or association shall be cause for rejection of all of such multiple bids. Nothing herein shall preclude separate and distinct corporate entities from submitting bids when such entities are partially or wholly owned by a parent entity.

#### **18. Alternative Bids Not Allowed**

No Bidder shall be allowed to offer more than one price on each item, even though he/she may believe that he/she has two or more types or styles of goods, materials, services or combinations thereof that will meet the requirements of these specifications. Bidders must determine for themselves which to offer. If a bidder submits more than one price on any item, the bidder's bid for such alternatively priced items shall be rejected.

#### **19. Fixed Pricing**

Bid prices are to remain firm for a period of not less than sixty (60) days to allow the County to determine the lowest bid that shall most economically serve the intentions of this bid.

#### **20. Bids Based Upon Specifications; Bid Deviations**

It shall be presumed that all bids are based upon these specifications, unless the bidder explicitly states to the contrary in a letter format that shall be attached to the bidder's bid submission.

#### **Bidders shall not type changes upon, or make any other alterations to bid specifications and forms.**

All proposed deviations, alterations or other changes from the specifications proposed by the bidder shall be explained in detail in the Bidder's submission. At a minimum, the bidder shall describe the alternative(s) in a letter that shall be submitted with the bid, which shall be signed by the bidder and which shall explain the proposed deviations, alterations or other changes in detail and provide such additional data as necessary to verify that the proposed deviations, alterations or other changes will meet or exceed the requirements of this Bid. If the County determines, in its sole judgment, that the proposed deviation, change or alteration materially alters the requirements of this Bid to the disadvantage of the County, or is otherwise deemed by the County to

be inconsistent with the County's requirements, including but not limited to requirements imposed by law, the County reserves the right to reject the Bid.

## **21. Brand Names or Equivalents**

If and whenever in the proposal a brand name, make, name of any manufacturer, or trade name is mentioned, it is for the purpose of establishing a grade or quality of merchandise. The County of Atlantic does not wish to rule out other competition and equal brands or makes, and therefore, the phrase **or equivalent** is added. If merchandise other than that specified is bid, it is the Bidder's responsibility to name such within the Bid and to provide information to the County that shall demonstrate that the said item(s) is equivalent to that specified. The County shall be the sole judge concerning the merits of the Bidder's proposed alternative, and reserves the right to reject such bids if, in the County's sole judgment, the proposed alternative materially alters the requirements of this Bid to the disadvantage of the County, or is otherwise deemed by the County to be inconsistent with the County's requirements, including but not limited to requirements imposed by law, the County reserves the right to reject the Bid.

## **22. Non-proprietary Equipment**

All equipment purchased by the County of Atlantic shall be non-proprietary, unless Specified otherwise or unless non-proprietary equipment is not available.

## **23. FOB Prices**

Prices quoted in all bids shall be delivered prices, F.O.B. destination, freight prepaid.

## **24. Price Adjustments**

Bid prices shall not be subject to any increase during the life of the contract, unless an increase is specifically authorized by the Contract Documents. Should there be any reduction in the Bidder's costs to procure goods, supplies, materials, labor or any other component of the Work as submitted in the Bid, the unit prices charged to the County will be reduced to reflect any such reduction in actual costs incurred by the Contractor for all such goods, supplies, materials, labor or any other component of the Work, to the extent that such reductions are specified or required by the Contract Documents.

## **25. Discounts**

All price discounts (if any), shall be calculated as of the date of acceptance by the County of any such discounted goods, supplies, materials, labor or any other component of the Work, regardless of the date of delivery or invoice.

## **26. Irrevocable Bids**

All bids are irrevocable by the subscriber, or his, their or its personal or legal representatives. Said Bid and award thereunder is made to the subscriber by the County of Atlantic and shall bind the subscriber, his, their or its heirs, executors, administrators, successors or assigns.

## **27. Withdrawal of Bids Prior to Bid Opening**

A written request for the withdrawal of a bid, or any party thereof, will be granted if the request is received by the County Purchasing Agent prior to the specified time of the bid opening.

## **28. Taxes**

The County is exempt from all taxes including Federal Excise Tax, Transportation Taxes, State Excise and Sales Tax, and local taxes. Contractor shall pay all sales, income, consumer, use and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the State of New Jersey and United States which are applicable to the Contractor during the performance of the Work. Contractor shall not pass through to County any taxes for which the County is exempted by the laws of the State of New Jersey. County shall cooperate with Contractor in providing evidence of its tax-exempt status.

## **29. Bid Award**

The County of Atlantic shall award all contracts on a **lump sum basis** to the lowest responsible and responsive bidder per Location.

## **30. Bid Ties**

Where two or more bidders are tied in any bid submission or component thereof, the County reserves the right to make the award to either of the bidders.

## **31. Delivery Dates**

All Bidders, where required, shall clearly stipulate the guaranteed delivery date of all items. Successful Bidder(s) failing to meet the delivery date specified by the Contract Documents shall be subject to the imposition of all sanctions and penalties provided for in the Contract Documents, or more generally at law or in equity.

## **32. Time for Award**

The award of the contract or the rejection of the bids shall be made within sixty (60) days of the date of receiving bids; unless written extensions are requested by the Purchasing Agent and accepted by the Bidder(s). All bid securities shall be returned immediately if all bids are rejected. The successful Bidder(s) to whom the award is to be made shall be notified by receipt of the contract or a written "Notice to Proceed" from the County department for whom the work is being provided.

## **33. Funding Contingency**

When award of contract is made in one fiscal year with an effective date in the next fiscal year, the award shall be contingent upon the availability of appropriation of sufficient funds for that purpose for the year in which said contract takes effect. When a contract shall be awarded for a period in excess of one year, said contract shall be contingent upon the annual availability and appropriation of sufficient funds for that purpose for each year of the contract, as required by law.

## **34. Modification of the Work**

Prior to commencement of any specific component of the Work, the County reserves the right to remove such component from the Work, for the convenience of the County, by providing written notice to the Bidder. The Bidder shall not be entitled to compensation for removal of any such component of the Work as of the Notice date, provided, however, that the Bidder shall be entitled to payment for any materials purchased and delivered to the County for any such component of the Work prior to date of the County's notice.

### **35. Bid Rejection**

The County reserves the right to reject all bids, when the County deems that rejection of all bids is advisable and in the best interest of the County. In addition, the County reserves the right to reject any or all items covered in the bid request, or any portion(s) thereof, waive informalities, re-advertise and/or take such other actions that the County deems advisable and in the best interest of the County, to the fullest extent permitted by law.

### **36. Withdrawal of Certain Bids on Public Works Projects, Pursuant to N.J.S.A. 40A:11-2 (42).**

N.J.S.A. 40A:11-23.3 authorizes a Bidder to request withdrawal of certain bids, on public works projects only as defined by the said statute, due to a mistake on the part of the Bidder. A mistake is defined by N.J.S.A. 40A:11-2 (42) as a clerical error that is an unintentional and substantial quantity of labor, material, or both, from the final bid computation.

A Bidder claiming a mistake under N.J.S.A. 40A:11-23-3 must submit a request for withdrawal, in writing, by **US POSTAL SERVICE CERTIFIED OR REGISTERED MAIL** to Palma Conover, Division Director of Budget & Purchasing, 1333 Atlantic Ave., 6th Floor, Atlantic City, NJ 08401. The Bidder request for withdrawal of a bid due to a mistake, as defined by the law, must be postmarked within five (5) business days after the receipt and opening of the bids or the request will not be considered by the Purchasing Agent.

A Bidder's request to withdraw the bid shall contain evidence, including any pertinent documents, demonstrating that a mistake was made. Such documents and relevant written information shall be reviewed and evaluated by the County Purchasing Agent pursuant to the Statutory criteria of N.J.S.A. 40A:11-23.3.

All of the following criteria provided must be met by the bidder in order for a bid to be withdrawn.

- A. Enforcement of the contract, if actually made, would be unconscionable;
- B. The mistake relates to a material feature of the bid;
- C. The mistake occurred notwithstanding the fact that the Bidder exercised reasonable care in preparation of the bid; and
- D. The Bidder making the mistake is able to get relief by way of withdrawing the bid without serious prejudice to the contracting unit, except for the loss of the bargain to the contracting unit.

### **37. Execution of Contract**

The Contractor shall be required to sign the standard County Contract, a copy of which is attached, within ten (10) days after the County's issuance of a contract document to the successful bidder. Failure to execute the contract as required herein shall be subject to sanctions and remedies specified hereinafter.

Work shall not commence until the contract has been fully executed, excepted for any project administrative items the Contractor may begin upon receipt of a Notice to Proceed, i.e. submittals, developing draft schedule of values, further inspection of project site, developing staging areas, etc.

**38. Modifications or Additions to the Contract Documents**

Bidders shall not make modifications or alterations to the contract documents and shall not replace or include contracts or forms other than those that have been provided by the County with the bid documents.

**39. LEFT BLANK**

**40. LEFT BLANK**

**41. LEFT BLANK**

**42. Bid Preparation Costs**

The County shall not be liable for any costs incurred by any Bidders in the preparation or submission of its Bid.

**43. Ownership of Bids**

All Bids shall become the property of the County upon receipt and will not be returned.

**44. Dissemination of Bids Plans and Bid Information**

Information included in this document or in any way associated with this Bid, including but not limited to any plans for the Work that may be supplied or obtained by the Bidder pursuant to this Bid, are intended for use only by the Bidders to submit Bids and complete the Work, and shall remain the property of the County. Under no circumstances shall any of said information be published, disseminated to persons not employed by the Bidder copied or used, except as necessary to reply to this Bid and perform the Work.

**45. Public Works Contractor Registration Act**

The Public Works Contractor Registration Act, N.J.S.A. 34:11-56.48, specifies that no Contractor or subcontractor shall bid on or engage in any contract (or part thereof) for public work which is subject to the provisions of the “New Jersey Prevailing Wage Act PL 1963 C. 150 (C: 34:11-56.25)” for the construction, reconstruction, demolition, alteration, repair or maintenance of a Public Building regularly open to and used by the general public institution and includes any subcontractor or lower tier subcontractor unless they are registered with the Commissioner of Labor. Bidders submitting a Bid for a public works contract or performing public work **MUST** submit a **certificate of registration with their Bid. Failure to submit a copy of the certificate of registration will result in rejection of the Bid. Copies of the Bidder’s subcontractor’s certificate of registration will be required after submission of the Bid but prior to the award of the contract.**

**Note: A copy of an application for registration is not acceptable as a substitute for the required certificate of registration.**

**46. Prevailing Wage Requirements**

The New Jersey Prevailing Wage Act, N.J.S.A. 34:11-56.25 (P.L. 1963, Chapter 150) is hereby made a part of every Contract entered into by the County of Atlantic, except those Contracts which are not within the scope of the Act. The successful Contractor and any of its subcontractors shall be obligated to pay the prevailing wage, to submit certified payrolls and documentation of compliance, and to permit on-site monitoring, including interviews with employees and review of subcontracts, by County representatives. The Contractor's signature on the Contract is his guarantee that neither he nor any subcontractors he might employ to perform the work covered by this Bid are listed or are on record in the office of the Commissioner of the New Jersey State Department of Labor as one who has failed to pay prevailing wages in accordance with the provisions of this act. Every Contractor and subcontractor shall keep an accurate payroll record, showing the name, craft or trade, job title or classification, actual hourly rate of wages paid, hours worked, and total wages paid to each worker employed by him in connection with a public work. The prevailing wage as published by the Department of Labor shall be noted on the payroll journal next to the actual wage rate paid. Payroll records shall be presented for a period of two (2) years from the date of payment. The successful Contractor shall be responsible for ensuring that its subcontractors comply with the Act and shall cooperate with County or State requests for information to verify compliance.

**47. Left Blank****48. Left Blank****49. Left Blank****50. New Jersey Business Registration Certificate**

**No contract shall be entered into by any contracting agency unless the contractor provides a copy of its business registration.**

**All non-governmental entities SHOULD submit a copy of their Business Registration Certificate or a copy of their 501(c) designation with their Bid. Bidder must submit a copy of their NJ Business Registration or 501( c ) designation prior to award of the contract.**

All bids must comply with the provisions mandated by applicable Federal Law and New Jersey Statutes.

Any provision in the specification which may be in conflict with any New Jersey statute are amended to conform to the minimum requirement of such statute.

**51. Affirmative Action**

The Bidder shall be required to comply with the requirements of N.J.S.A. 10:5-31 et seq. and N.J.A.C. 17:27. Upon notification of award the Contractor shall complete an Initial Project Workforce Report Form AA-201 and submit a copy to the County and the NJ Division of Purchase and Property. Thereafter, the Contractor shall submit a copy of the Monthly Project Workforce Report Form AA-202 to the County and the NJ Division of Purchase and Property once per month for the duration of the contract. Forms, instructions and more information can be found at [http://www.state.nj.us/treasury/contract\\_compliance](http://www.state.nj.us/treasury/contract_compliance).

**52. Non-Discrimination**

The provisions of N.J.S.A. 10:2-1 through 10:2-4, dealing with discrimination in employment on public contracts, and the Rules and Regulations promulgated pursuant thereunto, are hereby made a part hereof and shall be binding upon the successful Bidder in the performance of the Project for the County.

**53. NJ PEOSHA**

The successful Bidder will be required to comply with all applicable provisions of the N.J. Public Employees Occupational Safety and Health Act, (N.J.A.C. 34:6A-25), when providing any materials, supplies or services as part of the Work.

**54. Worker and Community Right to Know Act**

The manufacturer or supplier of a substance or mixture shall supply the Chemicals Abstracts Service number of all the components of the mixture or substance and the chemical name to the County to insure that every container bears a proper label at a County facility, in accordance with P.L. 1982, Chap. 315, "Worker and Community Right to Know Act" sub sect. b, sect. 14. Further, all applicable Material Safety Data Sheets (MSDS), a/k/a Hazardous Substance Facts Sheets, must be furnished to the County.

**55. Buy American**

Only manufactured and farm products of the United States, wherever available, shall be used in connection with this undertaking, pursuant to 40A:11-18 of the Revised Statutes of the State of New Jersey.

**56. One Call System–Call Before You Dig**

Prior to performing any work that requires excavation; the Contractor shall be responsible for ascertaining underground utility locations and shall comply with the requirements of the New Jersey "One Call" system (Dial 8-1-1 or 1 (800) 272-1000).

**57. Recycling**

The Atlantic County Recycling Program and Solid Waste Management Plan. The Contractor shall be required to comply with the requirements of the Atlantic County Solid Waste Management Plan and Recycling Plan, adopted in accordance with N.J.S.A. 13:1E-1, et seq., and Atlantic County Ordinances #10 of 2009 and #9 of 2014. The said plans and ordinances specify requirements concerning disposal of solid wastes, along with materials that are identified as either mandatory recyclables or recommended to be recycled.

**58. Americans with Disabilities Act**



To request a reasonable accommodation of a disability, contact the ADA Coordinator at Telephone: (609) 645-7700 ext. 4519 (TTY uses NJ Relay 1-800-852-7899) at least five (5) business days prior to any meeting, inspection or other event.

#### **59. Compliance with All Law**

The Bidder's preparation and submission of its Bid, together with the Bidder's provision of all materials and goods, and the performance of all work and services as required to accomplish the Work as set forth herein, shall be subject to all applicable Federal, State and County ordinances, regulations and statutes. All statutes, rules and regulations that are applicable to the Work shall apply as if set forth in full herein. By submission of a Bid, the Bidder warrants and represents to the County that it is familiar with, and shall comply with all of the statutes, ordinances, rules and regulations that are applicable to the materials, goods, work and services required to accomplish the Work as set forth herein.

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#### **61. Reference to Standards, Specifications and Regulations**

Reference to standards, specifications, manuals or codes of any technical society, organization or association, or to the Laws or Regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard, specification, manual, code or Laws or Regulations in effect at the time of opening of the Bids, except as may be otherwise specifically stated in the Contract Documents. The bidder, for itself and for its subcontractors and suppliers acknowledge their familiarity and experience with generally accepted published standards of quality and workmanship applicable to the portions of the Work performed and services provided by them. The requirements of any indicated reference standard are hereby incorporated into the Contract Documents and made a part thereof, to the extent indicated by the applicable reference thereto, provided that the same are not contrary to or otherwise in conflict with any other specification or requirement set forth in the Contract Documents. All work performed under this contract shall meet or exceed all applicable local, state and federal codes and regulations.

#### **62. Bidder's Understanding of the Contract Documents**

- A. By submitting a Bid, the Bidder warrants and represents that it has a thorough understanding of this Bid and of all goods, materials and operations necessary to provide the County with all materials, goods and services necessary to accomplish the Work as specified herein.
- B. It is the responsibility of the bidder, by personal examination of the work site at the County's pre-bid meeting(s), the documents and such other records and resources as may be reasonably prudent for the Bidder's development of its own knowledge and understanding of the materials, equipment and tasks necessary to accomplish the Work, and to satisfy him/herself as to the location of the work, quality, and quantity of the materials, equipment, staffing and all other resources, costs and tasks that will be required to perform the Work.
- C. The Bidder shall not at any time after the submission of its Bid make any claims whatsoever alleging insufficient data or incorrectly assumed conditions, nor shall the Bidder claim any misunderstanding

with regard to the nature, conditions or character of the Work or any elements thereof to be provided or performed hereunder.

### **63. Captions and Headings**

Captions and headings used throughout this document are for convenience only and shall not be used or interpreted as having any particular meaning or limitation upon the terms and conditions stated herein. Similarly, organization and division of various sections is only intended for organizational convenience and shall not be construed to affect or limit the specific terms and conditions of the various provisions herein.

### **64. Atlantic County will not be held responsible for vendors not receiving general information due to their not scheduling any Pre-Bid viewing of the project area.**

**65. Investment Activities in Iran Certification** - Pursuant to N.J.S.A. 52, 32-55, et seq., any person or entity that submits a bid or proposal or otherwise proposes to enter into or renew a contract must complete a certification with their bid, in the form provided, to attest, under penalty of perjury, that neither the person or entity, nor any of its parents, subsidiaries, or affiliates, is identified on the Department of Treasury's Chapter 25 list as a person or entity engaging in investment activities in Iran. The Chapter 25 list is found on the Division of Purchase and Property's website at [www.state.nj.us/treasury/purchase/pdf/Chapter25List.pdf](http://www.state.nj.us/treasury/purchase/pdf/Chapter25List.pdf)

## **UNSCHEDULED WALK-INS AT THE PROJECT SITE WILL NOT BE ALLOWED**

### **66. Debarment; Bidder Warranty**

No work may be awarded to a Contractor or subcontractor who is included on the State Treasurer's List of Debarred, Suspended and Disqualified Bidders, or who has been debarred, suspended or disqualified from New Jersey Department of Environmental Protection and Energy contracting pursuant to N.J.A.C. 7:1 By submitting a Bid, the Bidder warrants to the County that neither the Bidder nor any of its subcontractors is Debarred, Suspended or Disqualified to execute and perform the contract.

In addition to other liabilities or remedies that may be available, note that the Contractor may be debarred, suspended or disqualified from contracting on any project financially assisted by the State of New if the Contractor commits any of the acts listed in N.J.A.C. 7:1-5.2.

### **67. Ethical Standards**

County employees are prohibited by policy from accepting gifts from vendors. Consequently, all bidders should be aware and should make all employees and representatives aware that they may not offer any item or material, irrespective of the perceived value of the item or material, to any County employee. Items and materials that have been or are intended to be discarded by the bidder shall not be offered or given to an employee. Bidders must report immediately any employee who approaches the bidder, the bidder's employees or representatives and solicits, requests or suggests in any way that the bidder provide something as a gift to the employee.

## **GENERAL CONDITIONS**

### **1. Contractor's Workforce**

- A. The Successful Bidder (also referred to as the "Contractor") hereby agrees that it shall provide the necessary workforce to accomplish the Project as set forth in the Contract Documents, and if necessary, to increase said workforce to complete the Project within the time schedule and performance requirements set forth in the Contract Documents. The Contractor shall furnish all materials, tools, equipment, transportation, supervision, and perform all labor and services necessary and incidental to the satisfactory completion of the Work in a proper workmanlike manner within the time stipulated as set forth in the specifications.
- B. For any Work that requires access to County buildings and other facilities, the Contractor shall be responsible for ensuring that all of its employees, subcontractors and other agents engaged by the Contractor shall comply with the County's rules and procedures regarding access to such buildings and facilities.
- C. The Contractor shall remove any of its employees or subcontractors from County property who are deemed not to meet the requirements and conditions set forth herein, including but not limited to unexcused violations of any laws, rules, or ordinances that are applicable to the Work.

### **2. Project Superintendent**

Subject to and without limitation upon any more specific requirements of the Technical Specifications and County Special Conditions below, the Contractor shall provide and designate a duly qualified employee of the Contractor who shall serve as the Project Superintendent. The Project Superintendent shall oversee and manage performance of the Work on a day to day basis. The Contractor shall ensure that its Project Superintendent has sufficient credentials and experience in provision and supervision of the Work required hereunder. The Project Superintendent shall monitor all installations, all contract administration duties and shall oversee performance of the Work by the Contractor and any subcontractor or other third party performing any part of the Work by or on behalf of the Contractor. The Project Superintendent shall serve as the designated contact person at the Work site who shall be available during all working hours to review and respond to any instructions, directives, concerns or other matters raised by or on behalf of the County's Project Manager.

In the event that the designated Project Manager shall be unable to perform these responsibilities, due to injury, illness, severance of employment or any other reason, the Contractor shall promptly notify the County and shall designate another duly qualified employee to serve as a substitute Project Manager within 48 hours.

### **3. Subcontractors and Assignments**

- A. Assignment to any third party of any monies due or to grow due the bidder or any sub contract based upon this bid is prohibited and will not be recognized by the County. Any such assignment shall be considered a default by the County.
- B. The contractor shall not subcontract any portion of the work covered by these specifications without the prior written and explicit consent of the County of Atlantic. No subcontract will be effective or

deemed permitted without the prior written consent of the County, and any authorized subcontract shall be considered a default by the County.

- C. The successful Bidder must maintain and submit to Atlantic County a list of subcontractors and their addresses that may be updated from time to time during the course of contract performance. A complete and accurate list shall be submitted before final payment is made for goods provided or services rendered or for construction of a construction project under this contract.
- D. All subcontractors shall provide a copy of their business registration to any contractor who shall forward it to the County. No contract with a subcontractor shall be entered into by any contractor under any contract with Atlantic County unless the subcontractor first provides proof of valid business registration. The successful Bidder as well as their subcontractors and each of their affiliates shall collect and remit to the Director of the Division of Taxation in the Department of the Treasury the use tax due Pursuant to the "Sales and Use Tax Act" P.L.1966, c.30 (C.54:32B-1 et seq. on all their sales of tangible personal property delivered into the state of New Jersey.
- E. The Contractor shall be partly, solely and fully responsible to the County for the performance of all requirements of the Contract Documents, at all times and in all respects, without regard to any subcontract or assignment agreement. If a subcontract or other assignment is authorized by the County, the assignee or subcontractor shall enter into an agreement affirming that it shall be bound by all of the terms, conditions and requirements set forth in the Contract Documents. The Contractor shall provide the County with copies of all subcontractor agreements upon the County's request.
- F. The Contractor shall pay all subcontractors for all materials, goods, services and labor provided by such subcontractors in connection with the Work, to the extent that such amounts are justly due and owing, subject only to such offsets, retainage and other adjustments that may be permitted by law.

#### **4. Contractor's Duty to Perform**

The Contractor's obligation to perform and complete the Work and provide all Services in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work or Services that are not in accordance with the Contract Documents, or as a waiver or release of Contractor's obligation to perform the Work and provide Services in accordance with the Contract Documents: observations made by the County, recommendation of any progress or final payment by the County, any determination that work is substantially completed or any payment by County to Contractor under the Contract Documents, any use of or reliance upon the Work or Services any part thereof by the County, any acceptance by the County, any failure to do so, any review and approval of a Shop Drawing, sample, submittal, substitution, or the issuance of a notice of acceptability, any inspection, test or approval by others, or any correction of defective Work by the County, any limitations of any Subcontractor's or Supplier's warranty, or similar actions or omissions by the County.

#### **5. Reliance upon Drawings, Plans and Other Information Provided by the County**

All information provided by the County to the Contractor is only offered to show conditions that are believed to exist, but it is not intended to be inferred that the conditions as shown thereon constitute a true and accurate representation by or on behalf of the County that such conditions actually exist. **The Contractor shall be solely responsible to inspect the job site prior to commencement of the Work and to field verify conditions and**

**measurements that actually exist. If any discrepancy exists, the Contractor shall promptly notify the County and await clarification regarding resolution of any such discrepancy by the County.**

Subject to and without limitation upon any more specific requirements of the Technical Specifications and County Special Conditions below, the Contractor shall accept full responsibility for any loss sustained by it as a result of any variances between the conditions as shown in drawings and plans, if any, and any other information provided by the County to the Contractor and the actual conditions revealed during the progress of the Work, to the extent that such conditions should have been reasonably observed or discovered by the Contractor prior to commencement of work affected by such variations.

## **6. Patent Fees, Licensee Fees and Royalties**

Contractor shall pay all patent and license fees and royalties (if any) and assume all costs incident to the Contractor's use of all materials and equipment necessary for the Contractor's performance of the Work.

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## **8. Permits**

The Contractor shall be responsible for identifying, applying for and obtaining any governmental agency permits and consents, along with any utility company permits, authorizations, relocations or consents, that may be necessary to proceed with the work which have not been obtained by the County, including (but not necessarily limited to) permits under the Uniform Construction Code, the Uniform Fire Safety Code and Soil Conservation District. Costs of application and compliance with all such permits shall be the contractor's responsibility.

## **9. Prompt Performance**

The Contractor's performance of the Work in a timely manner, without undue disruption of normal County operations and services is an essential component of the Work. The Contractor shall begin the Work promptly on the date of commencement as directed by the County and shall provide a level of effort necessary to carry the Work forward expeditiously, with adequate forces to achieve completion at the earliest possible date within the Contract Documents.

## **10. Progress Schedule**

Subject to and without limitation upon any more specific requirements of any Technical Specifications and County Special Conditions below, the Contractor shall develop and observe a task-oriented progress schedule that shall include a proposed start and completion date for the Work, with proposed progress milestones. The Contractor shall develop and maintain the schedule as necessary to complete the Work within any time limits set forth in these Specifications.

## **11. Pre-Construction Meeting and Progress Meetings**

The Contractor or its designated Project Manager shall attend any Preconstruction or Progress Meeting that may be deemed necessary by the County to address any issues or concerns related to the Work

## **12. Adherence to the Schedule; Modifications of the Schedule**

A. Subject to and without limitation upon any more specific requirements of the Technical Specifications and County Special Conditions below, there shall be no modification of the Work schedule without the prior written approval of the County.

All requests for modifications shall be made by the Contractor in writing, subject to prior approval of the County, in its sole judgment as to whether good cause exists and whether such time extensions shall interfere with safe and orderly operation of the County Facility where the work is being performed.

B. Failure to comply with the schedule and complete the Work within the Contract Time shall constitute a default and shall result in assessment of liquidated damages for each day of delay, in accordance with the more specific requirements of the Technical Specifications and Contract Documents, along with imposition of any other remedy authorized by the Contract Documents.

C. Where Contractor is prevented from completing any part of the Work within the specified Installation Times due to delay beyond the control of Contractor, the Contract Time may be extended in an amount equal to the time lost due to such delay, provided that the Contractor shall have first secured County consent based upon notice to the County which shall include verification of the reasons asserted that delays are beyond the control of Contractor, due to acts or neglect of others, County directives that require modification of the schedule, fires, epidemics, abnormal weather conditions or acts of God that prevent schedule adherence (referred to below as "excusable cause"). Any such extension shall additionally be subject to and in accordance with the more specific requirements of the Technical Specifications.

D. If in the opinion of the County, the Contractor is falling behind in the performance of Installation Work without excusable cause as set forth above, the County shall notify the Contractor, and the Contractor shall take such steps as may be necessary to improve his progress, which may include but not be limited to dedication of additional staff, additional hours, or other means, without additional cost to the County. Failure to comply shall constitute grounds for declaring the Contractor in default.

## **13. Work During Regular Business Hours**

All work shall be performed during regular daylight business hours (defined as work occurring between the hours of 7:00 a.m. to 5:00 p.m., Monday through Friday), provided however, that Contractor may make application to the County to work on evening or weekend hours, which shall be subject to the County's approval and subject to any more specific requirements of the Technical Specifications and the County Special Conditions. If the Contractor's work extends for more than 9 consecutive hours within any regular business day, the Contractor shall be responsible for all costs associated with such extended hours, including but not limited to any salaries, overtime, inspections, traffic control and equipment costs incurred on account of the extended hours.

## **14. Construction Layout**

Subject to and in accordance with any more specific requirements of the Technical Specifications, the Contractor shall, prior to commencement of work, review all design plans, investigate field conditions and perform all layout and mark-outs under the direction of a Licensed Professional Land surveyor, as necessary to accomplish the Work, at no additional costs to the County.

## **15. Hot Work**

The term "hot work" means hot riveting, welding, burning, open flame use, or other mechanical spark-producing operations or those operations resulting in high temperature surfaces. It also includes opening electrical systems which have the potential of arcing or otherwise igniting a flammable material. Without limitation upon any other regulatory requirement or prudent practice applicable to the Contractor's Work, the Contractor shall perform all hot work in a fire-safe manner. The Contractor shall supply and maintain on the site adequate fire-fighting equipment capable of extinguishing incipient fires when "hot work" is required. The Contractor shall comply with applicable federal, state, and local fire-prevention regulations.

## **16. Cutting, Selective Demolition, Patching**

A. In addition to any more specific requirements and conditions set forth in the Technical Specifications or elsewhere in the Contract Documents, the Contractor shall be responsible for performing all cutting, demolition and patching operations necessary to accomplish the Work in accordance with all applicable Codes, Manufacturer warranties, industry practices and any specific requirements and limitations applicable to cutting and patching individual parts of that Work.

### **B. Contractor Submittals**

Approval of procedures for Cutting, Demolition and Patching is required before proceeding. The Contractor shall submit a proposal describing procedures. Include the following information, as applicable, in the proposal:

1. List products to be used and firms or entities that will perform Work as well as a detailed description of the Work itself.
2. Indicate dates when cutting and patching is to be performed and the anticipated duration of the Work.
3. List utilities that will be disturbed or affected, including those that will be relocated and those that will be temporarily out-of-service. Indicate how long service will be disrupted.
4. If cutting and patching involves additions and modifications to structural elements, submit details and engineering calculations to show how these additions will be integrated with the original structure. In all cases indicate any changes in the elevation of the ceiling, or the effect on mechanical and electrical distribution systems.

5. Prior to the cutting and patching of interior Architectural Elements building components or modification of exposed finishes, review the repair/restoration procedures with the Architect prior to the inception of Work.
6. Approval by the Architect to proceed with cutting and patching does not waive the Architect's or the Owner's right to later require complete removal and replacement of a part of the Work found to be unsatisfactory or otherwise unacceptable.

The Contractor shall not cause or permit cutting, demolition or patching of any structural elements in a manner that would reduce their load-carrying capacity or load-deflection ratio, or which would otherwise fail to comply with the requirements of the Contract Documents. The Contractor will assume all responsibility for the integrity of the assembly and related assemblies upon the start of cutting or demolition work. The Contractor will provide all required bracing and shoring as directed by the County Project Manager / County Engineer and by standard construction practices.

The Contractor shall not cut and patch operating elements or safety related components in a manner that would result in reducing their capacity to perform as intended, or result in increased maintenance, or decreased operational life or safety.

The Contractor shall not cut, damage, alter or patch any part of the Work in a manner that would, in the County's opinion, reduce the aesthetic qualities of any fixture or element of the Work, or result in visual evidence of cutting and patching that is not otherwise permitted or directed by the Contract Documents. The Contractor shall remove, repair and /or replace Work cut and patched in a visually unsatisfactory manner.

## **17. Unit Prices**

A. Without limitation upon any more specific term or requirement set forth in the Technical Specifications, a unit price is an amount stated on the Contractor's Bid Form/ Unit Price Schedule as a price per unit of measurement for materials and services that will be added to or deducted from the Contract Sum by Change Order, in the event the estimated quantities of Work required by the Contract Documents are increased or decreased.

B. Each Unit price shall include all necessary material, overhead, profit, all costs and applicable taxes, fees, licenses and royalties of any kind attributable to the performance or provision thereof.

C. The Contractor shall refer to individual Specification Sections for activities requiring the establishment of unit prices. Additional provisions regarding methods of measurement and payment for unit prices are specified in those sections.

D. In addition to any other right or remedy set forth in the Contract Documents, the County reserves the right to reject the Contractor's measurement of work-in-place that involves use of established unit prices, and to have this Work measured or otherwise evaluated by an independent surveyor or Resident Engineer (at the County's expense).

## **18. Schedule of Values**



A. Without limitation upon any more specific term or requirement set forth in the Technical Specifications, "Schedule of Values" shall mean an itemized list that shall be prepared by the Contractor that establishes the values allocated to the various portions of the Contractor's Work and supported by such substantiating data as the County may require.

B. The Contractor shall use the Project Manual Table of Contents (if any, as set forth in the Technical Specifications or such other format as the County may provide) as a guide to establish the format for the Schedule of Values.

C. The Contractor shall develop a schedule of values that shall be fully consistent with the Contractor's Construction Schedule, and shall include all unit prices, extensions thereof and lump sum prices as set forth in the Contractor's bid. The schedule of values shall include all divisions of the Work, and shall be based upon costs sufficient for all materials, labor, design costs (if any) profit and overhead reasonably necessary to perform each component of the Work, in accordance with the Contract Documents.

D. The Schedule of Values will include Identification: Include the following Project identification:

1. Project name and location.
2. Name of the Architect.
3. Project number.
4. Contractor's name and address.
5. Date of submittal.

E. The Schedule of Values shall be arranged in a tabular form with separate columns to indicate the following for each item listed:

1. Generic name;
2. Name of subcontractor
3. Name of manufacturer or fabricator.
4. Name of supplier
5. Change Orders (CO) and/or Requests Against Allowances (RAA) that have affected value.
6. Dollar value.
7. Percentage of Contract Sum to the nearest one-hundredth percent, adjusted to 100 percent.

In addition, the Contractor shall provide a breakdown of the Contract Sum in sufficient detail to facilitate continued evaluation of Applications for Payment and progress reports. Break principal subcontract amounts down into several line items.

F. The Contractor shall supply its proposed Schedule of Values to the County within ten (10) days after issuance of the Notice To Proceed or execution of contract, as agreed to between County and Contractor. In the event that the County rejects the Contractor's proposed Schedule of values, the Contractor shall promptly provide such amendments and corrections as may be necessary or required by the County.

G. The Contractor shall coordinate the schedule of values with other schedules and components of contract administration, including:

1. Contractor's Construction Schedule.
- 2, Application for Payment form.
3. List of subcontractors
- 4.. List of products.
5. List of principal suppliers and fabricators.

H. The County will use the approved Schedule of Values in connection with the County's evaluation of the Contractor's Invoices and Work progress. The approved Schedule of values may also be used by the County as part of its assessment of any proposed change orders, Contract amendments and adjustments, as the County may deem necessary or advisable

## **19. Payment Applications**

A. Each Application for Payment shall be consistent with previous applications and payments as certified by the County Project Manager / County Engineer and paid for by the Owner.

B. The initial Application for Payment, the Application for Payment at time of Substantial Completion, and the final Application for Payment involve additional requirements.

C. Unless the County specifies otherwise, the Contractor shall use AIA Document G702 and Continuation Sheets G703 as the form for Applications for Payment. The Contractor shall also submit a completed Atlantic County Standard Invoice with original signature.

D. The Contractor shall complete every entry on the payment application form. The form shall be executed by a person authorized to sign legal documents on behalf of the Contractor and County. Incomplete applications will be returned without action. Entries shall match data on the Schedule of Values and the Contractor's Construction Schedule. Use updated schedules if revisions have been made, and shall include amounts of Change Orders and Construction Change Directives issued prior to the last day of the construction period covered by the application.

E. Transmittal: The Contractor shall Submit three (3) signed and sealed, executed copies of each Application for Payment, one completed Atlantic County Standard invoice, to the Architect by means ensuring receipt within twenty-four (24) hours; one (1) copy shall be complete, including waivers of lien and similar attachments, when required.

F. Waivers of Mechanics Lien: With each Application for Payment, submit waivers of mechanics lien from every entity who may lawfully be entitled to file a mechanics lien arising out of the Contract, and related to the Work covered by the payment.

G. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of the first Application for Payment, include the following:

1. List of subcontractors.
2. Completed Security & Control forms for each worker anticipated to be on site. This list is to be updated as needed throughout the project.
3. List of principal suppliers and fabricators.
4. Schedule of Values.
5. Contractor's Construction Schedule.
6. Copies of building permits.
7. Certificates of insurance and insurance policies.
8. Performance and payment bonds.
9. Data needed to acquire the Owner's insurance.
10. Initial settlement survey and damage report.

H. Application for Payment at Substantial Completion: The County requires a Temporary Certificate of Occupancy (TCO), or Certificate of Occupancy (CO), or Certificate of Approval (CA) from the ruling construction code entity in order to consider the work substantially complete. Following issuance of the Certificate of Substantial Completion, the Contractor shall submit an Application for Payment. This application shall reflect any Certificates of Partial Substantial Completion issued previously for the County's use or occupancy of designated portions of the Work.

Administrative actions and submittals that shall proceed or coincide with this application include:

1. Occupancy permits and similar approvals.
2. Warranties (guarantees) and maintenance agreements.
3. Test/adjust/balance records.
4. Maintenance instructions.
5. Start-up performance reports.
6. Change-over information related to Owner's occupancy, use operation, and maintenance.
7. Final cleaning.
8. Application for reduction of retainage, and consent of surety.
9. Advice on shifting insurance coverage.
10. List of incomplete work, recognized as exceptions to Architect's Certificate of Substantial Completion. (Punch List issued by Architect with County review.)

I. Administrative actions and submittal which must precede or coincide with submittal of the final payment Application for Payment include the following:

1. Completion of Project closeout requirements.
2. Completion of items specified for completion after Substantial Completion. These items should be specified in writing with estimated completion date as agreed to by County.
3. Assurance that unsettled claims will be settled.
4. Assurance that Work not complete and accepted will be completed without undue delay. These Punch List items must be completed within 30 days of Substantial Completion unless specifically agreed to by the County.
5. Transmittal of required Project construction records to Owner.
6. Proof that taxes, fees, and similar obligations have been paid.
7. Removal of temporary facilities and services.
8. Removal of surplus materials, rubbish, and similar elements.
9. Correction of any Defective Work and Acceptance of all Work, as set forth below.

## 20. Contract Modification

Subject to any applicable conditions and requirements regarding Contract Modifications and Changes in the Work set forth in the Technical Specifications or elsewhere in the Contract Documents, this Section specifies administrative and procedural requirements for handling and processing Contract modifications.

### A. MINOR CHANGES IN THE WORK:

Supplemental instructions authorizing minor changes in the Work, not involving an adjustment to the Contract Sum or Contract Time, will be issued by the County Project manager in writing.

ANY WORK COMPLETED WITHOUT PRIOR WRITTEN  
AUTHORIZATION WILL NOT BE PAID.

### B. COUNTY INITIATED CHANGE ORDER PROPOSAL REQUESTS

Proposed changes in the Work that will require adjustment to the Contract Sum or Contract Time will be issued by the County Project manager / County Engineer with a detailed description of the proposed change and supplemental or revised Drawings and Specifications, if necessary.

1. **Proposal requests issued by the County Project Manager** are for information only. Do not consider them as an instruction either to stop work in progress or to execute the proposed change.
2. Unless otherwise indicated in the proposal request, within ten (10) days of receipt of the proposal request, submit to the County Project manager / County Engineer for review an estimate of cost necessary to execute the proposed change.
3. Include a list of quantities of products required and unit costs, along with the total amount of purchases to be made. Where requested, furnish survey data to substantiate quantities.
4. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.

5. Include a statement indicating the effect the proposed change in the work will have on the Contract Time.
6. CONTRACTOR MUST RECEIVE PRIOR WRITTEN APPROVAL FROM THE COUNTY PRIOR TO PERFORMING THE WORK. ANY WORK COMPLETED WITHOUT PRIOR APPROVAL WILL NOT BE PAID.

C. CONTRACTOR-INITIATED CHANGE ORDER PROPOSAL REQUESTS:

When latent or unforeseen conditions require modifications to the Contract, the Contractor may propose changes by submitting a request for a change to the County Project Manager / County Engineer.

1. Include a statement outlining the reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and Contract Time.
2. Include a list of quantities of products required and unit costs along with the total amount of purchases to be made. Where requested, furnish survey data to substantiate quantities.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Include a statement indicating the effect the proposed change in the work will have on the Contract Time.
5. Comply with requirements in the technical specifications regarding PRODUCT REQUIREMENTS if the proposed change in the Work requires the substitution of one product or system for a product or system specified.
6. CONTRACTOR MUST RECEIVE PRIOR WRITTEN APPROVAL FROM THE COUNTY PRIOR TO PERFORMING THE WORK. ANY WORK COMPLETED WITHOUT PRIOR APPROVAL WILL NOT BE PAID.

D Change Order Procedures:

1. Upon the County Project Manager / County Engineer recommendation of a Change Order Proposal Request, the County will submit the proposed Change Order to the Atlantic County Board of Chosen Freeholders for review and approval.
2. No change order will be effective without the approval of the Board of Chosen Freeholders as provided in the Contract Documents.

**21. Left Blank**

**22. Final Cleaning:**

1. General: General cleaning during construction is required by the General Conditions and is included in Specifications.

2. **Cleaning:** Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturer's instructions.
3. **Removal of Protection:** Remove temporary protection and facilities installed for protection of the Work during construction.
4. **Compliance:** Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.
  - a. Where extra materials of value remaining after completion of associated work, have become the Owner's property, arrange for disposition of these materials as directed.

### **23. Completion and Acceptance of Work**

Subject to and without limitation upon any more specific requirements of the Technical Specifications and County Special Conditions below, the Work to be performed by the Contractor shall be deemed complete when ALL of the following have been performed or supplied by the Contractor to satisfaction of the County:

- A. The Work has, in the judgment of the County, been completed satisfactorily, and all components that require testing have been successfully tested in all respects according to the Contract Documents;
- B. The Work is fully completed, operational and ready for use by the County in all respects in accordance with the Contract Documents, including correction of all punch list items and any other Defective or Unauthorized Work; and
- C. The Contractor has, to the County's satisfaction, executed and delivered to the County or its designated representative all documents, permits, certificates of completion, proofs of compliance, release of claims, surety consents and any other documents the County deems necessary assure compliance with these specifications.

### **24. Defective or Unauthorized Work**

Any portion of the Work, including any materials, goods, equipment, labor, services or combination thereof which in the judgment of the County Project Manager / County Engineer, fails to meet the requirements of the Contract Documents, whether the result of poor workmanship, use of defective materials, damage through carelessness or any other cause, shall be considered as Defective Work. Any Work including any materials, goods, equipment, labor, services or combination thereof which in the judgment of the County is not authorized or required by the Contract Documents shall be classified as Unauthorized Work.

Any Work, including materials, goods, equipment, labor, services or combination thereof which in the judgment of the County or in the judgment of any Manufacturer, supplier or other entity that is intended to provide a warranty pertaining to the Work or any component thereof, fails to meet the requirements of the Contract Documents, including but not limited to any requirement necessary for the issuance of a required warranty, whether the result of poor workmanship, use of defective materials, damage through carelessness or any other cause, shall be considered as Defective Work.

## **25. Removal and Correction of Defective or Unauthorized Work**

A. Any Defective or Unauthorized Work performed by the Contractor, regardless of whether observed before or after completion of the Work and whether or not fabricated, installed or completed, shall be removed immediately and replaced by the Contractor with Work and materials which shall conform to the specifications, or shall be otherwise corrected and remedied in an acceptable manner authorized by the County or its designee. The Contractor shall bear all costs of correcting, removing or replacing such rejected Work, including compensation to the County for the County's additional costs made necessary thereby.

B. This clause shall have full effect regardless of the fact that the Defective or Unauthorized Work may have been performed, or the defective materials used, with the actual or implied knowledge of the County. The fact that the County or its designee may have previously overlooked such defective work shall not constitute an acceptance of any part of it by the County.

C. If, within one (1) year after the date of completion of the Work or designated portion thereof, or within such longer period of time as may be prescribed by law or by the terms of any applicable warranty required by the Contract Documents, or within any such longer period of time that may be set forth elsewhere in the Contract Documents, any of the Work is found to be defective or not in accordance with the Contract Documents, the Contractor shall correct it promptly after receipt of a written notice from the County to do so. Corrective work shall be completed expeditiously and within 30 days of the County's written notice, unless the County extends the time for completion of such repairs. Acceptance of the Work, or portions thereof shall not serve as waiver of the Contractor's obligation to remove, repair and replace Defective Work, unless the County has previously given the Contractor a specific and explicit written acceptance of such Defective Work condition. This obligation shall survive termination of the Contract. The County shall give such notice promptly after discovery of the condition.

D. Upon failure of the Contractor to immediately correct, remove or replace Defective or Unauthorized Work within the specified time limit, or to immediately comply with any order of the County made under the provisions of this Section, the County shall have authority to cause such Defective or Unauthorized Work to be corrected or removed and replaced, and the costs thereof, as well as those incurred in storing any rejected materials, shall be deducted from any monies due or to become due the Contractor. If the payments then or thereafter due the Contractor are not sufficient to cover such costs, the Contractor shall pay the difference to the County. The County reserves the right, should Defective or Unauthorized Work or materials used by or on the part of the Contractor be discovered, either before or after the Project has been accepted, or even after Final Payment has been made, to withhold from the Contractor's payments, or, if not payments remain due and owing to claim and recover by process of law such sums as may be sufficient to correct, remove or replace the Defective or Unauthorized Work or materials, at the Contractor's expense.

## **Incomplete / Punchlist Work**

**Any Work included on a Punchlist shall be treated as Defective Work and shall be corrected by the Contractor, within 30 days after issuance of the Punchlist as set forth in the preceding section.**

### **26. Public Convenience and Safety; Avoidance of Damage to County Property and Property of Others**

The safety, protection and convenience of the public and adjacent residents are of primary importance and shall be provided for by the Contractor in an adequate and satisfactory manner.

- A. Precautions shall be exercised at all times for the protection of persons and property. The safety provisions of applicable laws, rules and regulations, building and construction codes, shall be observed. The work site and all machinery, equipment and other hazards of any character associated with the Contractor's work shall be safeguarded by the Contractor.
- B. If any operation, practice or condition during the course of the Work is unsafe or is deemed by the County to be unsafe, the Contractor shall immediately take corrective action. Where any operation, practice or condition endangers persons or property, it shall be immediately discontinued by the Contractor and adequate remedial action taken before the affected part of the Work is resumed.
- C. All work shall be performed in a professional and workmanlike manner, with due regard to avoiding damage to County property and to the property of others. Should the Contractor's work cause any damage to County property or property of others, the Contractor shall promptly repair, restore or replace such damaged property to the satisfaction of the County.

### **27. Accident Reports**

If death or injuries to workers or other persons, or damage to property is caused by or occurs in connection with the Contractor's Work, the accident shall be reported immediately by the Contractor to the County, and to the Contractor's insurance carrier, with full details and statements of witnesses (if any). If a claim is made by anyone against the Contractor or any subcontractor on account of any accident, the Contractor shall promptly report the facts in writing to the County, giving full details of the claim and the Contractor's response thereto.

### **28. County not Responsible for control of Contractors, for Construction Means and Methods**

The County shall not be responsible for and shall not have control or charge of construction means, methods, techniques, sequences or procedures, or the safety precautions and programs in connection with the Work, and the County shall not be responsible for the Contractor's failure to carry out the Work in accordance with the Contract Documents. Further, the County shall not be responsible in any way for the acts or omissions of the Contractor, and any subcontractors, or any of their agents or employees, or any other persons performing any of the Work.



## **29. Independent Contractor**

The Contractor shall be deemed and considered an Independent Contractor in respect to the Work covered by this Contract, and shall not be deemed to be an agent, partner or joint venture of the County. The Contractor shall assume all responsibility and expense for the Contractor's Work, and for all risks and casualties of every description arising out of the Contractor's performance of the Work.

## **30. Indemnification**

- A. Contractor agrees to protect, defend, indemnify and save harmless the County and its officers, directors, employees, agents, and other consultants of each and any of them from and against all claims, costs, losses and damages, fines, penalties and assessments (including but not limited to all fees and charges of engineers, architects, attorneys and other professionals and all court or arbitration or other dispute resolution costs) arising out of or resulting from any and all losses, claims, actions, costs, expenses, judgment, subrogation or other expenses by reason of any real or alleged injury or damage to the person or property of others arising out of or incidental to the Contractor's performance of the Work as set forth in the Contract Documents.
- B. If it becomes necessary for the Contractor, either as principal or by agent or employee, to enter upon the premises or property of the County, in order to construct, erect, inspect, make delivery or remove property hereunder, the Contractor hereby covenants and agrees to be responsible for, and to indemnify and save harmless the County from the payment of all sums of money by reason of any accidents, injuries damages or hurt that may happen or occur upon or about such work and all fines, penalties and loss incurred for or by reason of the violation of any municipal or County ordinance, regulations, or the laws of the State, or the United States, arising from or related to the Contractor's performance of its Work.
- C. The Contractor shall indemnify and save harmless the County against any and all claims for royalty, patent infringements or suits for information thereon which may be involved in the manufacture or use of the item to be furnished herein.
- D. All representations, indemnifications, warranties and guarantees made in, required by or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment.

## **31. Right to Audit Clause**

The Contractor shall keep and maintain proper and adequate books, records and accounts accurately reflecting all costs and amounts billed to County with regard to this Project. County, its employees, officers, or representatives shall have the right upon written request and reasonable notice, to inspect and examine all books and records related to the Contractor's books and records specific to the agreement. Such records shall be retained by Contractor for at least seven (7) years. In no event shall books and records be disposed of or destroyed prior to seven (7) years or during any dispute or claim between County and Contractor with regard to this agreement.

### 32. Termination of Contract

- A. **Termination for Convenience:** The County may terminate a Contract, in whole or in part, without showing cause upon giving written notice to the Contractor, when the County determines that termination is in the best interest of the County. The County shall pay all costs incurred by the Contractor up to the date of termination, less any credits or setoffs that are due and owing to the County, as specified by the Contract Documents. **The Contractor will not be reimbursed for any anticipatory profits, or for any costs or expenses which have not been incurred for materials delivered or work performed for the County, as of the date of termination.**
- B. **Termination by the Owner for Cause:** Without limitation upon any other right or remedy that may exist or be available to the County under the Contract Documents or generally as a matter of law or in equity, the County may terminate the Contract if the Contractor:
1. Persistently or repeatedly refused or fails to supply enough skilled workers or proper materials;
  2. Fails to make payment to subcontractors for materials or labor in accordance with the respective agreements between the contractor and the subcontractor;
  3. Persistently disregards laws, ordinances, or rules, regulations or orders of a public authority having jurisdiction; or
  4. Otherwise is guilty of substantial breach of a provision of the contract documents.

The County shall pay all costs incurred by the Contractor up to the date of termination, less any credits or setoffs that are due and owing to the County, as specified by the Contract Documents. The Contractor will not be reimbursed for any anticipatory profits, or for any costs or expenses which have not been incurred for materials delivered or work performed for the County, as of the date of termination.

- C. **Notice of Termination.** When any of the above reasons exists, the County may terminate the contract after giving the Contractor and the Contractor's surety, if any, five (5) days' written notice of the Termination.

### 33. Waiver.

The failure of the County to enforce any of the terms and conditions of the Contract Documents shall not be deemed to be an express or implied waiver of any such requirements, nor shall it be deemed a waiver of such requirements or any other requirements in any subsequent circumstances, or a waiver of the right to thereafter claim damages for any deficiencies resulting from any misrepresentation, breach of warranty, or other failure to fulfill any requirements of the Contract Documents.

### 34. Severability.

Should any provision to the Contract Documents be held invalid or unenforceable by any court of competent jurisdiction, the remaining provisions shall remain in full force and effect, to the fullest extent possible and necessary to accomplish the overall intent and purposes of the Contract Documents. . The inapplicability or unenforceability of any provision of the Contract Documents shall not limit or impair the operation or validity of any other provision of the Contract Documents.

### **35. Truck Routes**

The County of Atlantic requires that Contractor(s) and all subcontractors shall use major highways and County roads for trucking purposes in connection with this project. Therefore, Contractor shall anticipate this requirement while formulating his/her bid proposal.

After opening of Bids, the low Bidders will be required to submit preferred truck routes using major highways and County roads. The County will review the routes and either approve or mandate changes. The Bidder will be required to follow these routes thereafter. Any changes shall be approved in writing by the County Engineer, or his designee.

### **36. Ethical Standards**

County employees are prohibited by policy from accepting gifts from vendors. Consequently, all bidder should be aware and should make all employees and representatives aware that they may not offer any item or material, irrespective of the perceived value of the item or material, to any County employee. Items and materials that have been or are intended to be discarded by the bidder shall not be offered or given to an employee. Bidders must report immediately any employee who approaches the bidder, the bidder's employees or representatives and solicits, requests or suggests in any way that the bidder provide something as a gift to the employee.

### **37. Warranties**

Without limitation upon any other warranty, representation warranty or duty imposed upon or made by the Contractor in the Contract Documents, the Contract hereby warrants:

A. that this Contractor has not been solicited or secured, directly or indirectly, in a manner contrary to the laws of the State of New Jersey and that said laws have not been violated and shall not be violated as they relate to the procurement or the performance of this Contract by any conduct, including the paying or giving of any fee, commission, compensation, gift, gratuity or consideration of any kind, directly or indirectly, to any County, employee, officer or officials.

B. that the Contractor, for itself and its subcontractors, is qualified by training and experience to perform the services in accordance with all of the terms, conditions and requirements of the Contract Documents .

C. that the Contractor is ready, willing and able to perform all services in the timeframe and as required by this Contract, and that he and/or his subcontractors performing the work presently hold in good standing any and all necessary licenses for the lawful performance of the Project within the State of New Jersey.

### **38. Warranty against Defects.**

In addition to any other warranty, the Contractor further agrees to extend to the County a one year warranty against defects in material and workmanship of the materials and equipment herein provided to the County, which shall commence upon final Acceptance of the Work by the County

### 39. Default

Without limitation upon any duty or obligation imposed upon the Contractor by the Contract Documents, a Default by the Contractor shall include the following:

- A. Failure by the Contractor to begin work under the Contract within the time specified in the Notice to Proceed, or otherwise according to the Contract;
- B. Failure by the contractor to perform the Work with sufficient workmen, equipment or materials to insure completion of the Work in accordance with the Contract;
- C. Violation by the Contractor of any of the conditions or covenants of the Contract, the Documents, or any order of the County authorized therein, and failure to execute the same in good faith or in accordance with the terms thereof;
- D. Unnecessary, unreasonable or negligent delay by the Contractor in performance of the Contract;
- E. Abandonment or discontinuation by the Contractor of performance of the Work without approval of the County, or failure to resume Work which has been discontinued within a reasonable time after notice to do so;
- F. Failure or refusal by the Contractor to remove materials or perform anew any Work rejected as defective or unsatisfactory;
- G. Failure by the Contractor to complete the Work within the time specified in the Contract, or within the extended time as otherwise provided according to the Contract;
- H. Insolvency or bankruptcy of the Contractor, or commission by him of any act of insolvency or bankruptcy;
- I. Failure by the Contractor to protect, repair or make good any damage or injury to property;
- J. Failure by the Contractor, for any cause whatsoever, to carry on the Work in an acceptable manner;
- K. Conviction of any principal of Contractor of any crime under the laws of the State of New Jersey which, if committed by a public official, would disqualify that person from public employment;
- L. Failure of Contractor to pay its subcontractors and/or suppliers, or any governmental authority any sums that are legally due and owing that are related to provision of goods or services related to this project.
- M. Assignment or subcontracting of the work or any part thereof or any monies due hereunder that is not authorized as set forth in this Contract.

If the Contractor becomes in Default and fails, refuses or is otherwise unable to cure such default within a time frame that ensures continuous and uninterrupted provisions of all required Work to the County as set forth in the Contract Documents , or shall otherwise fail to comply with any of the terms, conditions, provisions or stipulations of this Contract , according to the intent and meaning thereof, then the COUNTY shall be permitted to pursue any or all remedies that may be available under the Contract Documents, or at law or in equity,

including but not limited to an action for specific performance, termination of the contract, or any action for damages arising from the Contractor's default.

Notwithstanding the foregoing, the County and Contractor shall seek to mediate claims and disputes, when resort to litigation is not authorized, as set forth in the Contract Documents.

The commencement of one or more remedy shall not preclude the County from pursuit of any other available remedy.

Should the County fail to make any payment when such payment is due in accordance with the Contract Documents, or otherwise fail to perform any material duty or obligation imposed upon the County by the Contract Documents, the Contractor shall be permitted to proceed with all remedies that may be available at law or in equity, provided that Contractor shall first provide the County with written notice of the circumstances that are alleged to constitute a default and a 30 day opportunity to cure.

#### **40. Continuing the Work**

During the pendency of any dispute or disagreement, the Contractor shall carry on the Work and adhere to the progress schedule, and shall not abandon, slow down or terminate its work, and no Work shall be delayed or postponed pending resolution of any disputes or disagreements, unless this Agreement is Terminated or such deviation from the Work or Work Schedule is directed by the County.

#### **41. Liquidated Damages**

Without limitation upon any other provision regarding liquidated damages in the Contract Documents, all amounts set forth in the Contract Documents as liquidated damages shall be a per day charge for every calendar day that the Contractor is in default in completing the Work or any designated portion thereof in excess of the number of days prescribed. The daily sums herein contracted to be paid by the Contractor to the County for any default or delay in the completion of this Work or portions of Services are stipulated to be not a penalty, but rather, liquidated compensation for damages which the County will suffer by reason of such default, loss of use of property, interest on monies borrowed, increased administrative and engineering costs, and other tangible and intangible losses.

The County may deduct the sum of liquidated damages from any monies due or that become due the Contractor under the Contract. If such monies are insufficient, the Contractor or his surety or sureties shall pay to the County any deficiency in such monies within thirty (30) calendar days. Assessment of Liquidated Damages are not intended and shall not be an exclusive, and are in addition to any other rights and remedies provided by law or under this Contract.

#### **42. Mediations Provisions for Construction Contracts**

Either party to this contract may demand that a dispute concerning whether a party has failed to make payments pursuant to the provisions of N.J.S.A. 2A:30A-1 et. seq., or perform Work required hereunder be submitted to non-binding mediation.

If mediation is demanded, it shall be demanded consistent with the county's provisions concerning Alternative Dispute Resolution for contracts to which N.J.S.A. 40A:11-50 is applicable. Those provisions are set forth below.

Alternative Dispute Resolution shall not be available with regard to disputes concerning the bid solicitation or award process or the formation of contracts or subcontracts entered into pursuant to the New Jersey Local Public Contracts Law. In addition, Alternative Dispute Resolution shall not prevent either party from pursuing any other remedy, including but not limited to injunctive relief or an action for specific performance, in the event that emergent circumstances exist or when necessary to protect the health, safety or welfare of the public.

The County's Alternative Dispute Resolution procedure is as follows:

- A. **Controversies and Claims Subject to Mediation.** Except as specified above, If a dispute between County and Contractor arises during the course of the contract, the parties will make a good faith effort to resolve the dispute through non-binding mediation prior to resorting to litigation,
- B. **Contract Performance Pending Mediation.** During mediation proceedings, Contractor shall continue to perform, and County shall continue to make payments pursuant to the terms of the contract.
- C. **When Mediation May be Demanded.** Prior to either party demanding mediation, the aggrieved party shall attempt to resolve the problem directly with the other party.

**In the event that the parties are unable to directly resolve a problem within 10 days of the first notice of the dispute,** the aggrieved party shall promptly submit a written notice of dispute to the other party. The other party shall respond in writing.

Demand for mediation of any claim shall not be made until the earlier of the following:

- (i) Five (5) business days after the other party has provided its written response to the aggrieved party's notice of dispute;
- (ii) Thirty (30) days have passed after submission of the original, written claim by the aggrieved party and the other party has not responded.

If the written response from the other party does not resolve the dispute, the aggrieved party shall have thirty (30) days from the delivery of the other party's response to file a demand for

mediation. If the aggrieved party fails to do so, it shall be deemed to have waived its right pursuant to this contract to demand Alternative Dispute Resolution.

A party who files a “Notice of Demand for Mediation” must assert in the demand all claims then known to that party for which mediation May be demanded. If a party fails to include a claim because of excusable neglect, or when a claim has matured or been acquired subsequently, the mediator or mediators may permit amendments.

- D. **Procedure to Request Mediation.** Either party may demand mediation by written notice to the other party. The written notice shall contain at minimum 1) a brief statement of the nature of the dispute, and 2) the name, address and the phone number of that party’s designated representative for purposes of mediation. The other party shall designate its representative for mediation in writing no later than five (5) business days after receipt of the demand for mediation. The respective designees shall thereupon promptly, and with due regard for the need for timely action, choose a mediator. If the parties cannot agree on a mediator, they shall choose a reputable mediation firm.

Any mediation firm so chosen shall present a list of at least five (5) proposed mediators to the parties and shall provide the parties with a summary of each person’s qualifications to serve as mediator. Each party shall rank the proposed mediators in order of preference.

The fifth and any lower ranked persons on each list will be excluded from further consideration.

The chosen mediator shall be the remaining person who is the combined highest ranking mediator on both preference lists, after deleting all excluded persons.

In the event of a tie, the mediator shall be chosen by lot.

- E. **Procedures at Mediation.** The mediation shall be conducted in such reasonable and efficient manner as may be agreed between the parties and the mediator or, if the parties cannot agree, as may be determined by the mediator.

The parties will not be bound by the Rules of Evidence in presenting their positions before the mediator.

- F. **Cost of Mediation.** Each party will bear its own cost of participation in the mediation. The mediator’s fee will be divided equally between the parties.

- G. **Failure of Mediation.** If a good faith effort to resolve the dispute through mediation is unsuccessful within 60 days after the initial request for mediation, then either party may terminate the mediation by written notice to the mediator and to the other party. Thereafter, either party may submit the dispute to the Superior court of New Jersey, Atlantic County, for adjudication, which court shall have exclusive original jurisdiction over the dispute.

During the performance of the Work, either party to this contract may demand that a dispute concerning whether a party has failed to make payments pursuant to the provisions of N.J.S.A. 2A:30A-1 et. seq., or perform Work required hereunder be submitted to non-binding mediation.

If mediation is demanded, it shall be demanded consistent with the county's provisions concerning Alternative Dispute Resolution for contracts to which N.J.S.A. 40A:11-50 is applicable. Those provisions are set forth below.

Alternative Dispute Resolution shall not be available with regard to disputes concerning the bid solicitation or award process or the formation of contracts or subcontracts entered into pursuant to the New Jersey Local Public Contracts Law. In addition, Alternative Dispute Resolution shall not prevent either party from pursuing any other remedy, including but not limited to injunctive relief or an action for specific performance, in the event that emergent circumstances exist or when necessary to protect the health, safety or welfare of the public.

**43. Safety**

- A. The Contractor is to observe all PEOSH guidelines during the construction, which shall include proper posting of all construction areas and maintaining acceptable indoor air quality standards by reducing excessive dust, noise, and odors, etc. whenever possible. The contractor is to notify the facility coordinator whenever these conditions cannot be met so that the facility may arrange for alternate methods to ensure the safety of the residents and staff.

**44. Removal of Debris**

- A. The Contractor shall remove all debris and rubbish from the work daily, in accordance with applicable codes and ordinances, and to dispose of same legally off the property. Debris and rubbish shall not be allowed to accumulate.
- B. All products of removal not scheduled to be reused, or turned over to the County, shall become the property of the Contractor and shall be removed from the site.
- C. If applicable, any existing locks will be removed and returned to the owner.

**45. Scope of Work**

- A. This project shall include all necessary labor, materials, tools, and appliances to complete the construction in a first quality, workmanlike manner.



#### **46. Project Conditions/Site Conditions**

- A. Field Measurements: Verify actual measurements/openings by field measurements before fabrication; show recorded measurements on shop drawings. Coordinate field measurements, fabrication schedule with construction progress to avoid construction delays.

#### **47. Examination**

- A. Site Verification of Conditions: Verify conditions are acceptable for product installation in accordance with manufacturer's instructions.

#### **48. Submittals**

- A. General:
  - 1) Upon request show elevations and sections.
  - 2) Upon request show listing of opening descriptions including locations, material thicknesses, and anchors.
  - 3) Upon request show location and details of all openings.
- B. Product Data: Submit product data as requested.
- C. Substitutions: Whenever substitute products are to be considered, supporting technical data, samples, and test reports must be submitted ten (10) working days prior to bid date in order to make a valid comparison.
- D. Shop Drawings: Submit shop drawings showing layout, profiles, and product components, including anchorage, accessories, and finish colors.
- E. Samples: Submit verification samples for colors. Minimum 2-1/2 inch by 3 inch (61 mm by 73 mm) samples of actual material indicating full color range expected in installed system.
- F. Quality Assurance / Control Submittals:
  - 1) Test Reports: Submit certified test reports showing compliance with specified performance characteristics and physical properties.
  - 2) Installer Qualification Data: Submit installer qualification data.

#### **49. Site Storage and Protection of Materials**

- A. The contractor responsible for installation shall remove wraps or covers from materials delivery at the building site. The contractor responsible for installation shall ensure that any scratches or disfigurement

caused in shipping or handling are promptly sanded smooth, cleaned, and touched up (with a compatible rust inhibitive Direct to Metal (DTM) primer if required.)

- B. The contractor responsible for installation shall ensure that materials are properly stored on planks or dunnage in a dry location. Materials shall be covered to protect them from damage but in such a manner as to permit air circulation.

**50. Delivery & Inspection**

- A. Equipment and material shall be delivered F.O.B. destination, to the destination of the project site outlined in this bid, or the location specified by the Director of Facilities or his designee.
- B. The material(s) and equipment(s) shall be subject to inspection and approval by the Division Director of Facilities Management or his designee.
- C. Successful vendor will notify the County 48 hours in advance of delivery by calling the appropriate contact, as directed by County.

**51. Preparation**

- A. Adjacent Surfaces Protection: Protect adjacent work areas and finish surfaces from damage during product installation.

**52. Special Provisions Regarding “Differing Site Conditions”**

A. If the Contractor encounters differing site conditions during the progress of the Work, the Contractor shall promptly notify the County in writing of the specific differing site conditions encountered before the site is further disturbed and before any additional work is performed in the location that is impacted by the differing site conditions.

B. Upon receipt of a Differing Site Conditions Notice in accordance with paragraph a above, of this subsection, or upon the County otherwise learning of differing site conditions, the County shall promptly undertake an investigation to determine whether differing site conditions are present. If the County determines different site conditions exist and may result in additional costs or delays, the County shall provide prompt written notice to the Contractor containing directions on how to proceed.

C. The County shall make a fair and equitable adjustment to the contract price and contract completion date for increased costs and delays resulting from the agreed upon differing site conditions encountered by the contractor. If both parties agree that the contracting unit's investigation and directions decrease the contractor's costs or time of performance, the contracting unit shall be entitled to a fair and equitable downward adjustment of the contract price or time of performance.

D. If the County determines that there are no differing site conditions present that would result in additional costs or delays, the County shall notify the contractor, in writing, and the Contractor shall resume performance of the Work. In such event, the Contractor shall be entitled to pursue a Differing Site Conditions claim against the County for additional compensation or time attributable to the alleged differing site conditions.

E. Execution of the contract by the contractor shall constitute a representation that the contractor has visited the site and has become generally familiar with the local conditions under which the work is to be performed.

F. As used in this subsection, "differing site conditions" mean physical conditions at the contract work site that are subsurface or otherwise concealed and which differ materially from those indicated in the contract documents or are of such an unusual nature that the conditions differ materially from those ordinarily encountered and generally recognized as inherent in the work of the character provided for in the contract.

### **53. Special Provisions Regarding Suspension of Work**

A. In the event that the County determines that it is necessary to suspended performance of all or any portion of the Work for a period of time lasting more than 10 calendar days, the County shall give prompt written notice of the suspension to the Contractor.

B. If the performance of all or any portion of the Work is suspended by the County for more than 10 calendar days due to no fault of the Contractor or as a consequence of an occurrence beyond the County's control , the Contractor shall be entitled to compensation for any resultant delay to the Work completion date or additional Contractor expenses, and to an extension of time, provided that, to the extent feasible, the Contractor, within 10 calendar days following the conclusion of the suspension, notifies the County, in writing, of the nature and extent of the suspension of work.

C. The notice a Work Suspension Claim shall include available supporting information, which information may thereafter be supplemented by the Contractor as needed and as may be reasonably requested by the County.

D. Whenever a work suspension exceeds 60 days, upon seven days' written notice, either party' shall have the option to terminate the contract for cause and to be fairly and equitably compensated therefor

E. Upon receipt of the Contractor's suspension of work notice in accordance with paragraph B of this subsection, the County shall promptly evaluate the Contractor's notice and promptly advise the Contractor of its determination on how to proceed in writing.

F. If the County determines that the contractor is entitled to additional compensation or time, the County shall make a fair and equitable upward adjustment to the contract price and contract completion date.

G. If the County determines that the Contractor is not entitled to additional compensation or time, the contractor shall proceed with the performance of the contract work, and shall be entitled to pursue a suspension of work claim against the County for additional compensation or time attributable to the suspension.

H. Failure of the contractor to provide timely notice of a suspension of work shall result in a waiver of a claim if the contracting unit can prove by clear and convincing evidence that the lack of notice or delayed notice by the contractor actually prejudiced the contracting unit's ability to adequately investigate and defend against the claim.

#### **54. Special Provisions Regarding Changes In The Character Of The Work**

A. If the Contractor believes that the contracting unit has directed the Contractor to undertake a material change to the Work, the Contractor shall notify the County in writing of such Change Of Character to the Work

B. The contractor shall continue to perform all work on the project that is not the subject of the notice of a Change of Character to the Work.

C. Upon receipt of the contractor's change in character notice in accordance with paragraph (A) of this subsection, the County shall promptly evaluate the contractor's notice and promptly advise the contractor of its determination on how to proceed in writing.

D. If the County determines that a change to the contractor's work caused or directed by the County materially changes the character of any aspect of the Work, the County shall make a fair and equitable upward adjustment to the contract price and contract completion date.

E. The basis for any such price adjustment shall be the difference between the cost of performance of the work as planned at the time of contracting and the actual cost of such work as a result of its change in character, or as otherwise mutually agreed upon by the contractor and the County to the contractor performing the Changed Character work.

F. If the County determines that the contractor is not entitled to additional compensation or time, the contractor shall continue the performance of all contract work, and shall be entitled to pursue a claim against the contracting unit for additional compensation or time attributable to the alleged material change.

G. As used in this subsection, "material change" means a character change which increases or decreases the contractor's cost of performing the work, increases or decreases' the amount of time by which the Contractor completes the work in relation to the contractually required completion date, or both.

#### **55. Special Provisions Regarding Changes In Quantities:**

A. The County may increase or decrease the quantity of Work to be performed by the contractor..

i. If the quantity of a pay item is cumulatively increased or decreased by 20 percent or less from the bid proposal quantity, the quantity change shall be considered a minor change in quantity.

ii. If the quantity of a pay item is increased or decreased by more than 20 percent from the bid proposal quantity, the quantity change shall be considered a major change in quantity.

B. For any minor change in quantity, the County shall make payment for the quantity of the pay item performed at the bid price for the pay item.

C. For a major increase in quantity, the County or contractor may request to renegotiate the price for the quantity in excess of 120 percent of the bid proposal quantity. If a mutual agreement cannot be reached on a negotiated price for a major quantity increase, the County shall pay the actual costs plus an additional 5 percent for overhead and an additional 5 percent for profit.

D. In the event of a major decrease in quantity, the County or contractor may request to renegotiate the price for the quantity of work performed. If a mutual agreement cannot be reached on a negotiated price for a major quantity decrease, the County shall pay the actual costs plus an additional 5 percent for overhead and an additional 5 percent for profit,

E. As used in this subsection, the term "bid proposal quantity" means the quantity indicated in the bid proposal less the quantities designated in the project plans as "if and where directed."

55. Interpretation of documents

In the event of any inconsistency, conflict or question regarding priority, application or interpretation of provisions in these general conditions, the technical specifications plans or any other contract documents, the provision or interpretation thereof which afford the greatest protection of County interests & which assures contractor performance shall be deemed controlling.

# **TECHNICAL SPECIFICATIONS**

SPECIFICATION INDEX

**DIVISION 1 – GENERAL REQUIREMENTS**

011000	Project Summary
012100	Allowances
012200	Unit Prices
012600	Contract Modification Procedures
012900	Payment Procedures
013100	Project Management and Coordination
013200	Construction Progress Documentation
013233	Photographic Documentation
013300	Submittal Procedures
014000	Quality Requirements
014200	References
015000	Temporary Facilities and Controls
015001	Scaffolding, Exterior & Interior Protects
016000	Product Requirements
017300	Execution
017329	Cutting and Patching
017419	Construction Waste Management and Disposal
017700	Closeout Procedures
017839	Project Record Documents
018000	Construction Schedules and Milestones

**DIVISION 2 — SITE**

020700	Selective Demolition
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**DIVISION 3 — CONCRETE**

033000	Concrete Work
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**DIVISION 4 – MASONRY- NOT USED**

**DIVISION 5 — METALS**

055000	Miscellaneous Metal Fabricators
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**DIVISION 6 — WOOD AND PLASTIC**

061000	Rough Carpentry
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**DIVISION 7 — THERMAL AND MOISTURE PROTECTION**

072100	Fiberglass Blowing Insulation
072119	Foamed in Place Insulation
072500	Weather Barrier
074600	Fiber Cement Siding, Boards and Trim
078400	Firestopping
079000	Joint Sealers

**DIVISION 8 — DOORS AND WINDOWS**

081120	Hollow Metal Door
087000	Finish Hardware

**DIVISION 9 — FINISHES**

088000	Glass and Glazing
092000	Gypsum Dry Wall
097050	Resinous Floor Coating
099000	Painting

**DIVISION 10 AND 11 — NOT USED**

**DIVISION 12 — SPECIALTIES**

124900	Vinyl Sheet Windows
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**DIVISION 13 AND 14 — NOT USED**

**DIVISION 15 — MECHANICAL AND PLUMBING**

15010	Basic Mechanical Requirements.
15051	Common Work Results for HVAC.
15300	Refrigerant piping.
15827	Variable Refrigerant Flow Systems.

**DIVISION 16 — ELECTRICAL**

16010	Electrical General Requirements
16051	Common Work Results for Electrical

**END OF SPECIFICATION INDEX**



**DRAWING INDEX**

**ARCHITECTURAL DRAWINGS**

- A-0 Cover.
- A-0.1 Architectural Notes.
- A-1 Location Plan, Existing and New Floor Plans, and Notes.
- A-2 Existing and New Ceiling Plans, and Notes.
- A-3 Interior Elevations and Details
- A-4 Section and Details.
- A-5 Exterior Elevations and Notes.
- A-6 Exterior Elevation and Notes.

**MECHANICAL DRAWINGS**

- M-0 Mechanical General Notes, Legend, Abbreviations, Symbols, and Key Plan
- M-1 Mechanical Plan, Piping Detail, and Schedules.

**ELECTRICAL DRAWINGS**

- E-0 Electrical General, Notes, Legend, Symbols, Abbreviations, and Key Plan.
- E-1 Electrical Plan.
- E-2 Electrical Heat Pump Wiring Diagram

**END OF DRAWING INDEX**

PART 1 - GENERAL

1.1 PROJECT

- A. Title: Lenape Park East – Catering Hall Deck Renovations
- B. Project Location: Lenape Park East, Hamilton Township, Mays Landing, NJ
- C. Owner: County of Atlantic
- D. Owner's Representative: Ms. Leslie A. MacDonnell
- E. Architect: Cristina Buendicho Architect
- F. MEP Engineer: Concord Engineering
- G. This Project will be performed under a single prime contract.

1.2 SUMMARY

- A. This Section includes the following:
  - 1. Work covered by the Contract Documents.
  - 2. Work under other contracts.
  - 3. Use of premises.
  - 4. Owner's occupancy requirements.
  - 5. Phasing of project.
  - 6. Project schedule.
  - 7. Warranties.
  - 8. Specification formats and conventions.
  - 9. County Holiday Schedule & Park Events

### 1.2.1. WORK COVERED BY CONTRACT DOCUMENTS

The work consists of the following:

#### A. Demolition:

Includes, but is not limited to, the removal of the existing cement board ceiling for the installation of the spray foam insulation in between the roof rafters; partial removal of the drywall ceiling in the basement for the installation of blow-in insulation below the deck floor; the opening of holes or partial removal the inside wall siding for the installation of blow-in insulation in the exterior walls; the removal of the exterior door for the installation of a new door in a new opening and additional miscellaneous work as indicated on the contract documents.

#### B. New Work:

Includes, but is not limited to, the installation of spray foam insulation in between the roof rafters, and the installation of new cement board deck ceiling to match existing; the installation of blow-in insulation below the deck floor, and the installation of the sections of the drywall ceiling in the basement, the painting of the entire basement drywall ceiling below the deck; the installation of blow-in insulation in the exterior walls, and the installation of cement board trim to hide the holes done for the insulation installation; the installation of a single hollow metal exterior door, the installation of studs, insulation, plywood and siding to fill the existing door opening; the replacement of the existing interior door closer arms with new hold open arms; the grinding and preparation of existing deck floor, and the installation of new deck coating system; the installation of swing gates for the scuppers, the supply and installation of new vinyl sheet windows to be installed with snaps on new trim, storage bags for the new windows, new strapping for the existing vinyl sheet zip windows with new location for the strap anchors in the interior of the deck; the supply and installation of one outdoor heat pump and four indoor mini-split air conditioned & heat pump units, the installation of a new elevated concrete platform for the outdoor unit, the installation of new ceiling fans with lights, miscellaneous mechanical and electrical; and all work as indicated on the contract documents to provide a complete finish work.

### 1.2.2. WORK UNDER OTHER CONTRACTS

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

### 1.2.3. USE OF PREMISES

- A. General: Contractor shall have limited use of premises for construction operations.
- B. Use of Site: Limit use of premises to work in areas in the scope of work (SOW). Do not disturb portions of Project site beyond SOW areas.
- C. Nonsmoking Building: Smoking is not permitted within the building or within 25 feet (8 m) of entrances, operable windows, or outdoor air intakes.

### 1.2.4. OWNER'S OCCUPANCY REQUIREMENTS

- A. Owner Occupancy: Allow for Owner occupancy of project site, building and the use of same by the public during construction period, with the exception of areas under construction. Cooperate with Owner during construction operations to minimize conflicts and facilitate both Owner and public usage. Perform the Work so as not to interfere with Owner's operations. Maintain existing exits, unless otherwise indicated.
- B. Use of Existing Building: Maintain existing building in a weather tight condition throughout construction period. Repair damage caused by construction Operations. Protect building and its occupants during construction period.
- C. Driveways and Entrances: Keep driveways, loading areas, and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and authorities having jurisdiction.

### 1.2.5. PHASING OF PROJECT

- A. Contractor shall be responsible to maintain unencumbered operation of the complex's facilities, adjacent streets, walkways and parking areas, throughout the entirety of the project.
- B. The work shall be conducted to provide the least possible interference to the activities of the Owner's personnel and the public.
- C. Required county building power disruption shall occur only during non-occupied periods of site and building occupancy. Any major service switch-over shall be planned to occur over a three day holiday weekend in which the building will be

unoccupied. Coordinate all building power disruptions with Owner and Architect prior to commencement of work.

- D. Schedule deliveries to minimize use of driveways, entrances, and to minimize space and time requirements for storage of materials and equipment on-site.

#### 1.2.6. PROJECT SCHEDULE

***Any project schedule milestones that are not met may result in the County instituting liquidated damages for each consecutive calendar day (CCD) until the milestone is reached.***

- A. This construction project MUST to be completed and closed out within one-hundred & five (105) consecutive calendar days (CCD) after issuance of Notice to Proceed/Contract Execution Date, as determined at the preconstruction kick-off meeting (Project Start Date). This 105 CCD schedule includes the following milestone deadlines:
1. Delivery of all Submittals to Architect/ Engineer within **fourteen (14) CCD of Project Start Date.**
  2. Substantial Completion shall occur no later than fifty (50) CCD from project Start Date. A Temporary Certificate of Occupancy (TCO) or Certificate of Occupancy (CO) must be issued by the authorized jurisdiction as proof of Substantial Completion. The architect will also issue a letter to the County upon acceptance of work upon Substantial Completion.
  3. Final Completion and Close-out (Project Completion Date) shall occur no later than twenty-five (25) CCD after Substantial Completion.

This milestone deadline is seventy-five (75) CCD after project Start Date.

A CO must be issued by the authorized jurisdiction as proof of Final Completion. The architect will also issue a letter upon acceptance of the project as complete, including the submission of all required and approved Close-out documentation.

4. The County will be allowed an additional thirty (30) CCD after the Final Completion date for County administrative purposes only, i.e. processing the final payment. Note this thirty (30) CCD clock does not start until ALL closeout-documents have been received, reviewed & approved by the County.

This milestone deadline is one-hundred & five (105) CCD from Project Start date.

5. The County will apply liquidated damages of \$500.00 (five-hundred dollars) per CCD day for any contract work that does not meet milestone deadlines, **including but not limited to administrative requirements**, completing punch list items and/or corrective work, submittal of complete close-out documentation, etc.

#### 1.2.7. WARRANTIES

- A. This project will require a minimum of one (1) year general warranty on all parts, materials, installation and equipment used. The start date of the one year warranty will be that of Final Completion.
- B. In addition, certain specific materials, equipment and installation will require extended warranties the will include repair or replacement for five (5) years or more as identified in the bid documents. Examples, though not limited to, are heating & cooling equipment/units, deck floor coating, etc. These extended warranties will have the start date of Final Completion.
- C. The project close-out documents shall list all warranties, start and end dates, and appropriate contact information for repairs and/or replacement of materials and/or equipment.

#### 1.2.8. SPECIFICATION FORMATS AND CONVENTIONS

- A. Specification Format: The Specifications are organized into Divisions and Sections.
  1. Division 1: Sections in Division 1 govern the execution of the Work of all Sections in the Specifications, including administrative requirements.
- B. 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. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural, and plural

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words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.

2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.
  - a. 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.

## 1.2.9 COUNTY HOLIDAY SCHEDULE & PARK EVENTS

### A. COUNTY HOLIDAY SCHEDULE

This project may require certain work to be completed over three day weekends so as to not disrupt the County's operation of the complex. The County and General Contractor, with the appropriate subcontractors and trades, will determine the *schedule for this work at least 14 CCD in advance*.

#### 1. 2019 Holiday Schedule

	New Year's Day	Tuesday	January 1
	Martin Luther King's Birthday	Monday	January 21
	Lincoln's Birthday (OBS)	Monday	February 11
	President's Day	Monday	February 18
	Good Friday	Friday	April 19
	Memorial Day	Monday	May 27
	Independence Day	Thursday	July 4
	Labor Day	Monday	September 2
	Columbus Day	Monday	October 14
	Election Day	Tuesday	November 5
11	Veteran's Day	Monday	November
28	Thanksgiving Day	Thursday	November
	Christmas Day	Wednesday	December 25

### B. PARK EVENTS

The Park may have events previously scheduled to take place at the Catering Hall or in the adjacent area. The contractor will have need to accommodate

these events and work around them. These events, if any, shall be discussed at the pre-construction kick-off meeting and included in the meeting minutes for the contractor to reference throughout the project, with updates as required.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

**END OF SECTION 011000**



## PART 1 – GENERAL

### 1.1 RELATED DOCUMENTS

- A. Drawings, Technical Specifications and general provisions of the Contract documents, including but not limited to Division 1 Sections.

### 1.2 SUMMARY

- A. This Section includes administrative and procedural requirements governing Allowances.
  - 1. Certain items may be specified in the Contract Documents by Allowances. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when additional information is available for evaluation. If necessary, additional requirements will be issued by a Request Against Allowance (RAA) and/or Change Order.
- B. Types of Allowances can include, but not be limited to, the following:
  - 1. Lump-sum Allowance.
  - 2. Contingency Allowance.
  - 3. Concealed Conditions Allowance.
  - 4. Third Party Inspection/Testing Allowance.

Note: Allowances are project contract specific and will be identified, among other places in the bid documents, on the Proposal Form.

### 1.3 SELECTION AND PURCHASE

- A. At the earliest practical date after award of the Contract, advise Architect of the date when final selection and purchase of each product or system described by an Allowance must be completed to avoid delaying the Work.
- B. At Architect's request, obtain proposals for each Allowance for use in making final selections. Include recommendations that are relevant to performing the Work.

- C. Purchase products and systems selected by Architect from the designated supplier.

#### 1.4 SUBMITTALS

- A. Submit proposals for purchase of products or systems included in Allowances, in the form specified for Request Against Allowance (RAA) and/or Change Orders as determined by the County.
- B. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each Allowance.
- C. Coordinate and process submittals for Allowance items in same manner as for other portions of the Work.

#### 1.5 COORDINATION

- A. Coordinate allowance items with other portions of the Work. Furnish templates as required to coordinate installation.

#### 1.6 LUMP-SUM ALLOWANCES

- A. Allowance shall include cost to Contractor of specific products and materials selected by Architect/Engineer or Owner under Allowance and shall include taxes, freight, and delivery to Project site.
- B. Unless otherwise indicated, Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to products and materials selected by Architect/Owner under Allowance shall be included as part of the Contract Sum and not part of the Allowance.

#### 1.7 CONTINGENCY ALLOWANCES

- A. Use the Contingency Allowance as directed by Architect/Owner and only by Request Against Allowance (RAA) that indicate amounts to be charged to the Allowance.
- B. Request Against Allowances authorizing use of funds from the Contingency Allowance will include Contractor's related costs and reasonable overhead and profit margins as limited by State Public Bidding Laws. Contractor to provide material, equipment, labor, installation invoices and other documentation as requested by Architect/County.

- C. At Project closeout, credit unused amounts remaining in the Contingency Allowance to County/Owner by Request Against Allowance and/or Change Order.

1.8 CONCEALED and/or UNKNOWN CONDITIONS ALLOWANCE

- A. Use the Concealed and/or Unknown Conditions Allowance only as directed by Architect/Engineer /Owner and only by Request Against Allowance and/or Change Orders that indicate amounts to be charged to the Allowance.
- B. Request Against Allowances and/or Change Orders authorizing use of funds from the Concealed and/or Unknown Conditions Allowance will include Contractor's related costs and reasonable overhead and profit margins as limited by State Public Bidding Laws. Contractor to provide material, equipment, labor, installation invoices and other documentation as requested by Architect/ Engineer/ County.
- C. At Project closeout, credit unused amounts remaining in the Concealed and/or Unknown Conditions Allowance to Owner by Request Against Allowance and/or Change Order.

1.9 THIRD PARTY INSPECTION/TESTING ALLOWANCE

- A. Use the Third Party Inspection/Testing Allowance only as directed by Architect/Engineer or Owner for Owner's purposes and only by Requests Against Allowance and/or Change Orders that indicate amounts to be charged to the Allowance.
- B. Requests Against Allowances and/or Change Orders authorizing use of funds from the Third Party Inspection/Testing Allowance will include Contractor's related costs and reasonable overhead and profit margins as limited by State Public Bidding Laws. Contractor to provide material, equipment, labor, installation invoices and other documentation as requested by Architect/County.
- C. At Project closeout, credit unused amounts remaining in the Concealed and/or Unknown Conditions Allowance to Owner by Request Against Allowance and/or Change Order.

#### 1.10 UNUSED MATERIALS

- A. Return unused materials purchased under an Allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.
- B. If requested by Architect of Owner, prepare unused material for storage by Owner when it is not economically practical to return the material for credit. If directed by Architect or Owner, deliver unused material to Owner's storage space. Otherwise, disposal of unused material is Contractor's responsibility.

#### PART 2 - PRODUCTS (Not Used)

#### PART 3 – EXECUTION

##### 3.1 EXAMINATION

- A. Examine products covered by an Allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

##### 3.2 PREPARATION

- A. Coordinate materials and their installation for each Allowance with related materials and installations to ensure that each Allowance item is completely integrated and interfaced with related work.

##### 3.3 SCHEDULE OF ALLOWANCES

- A. Contingency Allowance (5% of BASE BID) Bidder to list on Bid Form

**END OF SECTION 012100**

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Contract documents, including but not limited to, bid Drawings, Technical Specifications, General and Supplementary Conditions, and apply to this Section.

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for Unit Prices.
1. A unit price is an amount proposed by Bidders and stated on the Bid Form as a price per unit of measurement for materials for services that will be added to or deducted from the Contract Sum by Request against Allowance in the event the estimated quantities of Work required by the Contract Documents are increased or decreased.
  2. Unit prices include all necessary labor, equipment, material, overhead, profit and applicable taxes.
  3. Refer to contract documents, including bid Drawings & Technical Specifications for construction activities requiring the establishment of unit prices. Methods of measurement and payment for unit prices are specified in therein.
- B. Schedule: The Unit Price Schedule is listed at the end of this Section and included in the Proposal Form as part of this bid package. Specification Sections referenced in the Schedule contain requirements for materials and methods described under each unit price.
1. The Owner reserves the right to reject the Contractor's measurement of work-in-place that involves use of established unit prices, and to have this Work measured by an independent surveyor acceptable to the Contractor at the Owner's expense.

ATLANTIC COUNTY  
LENAPE PARK EAST - CATERING HALL DECK RENOVATIONS  
Hamilton Twp., Mays Landing, NJ

012200-A UNIT PRICES  
June 24, 2019

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PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

A. UNIT PRICE ADD OR DEDUCT SCHEDULE

1. UNIT PRICE No. 1:

Removal and replacement of rotted 3/4" plywood in the deck floor with new 3/4" plywood. Include the replacement of 96 square feet of 3/4" plywood in the base bid. See Section 061000 Rough Carpentry.

Cost per square foot, 3/4" plywood MORE than 96 square feet:

ADD \$ \_\_\_\_\_ to the Base Bid per square foot.

Cost per square foot, 3/4" plywood LESS than 96 square feet:

DEDUCT \$ \_\_\_\_\_ from Base Bid per square foot.

**Note: The difference of cost per square foot between Add and Deduct cannot exceed five percent (5%).**

2. UNIT PRICE No. 2:

Removal and replacement of two layers of drywall of the Two (2) hour rated ceiling in the basement below the Deck. Include the replacement of 256 square feet of two (2) layers of in the base bid. See ceiling assembly 003 on sheet A-4, and Section 092500 Gypsum Drywall.

Cost per square foot, two layers of drywall of the Two (2) hour rated ceiling in the basement below the Deck MORE than 256 square feet:

ADD \$ \_\_\_\_\_ to the Base Bid per square foot.

Cost per square foot, two layers of drywall of the Two (2) hour rated ceiling in the basement below the Deck LESS than 256 square feet:

DEDUCT \$ \_\_\_\_\_ from Base Bid per square foot.

**Note: The difference of cost per square foot between Add and Deduct cannot exceed five percent (5%).**

3. UNIT PRICE No. 3:

Removal and replacement of cement board wall siding to match existing in the inside of the Catering Hall Deck, based on square foot.

ADD \$ \_\_\_\_\_ per Square Foot

B. ADD / DEDUCT WORK NOT INCLUDED IN UNIT PRICING

Other types of work may be requested by the County and will be priced at a time and material basis. The Contractor shall include a maximum of 10% overhead and 5% profit on any Request Against Allowance or Change Order on a materials/equipment/labor cost with invoice and/or other backup documentation as requested by the Architect/ Engineer/ County, and as approved by same in writing.

**END OF SECTION**

## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

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

### 1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for handling and processing Contract modifications.
- B. See Division 1 for more information, including but not limited to "Allowances" for procedural requirements for handling and processing allowances.
- C. See Division 1 for more information, including but not limited to "Unit Prices" for administrative requirements for using unit prices.
- D. **ANY CONTRACT MODIFICATION WORK COMPLETED WITHOUT PRIOR WRITTEN APPROVAL WILL NOT BE EIGIBLE FOR PAYMENT.**

### 1.3 MINOR CHANGES IN THE WORK

- A. Architect will issue supplemental instructions authorizing Minor Changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Form G710, "Architect's Supplemental Instructions" or other County approved form.

### 1.4 REQUESTS AGAINST ALLOWANCE (See Division 1 Sections, including but not limited to Sections "Allowances", "Unit Prices").

- A. There may be Allowances included in this project. For example, a Contingency Allowance in an amount which will equal five (5%) of the lowest qualified base bid that will be added to and awarded with the BASE BID.

This, and any other Allowance that may be identified in the bid documents, shall be set aside to pay for items that were concealed or



unforeseen or extra work, tests, inspections, etc. that was not specified in any of the bid documents.

- B. Owner initiated Requests Against Allowance and/or Contractor initiated Requests Against Allowance will require the Contractor to use the unit pricing on the Proposal Form.

Should other types of work be requested by either party, it shall be priced on a time and material basis and will include Contractor's related costs of a maximum of 5% overhead and 10% profit margins on labor/materials/equipment with invoice(s) and other documentation as requested by the Architect/ County.

- C. All Requests Against Allowance MUST be approved by the Architect/COUNTY prior to initiating the work. ANY WORK COMPLETED WITHOUT PRIOR WRITTEN AUTHORIZATION WILL NOT BE PAID.
- D. See Division 1 for further information, including but not limited to "Allowances".

#### 1.5 CHANGE ORDER PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
1. Proposal Requests issued by Architect are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.
  2. Unless otherwise indicated in the proposal request, within 10 days after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
    - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.

- b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
  - c. Include costs of labor directly attributable to the change.
  - d. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
- B. Contractor-Initiated Proposals: If latent or unforeseen conditions require modifications to the Contract, Contractor may propose changes by submitting a request for a change to Architect.
- 1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
    - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
    - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
    - c. Include costs of labor directly attributable to the change.
    - d. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
    - e. Comply with requirements in Division 1 including but not limited to Section 016000 "Product Requirements" if the proposed change requires substitution of one product or system for product or system specified.

- C. Change Order Request Form: Use AIA Document G709 for Change Order Requests, or other form approved by the County.
- D. The Contractor shall include a maximum of 5% overhead and 10% profit on any Change Order Requests on labor/materials/ equipment with invoice and backup documentation submitted.
- E. On Owner's approval of a Change Order Request, Architect will issue a Change Order for signatures of Owner and Contractor on AIA Document G701 or other form approved by the County.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

**END OF SECTION 012600**

## PART 1 - GENERAL

### 1.1 SUMMARY

- A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.

### 1.2 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the Schedule of Values with preparation of Contractor's Construction Schedule. Cost-loaded CPM Schedule may serve to satisfy requirements for the Schedule of Values.
1. Correlate line items in the Schedule of Values with other required administrative forms and schedules, including Application for Payment forms with Continuation Sheets Submittals Schedule and Contractor's Construction Schedule.
  2. Submit the Schedule of Values to Architect at earliest possible date but no later than seven days before the date scheduled for submittal of initial Applications for Payment.
  3. Subschedules: Where the Work is separated into phases requiring separately phased payments, provide subschedules showing values Correlated with each phase of payment.
- B. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the Schedule of Values. Provide at least one line item for each Specification Section.
1. Identification: Include the following Project identification on the Schedule of Values:
    - a. Project name and location.
    - b. Name of Architect.
    - c. Architect's project number.
    - d. Contractor's name and address.
    - e. Date of submittal.

2. Submit draft of AIA Document G703 Continuation Sheets.
3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports.  
Coordinate with the Project Manual table of contents. Provide several line items for principal subcontract amounts, where appropriate. Include separate line items under required principal subcontracts for operation and maintenance manuals, punch list activities, Project Record Documents, and demonstration and training in the amount of 5 percent of the Contract Sum.
4. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
5. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
6. Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
7. Allowances: Provide a separate line item in the Schedule of Values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.
8. Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
  - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense, at Contractor's option.
9. Schedule Updating: Update and resubmit the Schedule of Values before the next Applications for Payment when Change Orders or

Construction Change Directives result in a change in the Contract Sum.

1.3 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.
  - 1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and Final Application for Payment involve additional requirements.
- B. Payment Application Times: Each progress payment shall be submitted to Architect by the 5th of the month OR as indicated in the Agreement between Owner and Contractor. The period of construction Work covered by each Application for Payment is one month, ending on the last day of the month.
- C. Two complete sets of Certified Payroll Reports, Monthly Manning Reports, Affidavit of Release of Liens and Affidavit of Payment of Debts & Claims from the Contractor and all Sub-contractors shall be submitted with the Payment Application. (NOTE: No payment applications can be processed without all of the required documentation.) These reports shall be delivered to Leslie A. MacDonnell, Atlantic County Facilities, PO Box 1107, Atlantic City, NJ 08404.
- D. Payment Application Forms: Use AIA Document G702 and AIA Document G703 Continuation Sheets as form for Applications for Payment. The County of Atlantic requires two (2) copies of the AIA forms be submitted with one (1) County Standard Invoice form, all with original signatures.
- E. Application Preparation: Complete every entry on form, notarized and executed by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.
  - 1. Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions were made.
  - 2. Include amounts of Requests Against Allowance (RAA) and Change Orders issued before last day of construction period covered by application.

3. Include a completed Atlantic County Standard Invoice with original signature with each payment application. (The Atlantic County Standard Invoice will be distributed at the contract kick-off meeting).
- F. Transmittal: Submit two (2) signed and notarized original copies of each Application for Payment and one County Standard Invoice with original signature to Architect by a method ensuring receipt within 24 hours. One (1) copy shall include all required documentation, in the appropriate number of copies as identified in this Section and other Division 1 Sections.
1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- G. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from every entity who is lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.
1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
  2. When an application shows completion of an item, submit final or full waivers.
  3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
  4. Waiver Forms: Submit waivers of lien on forms, executed in a manner acceptable to Owner.
- H. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
1. Project Contact List
  2. List of subcontractors.
  3. Schedule of Values.
  4. Contractor's Construction Schedule (preliminary if not final).

5. Schedule of unit prices.
  6. Submittals Schedule (preliminary if not final).
  7. Copies of Approved Schedules Required for Initial Application for Payment (i.e. Pre-construction survey, Pre-construction video, Pre-construction photographs, Daily Logs, RFI Log, RAA Log, etc.)
  8. Copies of building permits.
  9. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
  10. Initial progress report.
  11. Report of preconstruction conference.
  12. Certificates of insurance and insurance policies.
  13. Copy of Initial Monthly Manning Report submitted to State of New Jersey.
- I. Application for Payment at Substantial Completion: The County requires a Temporary Certificate of Occupancy (TCO), or Certificate of Occupancy (CO) or Certificate of Approval from the ruling construction code entity in order to consider the work substantially complete. After issuing the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
1. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- J. Final Payment Application: Refer to Division 1 Sections including, but not limited to, 017700 -Closeout Procedures, 017839 - Project Record Documents, 018000 -Construction Schedules & Milestones, etc. The Final Certificate of Occupancy or Certificate of Approval must be issued by the ruling construction code entity prior to the County processing the Final Payment.



Submit Final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following (consult Owner about the need for additional affidavits and other requirements):

1. Copy of Certificate of Occupancy & Architect/ Engineer letter indicating project complete, including administrative and close out documentation.
3. Final Close-out documentation, 2 hardcopies, 2 CD's, to be reviewed & approved by Architect/ Engineer/ County prior to processing of Final Payment.
2. Summary of warranties with start date, expiration date, contact information including contractor and manufacturer. Include all service & maintenance warranties with schedule for inspections/tests and contact information.
3. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
4. Updated final statement, accounting for final changes to the Contract Sum.
5. AIA Document G706, or County approved equivalent, "Contractor's Affidavit of Payment of Debts and Claims."
6. AIA Document G706A, or County approved equivalent, "Contractor's Affidavit of Release of Liens."
7. AIA Document G707, or County approved equivalent, "Consent of Surety to Final Payment."
8. Evidence that claims have been settled.
9. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work..
10. Final, liquidated damages settlement statement.

ATLANTIC COUNTY  
LENAPE PARK EAST – CATERING HALL DECK RENOVATIONS  
Hamilton Twp., Mays Landing, NJ

012900 – PAYMENT PROCEDURES  
June 24, 2019

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PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

**END OF SECTION 012900**

PART 1 - GENERAL  
1.1 SUMMARY

- A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to Division 1 specifications, and the following:
1. Coordination Drawings.
  2. Project meetings.
  3. Requests for Information (RFIs).
  4. Construction Progress Documentation
  5. Photographic Documentation
  6. Submittal Procedures.
  7. Quality Requirements
  8. Temporary Facilities & Controls
- B. See Division 1 Sections for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.

1.2 DEFINITIONS

- A. RFI: "Request for Information" from Contractor seeking interpretation or clarification of the Contract Documents.

1.3 COORDINATION

- A. The General Contractor shall provide and designate a duly qualified employee who shall serve as the Project Manager/ Superintendent ("Project Manager" or "PM"). The PM shall have sufficient credentials and experience to ably supervise the work required per the Bid and Contract Documents. The PM shall oversee and manage the performance of the work on **a day to day basis**, monitor all installations (contractor, sub-

contractors, vendors, trades, etc.) The Project Manager shall serve as the designated contact person at the Work site who shall be available **and on site during all working hours and whenever any sub-contractor, vendor, trade, etc. is working on site**, to review and respond to any issues raised by or on behalf of the Architect/ Engineer/ County. In the event that the PM shall be unable to perform these responsibilities for whatever reason, the General Contractor shall promptly notify and request approval by the County of another duly qualified employee to serve as the PM replacement within 48 hours.

- B. The General Contractor shall be responsible to deliver a complete project per all bid and contract documents, (including, but not limited to Instructions to Bidders, all Divisions of Technical Specifications, Drawings and any Addendum and/or Clarifications) issued by the County of Atlantic for this project.
- C. The General Contractor will be responsible to review ALL bid documents with each of their subcontractors and/or trades and/or disciplines throughout the project construction to ensure that the finished project is complete per the bid documents. The General Contractor shall submit to the Architect/ Engineer/ County written minutes of these meetings.
- D. The County will not be responsible for any additional costs due to the lack of coordination by the General Contractor with his subcontractors and/or trades and/or disciplines. **Work specified in bid documents for any subcontractor and/or trade and/or discipline will include by inference work of any other subcontractor and/or trade and/or discipline that is required for a complete and finished product.**
- E. Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations included in different Sections with all subcontractor(s) that depend on each other for proper installation, connection, and operation.
- G. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure

orderly progress of the Work. Such administrative activities include various Division 1 Sections, and are not limited to, the following:

1. Preparation and updates of Contractor's Construction Schedule.
  2. Preparation and updates of the Schedule of Values.
  3. Installation and removal of temporary facilities and controls.
  4. Preparing & updating Submittal List.
  5. Delivery and processing of Submittals.
  6. Scheduling Progress meetings with County, Architect, Engineer, Subcontractors, etc.
  7. Preparation and distribution of bi-weekly (2 week) "Look Ahead Schedule".
  8. Preparation and distribution of GC/Subcontractor(s) coordination /progress meeting minutes, with copies to Architect/ Engineer/ County.
  9. Project closeout requirements, including Training & Final Cleaning.
  10. Requirements of project record documentation
  11. Warranties, Bonds, Maintenance and/or Service Contracts, etc.
- 1.4 SUBMITTALS - Reference Division 1 Sections for further information, including, but not limited to **Section 013300 "Submittal Procedures"**.
- A. Submittal Schedule: General Contractor shall prepare WITHIN TWO (2) WEEKS (14 consecutive days) of the project Start Date the Submittal Schedule.
1. Coordinate Submittals Schedule with list of subcontracts, the Schedule of Values, and Contractor's Construction Schedule.

2. Submit concurrently with the first complete submittal of Contractor's Construction Schedule.
  3. This Submittal Schedule will be updated as required.
  4. All Submittals MUST BE ISSUED WITHIN Fourteen (14) CCD of the project Start Date. Should this milestone not be met, the County may charge the General Contractor with liquidated damages for every CCD until all Submittals are received by the by Architect/Engineer/County.
- B. Coordination Drawings: Prepare Coordination Drawings if limited space availability necessitates maximum utilization of space for efficient installation of different components or if coordination is required for installation of products and materials fabricated by separate entities.
1. Sheet Size: At least 8-1/2 by 11 inches (215 by 280 mm) but no larger than 30 by 40 inches (750 by 1000 mm).
  2. Number of Copies: Submit two opaque copies of each submittal. Architect/Engineer will return one copy.
  3. Refer to individual Sections for Coordination Drawing requirements for Work in those Sections.
  4. Upon General Contractor's written request & Architect's approval, the requirement for Coordination Drawings may be deleted if installation is completely shown on Shop Drawings. Coordinate with individual Sections.

## 1.5 COORDINATION DRAWINGS

- A. Coordination drawings shall include the following:
1. Content: Project-specific information, drawn accurately to scale. Do not base Coordination Drawings on reproductions of the Contract Documents or standard printed data. Include the following information, as applicable:
    - a. Indicate functional and spatial relationships of components of all architectural, structural, civil, mechanical, plumbing & fire

- protection, electrical, security & telecommunications systems.
  - b. Indicate required installation sequences.
  - c. Indicate dimensions shown on the Contract Drawings and make specific note of dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Architect and Owner for resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.
  - d. Use applicable electronic AutoCAD Drawings as a basis for preparation of coordination drawings. Prepare sections, elevations, and details as needed to describe relationship of various systems and components.
- B. Coordination Drawing Organization: Organize coordination drawings as follows:
- 1. Floor Plans and Reflected Ceiling Plans.
  - 2. Plenum Space.
  - 3. Structural Penetrations.
  - 4. Slab Edge and Embedded Items.
  - 5. Electrical Work: Show the following:
    - a. Runs of vertical and horizontal conduit **1-1/4 inches (32 mm)** in diameter and larger.
    - b. Light fixture, exit light, emergency battery pack, smoke detector, and other fire-alarm locations.
    - c. Panel board, switch board, switchgear, transformer, busway, generator, and motor control center locations.

- d. Location of pull boxes and junction boxes, dimensioned from column center lines.
- 6. Review: Architect/Engineer will review coordination drawings to confirm that the Work is being coordinated, but not for the details of the coordination, which are Contractor's responsibility. If Architect/Engineer determines that coordination drawings are not being prepared in sufficient scope or detail, or are otherwise deficient, Architect/Engineer will so inform Contractor, who shall make changes as directed and resubmit.
- 7. Coordination Drawing Prints: Prepare coordination drawing prints according to requirements in Division 1 Sections, including but not limited to "Submittal Procedures."
- 8. Architect/Engineer will furnish Contractor one set of digital data files of Drawings for use in preparing coordination digital data files.

#### 1.6 PROJECT MEETINGS

- A. General: The Architect/Engineer/ Owner will schedule and conduct meetings and conferences at Project site, unless otherwise indicated.
  - 1. Attendees: Contractor shall inform the appropriate sub-contractors and/or vendors of the dates/time whose presence is required for each meeting.
  - 2. Two-week Look Ahead: Contractor will prepare and distribute this at each meeting, including appropriate sub-contractor and/or vendor information.
  - 3. Minutes: The Architect/Engineer will record significant discussions and agreements achieved. The Architect/Engineer will distribute the meeting minutes to everyone concerned, including Owner, within 7 days of the meeting.
- B. Preconstruction Conference: Architect/Engineer and Owner will schedule a preconstruction conference before the start of construction, at a time convenient to Owner and Architect/ Engineer but no later than 30 days



after execution of the Agreement and issuance of Notice to Proceed. The Conference will be held at the Project site or another convenient location.

1. Attendees: Authorized representatives of Owner, Architect, Engineer, the Contractor superintendent; major subcontractors; vendors and suppliers.
2. Agenda: Project scope of work and administrative requirements.
  - a. Tentative construction schedule.
  - b. Designation of key personnel and their duties.
  - c. Procedures for RFI's and RAA's.
  - d. Procedures for processing Applications for Payment.
  - e. Submittal procedures.
  - f. Preparation of Record Documents.
  - g. Use of the premises and existing building.
  - h. Work restrictions.
  - i. Owner's occupancy requirements.
  - o. Responsibility for temporary facilities and controls.
  - p. Construction waste management and recycling.
  - q. Parking availability.
  - r. Office, work, and storage areas.
  - s. Equipment deliveries and priorities.
  - t. First aid.
  - u. Security.
  - v. Progress cleaning.

- w. Working hours.
  - x. Bi-weekly (2 week) Look Ahead Schedule
  - 3. Minutes: The Architect/Engineer will record and distribute meeting minutes.
- C. Pre-installation Conferences: Contractor shall conduct a pre-installation conference at Project site before each construction activity that requires coordination with other construction. Contractor shall advise Architect /Engineer and Owner of these meetings one week in advance so they may attend.
- 1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting.
  - 2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration.
  - 3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
  - 4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present with copies to Architect/Engineer and County.
  - 5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- D. Progress Meetings: Conduct progress meetings at biweekly intervals. Coordinate dates of meetings with preparation of payment requests.
- 1. Attendees: In addition to representatives of Owner and Architect /Engineer, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved

in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.

2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
  - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
    - 1) Review schedule for next period.
  - b. Review present and future needs of each entity present.
3. Minutes: The Architect/Engineer will prepare and distribute the meeting minutes and distribute to all attendees.
4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.
  - a. Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule and distribute at each progress meeting.

#### 1.7 REQUESTS FOR INTERPRETATION (RFIs)

- A. Procedure: Immediately on discovery of the need for interpretation of the Contract Documents, and if not possible to request interpretation at

Project meeting, prepare and submit an RFI in the form specified.

1. RFIs shall originate from Contractor. RFIs submitted by entities other than Contractor will be returned with no response.
- B. Content of the RFI: Include a detailed, legible description of item needing interpretation and the following:
1. Project name.
  2. Date.
  3. Name of Contractor.
  4. Name of Architect/Engineer and Owner's Representative.
  5. RFI number, numbered sequentially.
  6. Specification Section number and title and related paragraphs, as appropriate.
  7. Drawing number and detail references, as appropriate.
  8. Field dimensions and conditions, as appropriate.
  9. Contractor's suggested solution(s). If Contractor's solution(s) impact the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
  10. Contractor's signature.
  11. Attachments: Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings, and other information necessary to fully describe items needing interpretation.
- C. Hard-Copy RFIs:
1. Identify each page of attachments with the RFI number and sequential page number.

- D. Architect's/Engineer's Action: Architect/Engineer will review each RFI, determine action required, and return it. Allow five working days for Architect's response for each RFI. RFIs received after 1:00 p.m. will be considered as received the following working day.
1. The following RFIs will be returned without action:
    - a. Requests for approval of submittals.
    - b. Requests for approval of substitutions.
    - c. Requests for coordination information already indicated in the Contract Documents.
    - d. Requests for adjustments in the Contract Time or the Contract Sum.
    - e. Requests for interpretation of Architect's actions on submittals.
    - f. Incomplete RFIs or RFIs with numerous errors.
  2. Architect's/Engineer's action may include a request for additional information, in which case Architect's/Engineer's time for response will start again.
  3. Architect's/Engineer'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 according to Division 1 Section 012600 "Contract Modification Procedures".
    - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect/Engineer in writing within five days of receipt of the RFI response.
- E. On receipt of Architect's/Engineer's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect/Engineer within five days if Contractor disagrees with response.

- F. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. **Submit log bi-weekly.**
1. Project name.
  2. Name and address of Contractor.
  3. Name and address of Architect/Engineer.
  4. RFI number including RFIs that were dropped and not submitted.
  5. RFI description.
  6. Date the RFI was submitted.
  7. Date Architect's/Engineer's response was received.
  8. Identification of related Request Against Allowance, Minor Change in the Work, Proposal Request, etc., as appropriate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

**END OF SECTION 013100**

## PART 1 – GENERAL

### 1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including but not limited to the following:
1. Contractor's Construction Schedule.
  2. Submittals Schedule.
  3. Daily Construction Activity Reports.
  4. Daily Worker Logs
  5. Field condition reports.
  6. Pre-construction photographs & video, and progress photographs.
  7. Site Survey of Pre-Construction Existing Conditions.
- B. The Catering Hall shall remain in use by the County throughout the entire period of construction for this project. The immediate construction area (i.e. the Catering Hall Deck and basement area under the Deck) shall be turned over to the Contractor, but the balance of the building will still be in use. Therefore all turnover /disruptions to all building utilities including but not limited to power, water, voice, data, building power disruption, etc. shall be scheduled during period when the facility is unoccupied by the County, i.e. evenings or weekends or Holidays. See Division 1 Sections and other Division Sections and related drawings for further coordination requirements.
- C. See Division 1, including but not limited to, Section 012900 "Payment Procedures" for submitting the Schedule of Values. (AIA Form G-703)
- D. See Division 1, including but not limited to Section 013233 "Photographic Documentation" for submitting construction photographs.

- E. Further information for requirements of Construction Progress Documentation is detailed in various Division 1 Sections.

## 1.2 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
1. Critical activities are activities on the critical path. They must start and finish on the planned early start and finish times.
  2. Predecessor Activity: An activity that precedes another activity in the network.
  3. Successor Activity: An activity that follows another activity in the network.
- B. CPM: Critical Path Method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.
- C. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- D. Float: The measure of leeway in starting and completing an activity.
1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.
- E. Fagnet: A partial or fragmentary network that breaks down activities into smaller activities for greater detail.
- F. Major Area: A story of construction, a separate building, or a similar significant construction element.



1.3 SUBMITTALS

- A. Submittals Schedule: Submit three (3) copies of schedule. Arrange the following information in a tabular format:
1. Scheduled date for first submittal and deadline for last submittal.
  2. Specification Section number and title.
  3. Submittal category (action or informational).
  4. Name of subcontractor.
  5. Description of the Work covered.
  6. Scheduled date for Architect's final release or approval.
- B. Preliminary Network Diagram: Submit two (2) opaque copies, large enough to show entire network for entire construction period. Show logic ties for activities.
- C. Contractor's Construction Schedule: Submit two (2) opaque copies of initial schedule, large enough to show entire schedule for entire construction period.
1. Submit an electronic copy of schedule, using software indicated, on CD-R, and labeled to comply with requirements for submittals. Include type of schedule (Initial or Updated) and date on label.
- D. CPM Reports: Concurrent with CPM schedule, submit three copies of each of the following computer-generated reports. Format for each activity in reports shall contain activity number, activity description, cost and resource loading, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float in calendar days.
1. Activity Report: List of all activities sorted by activity number and then early start date, or actual start date if known.

2. Logic Report: List of preceding and succeeding activities for all activities, sorted in ascending order by activity number and then early start date, or actual start date if known.
3. Total Float Report: List of all activities sorted in ascending order of total float.

E. **Daily Construction Reports: Submit two (2) copies at monthly intervals.**

F. Field Condition Reports: Submit two (2) copies at time of discovery of differing conditions.

#### 1.4 COORDINATION

A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.

B. Coordinate Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittals Schedule, progress reports, payment requests, and other required schedules and reports.

1. Secure time commitments for performing critical elements of the Work from parties involved.
2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

### PART 2 – PRODUCTS

#### 2.1 SUBMITTALS SCHEDULE

See Division 1 Section 013300 "Submittal Procedure" and other Division Sections for further information.

A. Preparation: General Contractor shall prepare WITHIN FOURTEEN (14) CONSECUTIVE DAYS (CCD) of the Project Start Date a **Submittal Schedule** arranged in chronological order by dates required by the construction schedule. Include time required for review, resubmittal, ordering, manufacturing, fabrication, and delivery when establishing dates.

1. Coordinate Submittals Schedule with list of subcontracts, the Schedule of Values, and Contractor's Construction Schedule.
  2. Submit concurrently with the first complete submittal of Contractor's Construction Schedule.
- B. This Submittal Schedule will be updated as required. **ALL SUBMITTALS MUST BE ISSUED WITHIN FOURTEEN (14) CCD'S FROM THE PROJECT START DATE**, unless prior written authorization for delay is approved by Architect/County.
- 2.2. CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL
- A. Time Frame: Extend schedule from date established for commencement of the Work to date of Final Completion.
1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by a Request Against Allowance or Change Order.
- B. Activities: Treat each story or separate area as a separate numbered activity for each principal element of the Work. Comply with the following:
1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Architect/Engineer.
  2. Procurement Activities: Include procurement process activities for the following long lead items and major items, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
  3. Submittal Review Time: Include review and resubmittal times indicated in Division Sections in schedule. Coordinate submittal review times in Contractor's Construction Schedule with Submittals Schedule.
  4. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's/

Engineer administrative procedures necessary for certification of Substantial Completion. Additional requirements are included in various Division Sections.

- C. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.
1. Phasing: Arrange list of activities on schedule by phase.
  2. Work under More Than One Contract: Include a separate activity for each contract.
  3. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
  4. Work Restrictions: Show the effect of the following items on the schedule:
    - a. Coordination with existing construction.
    - b. Limitations of continued occupancies.
    - c. Uninterruptible services.
    - d. Partial occupancy before Substantial Completion.
    - e. Use of premises restrictions.
    - f. Provisions for future construction.
    - g. Seasonal variations.
    - h. Environmental control.
  5. Work Stages: Indicate important stages of construction for each major portion of the Work.
- D. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Final Submittal date, Substantial Completion, and Final Completion.

1. The County may institute liquidate damages for each CCD of missed Mile stones until the Milestone is achieved.
- E. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using fragments to demonstrate the effect of the proposed change on the overall Project schedule.
- 2.3 CONTRACTOR'S CONSTRUCTION SCHEDULE (CPM SCHEDULE)
- A. General: Prepare network diagrams using AON (activity-on-node) format.
  - B. Preliminary Network Diagram: Submit diagram within FOURTEEN (14) days of Notice to Proceed. Outline significant construction activities. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.
  - C. CPM Schedule: Prepare Contractor's Construction Schedule using a computerized, cost- and resource-loaded, time-scaled CPM network analysis diagram for the Work.
    1. Develop network diagram in sufficient time to submit CPM schedule so it can be accepted for use no later than 14 days after the Executed Contract and issuance of Notice to Proceed.
      - a. Failure to include any work item required for performance of this Contract shall not excuse Contractor from completing all work within applicable completion dates, regardless of Architect's/Engineer's approval of the schedule.
    2. Establish procedures for monitoring and updating CPM schedule and for reporting progress. Coordinate procedures with progress meeting and payment request dates.
    3. Use "one workday" as the unit of time. Include list of nonworking days and holidays incorporated into the schedule.

- D. CPM Schedule Preparation: Prepare a list of all activities required to complete the Work. Using the preliminary network diagram, prepare a skeleton network to identify probable critical paths.
1. Activities: Indicate the estimated time duration, sequence requirements, and relationship of each activity in relation to other activities. Include estimated time frames for the following activities:
    - a. Preparation and processing of submittals.
    - b. Mobilization and demobilization.
    - c. Purchase of materials.
    - d. Delivery.
    - e. Fabrication.
    - f. Utility interruptions.
    - g. Installation.
    - h. Work by Owner that may affect or be affected by Contractor's activities.
    - i. Testing and commissioning.
  2. Critical Path Activities: Identify critical path activities, including those for interim completion dates. Scheduled start and completion dates shall be consistent with Contract milestone dates.
  3. Processing: Process data to produce output data on a computer-drawn, time-scaled network. Revise data, reorganize activity sequences, and reproduce as often as necessary to produce the CPM schedule within the limitations of the Contract Time.
  4. Format: Mark the critical path. Locate the critical path near center of network; locate paths with most float near the edges.
    - a. Subnetworks on separate sheets are permissible for activities clearly off the critical path.

E. Initial Issue of Schedule: Prepare initial network diagram from a list of straight "early start-total float" sort. Identify critical activities. Prepare tabulated reports showing the following:

1. Contractor or subcontractor and the Work or activity.
2. Description of activity.
3. Principal events of activity.
4. Immediate preceding and succeeding activities.
5. Early and late start dates.
6. Early and late finish dates.
7. Activity duration in workdays.
8. Total float or slack time.
9. Average size of workforce.

F. Schedule Updating: Concurrent with making revisions to schedule, prepare tabulated reports showing the following:

1. Identification of activities that have changed.
2. Changes in early and late start dates.
3. Changes in early and late finish dates.
4. Changes in activity durations in workdays.
5. Changes in the critical path.
6. Changes in total float or slack time.
7. Changes in the Contract Time.

## 2.4 REPORTS

- A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:
1. List of subcontractors at Project site.
  2. Copy of daily Project Site sign-in sheet including identification of worker's on site.  
Note: Daily Log & Certified Payrolls shall match workers listed.
  3. Brief description of work activities.
  4. Equipment at Project site.
  5. Material deliveries.
  6. High and low temperatures and general weather conditions.
  7. Accidents.
  8. Stoppages, delays, shortages, and losses.
  9. Meter readings and similar recordings.
  10. Orders and requests of authorities having jurisdiction.
  11. Services connected and disconnected.
  12. Equipment or system tests and startups.
- B. Owner shall receive a copy of the daily log for the period covering each AIA Payment Application as an excel file and hardcopy. The entire daily log from start to closeout of project will be provided in excel file, hardcopy and as part of the closeout documents CD.
- C. Field Condition Reports: Immediately on discovery of a difference between field conditions and the Contract Documents, prepare and submit a detailed report. Submit with a request for interpretation. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

### PART 3 – EXECUTION



3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Contractor's Construction Schedule Updating: At bi-weekly intervals, update schedule to reflect actual construction progress and activities.
1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
  2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
  3. As the Work progresses, indicate Actual Completion percentage for each activity.
- B. Distribution: Distribute copies of approved schedule to Owner, Architect, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
1. Post copies in Project meeting rooms and temporary field offices.
  2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

**END OF SECTION 013200**

## PART 1 – GENERAL

### 1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for the following:
  - 1. Preconstruction photographs.
  - 2. Periodic construction photographs.
- B. See Division 1 Section 013100 "Project Management and Coordination" for further requirements.
- C. See Division 1 Section 013200 "Construction Progress Documentation" for further requirements.
- D. See Division 1 Section 017700 "Closeout Procedures" for submitting digital media as Project Record Documents at Project closeout.
- E. Refer to Division 1 Sections for further information and requirements.

### 1.2 SUBMITTALS

- A. **Key Plan:** Submit photograph key plan of Project site and building with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include same label information as corresponding set of photographs.
- B. **Progress Photographs:** Submit two prints of each photographic view bi-weekly, at progress meeting or as agreed to by County. Include updated Key Plan with each photograph submission (Both print & digital).
  - 1. Format: 8-by-10-inch (203-by-254-mm) smooth-surface matte prints on single-weight commercial-grade photographic paper, enclosed back to back in clear plastic sleeves that are punched for standard 3-ring binder.
  - 2. Identification: On back of each print, provide an applied label or rubber-stamped impression with the following information:
    - a. Name of Project.

- b. Name and address of photographer.
  - c. Name of Architect/Engineer.
  - d. Name of Contractor.
  - e. Date photograph was taken if not date stamped by camera.
  - f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
  - g. Unique sequential identifier.
3. Digital Images: Corresponding with the bi-weekly submittal of photographic prints, email digital images of same to Architect/Engineer
    - a. Identify electronic media with date photographs were taken.
    - b. Submit images that have same aspect ratio as the sensor, uncropped.
    - c. Number each image on the front.
    - d. Include updated Key Plan indicating the image numbers where photos were taken.
  4. In addition to other Division 1 Sections closeout requirements; **submit with final payment application two (2) CD's with ALL project photographs in digital image in chronological order from pre-construction conditions to project final completion.** Identify electronic media with date and location photographs were taken.

### 1.3 QUALITY ASSURANCE

- A. Photographer Qualifications: An individual who has been regularly engaged as a professional photographer of construction projects for not less than three years.

### 1.4 COORDINATION

- A. Auxiliary Services: Cooperate with photographer and provide auxiliary services requested, including access to Project site and use of temporary facilities, including temporary lighting required to produce clear, well-lit photographs without obscuring shadows.

#### 1.5 USAGE RIGHTS

- A. Obtain and transfer copyright usage rights from photographer to Owner for unlimited reproduction of photographic documentation.

### PART 2 – PRODUCTS

#### 2.1 PHOTOGRAPHIC MEDIA

- A. Digital Images: Provide images in uncompressed TIFF format, produced by a digital camera with minimum sensor size of 4.0 megapixels, and at an image resolution of not less than 1024 by 768 pixels.

### PART 3 – EXECUTION

#### 3.1 CONSTRUCTION PHOTOGRAPHS

- A. Photographer: Engage a qualified commercial photographer to take construction photographs.
- B. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.
  - 1. Maintain **Key Plan** with each set of construction photographs that identifies each photographic location.
- C. Film Images:
  - 1. Date Stamp: Unless otherwise indicated, date and time stamp each photograph as it is being taken so stamp is integral to photograph.
  - 2. Field Office Prints: Retain one set of prints of progress photographs in the field office at Project site, available at all times

for reference. Identify photographs same as for those submitted to Architect/Engineer.

- D. **Digital Images:** Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image- editing software.
1. **Date and Time:** Include date and time in filename for each image. Date shall be formatted YYYY.MM.DD.
  2. **Field Office Images:** Maintain one set of images on CD-ROM in the field office at Project site, available at all times for reference. Identify images same as for those submitted to Architect/Engineer.
- E. **Preconstruction Photographs:** Before commencement of project, in addition to the narrated color video and the requirements of other Division Sections, take color, digital photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, and/or as directed by Architect /Engineer.
1. Take at least **30 photographs to show existing conditions on the interior of the Catering Hall Deck prior to construction.** These should also show interior Catering Hall areas immediately adjacent to the project site.
  2. **Take at least 30 photographs to show existing conditions of the exterior and basement areas of the Catering Hall Deck.**
  3. Include adjacent areas of the Catering Hall.
  4. Flag excavation areas before taking construction photographs.
  5. Take at least **30 photographs to show existing conditions of Park grounds, driveways, roads, pedestrian paths, etc.** adjacent to the project site prior to the start of Work.
- F. **Progress Photographs:** Take at least **20 color, digital photographs monthly, coinciding with the cutoff date associated with Application for Payment.** Select vantage points to show status of progress since last photographs were taken. Include updated keyplan.
- G. **Additional Photographs:** Architect/Engineer may issue requests for up to an

**additional 30 photographs**, in addition to periodic photographs specified.

1. Three days' notice will be given, where feasible.
2. In emergency situations, take additional photographs within 24 hours of request.
3. Circumstances that could require additional photographs include, but are not limited to, the following:
  - a. Special events planned at Project site.
  - b. Immediate follow-up when on-site events result in construction damage or losses.
  - c. Substantial Completion of a major phase or component of the Work.
  - d. Extra record photographs at time of final acceptance.
  - e. Owner's request for special publicity photographs.

**END OF SECTION 013233**

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General, Special and supplementary Articles as contained in Division 1 and other Divisions apply to the work in section.
- B. The work of this section shall include all necessary labor, materials, tools, and appliances required to complete, in a first quality, workmanlike manner, the following operations: Submittals as specified herein for all Sections of this Specification.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.
- B. See Division 1 Section 013200 "Construction Progress Documentation" for submitting schedules and reports, including Contractor's Construction Schedule.
- C. See Division 1 Section 013233 "Photographic Documentation" for submitting construction photographs.
- D. See Division 1 Section 014000 "Quality Requirements" for submitting test and inspection reports and for mockup requirements.
- E. See Division 1 Section 017700 "Closeout Procedures" for submitting warranties.
- F. See Division 1 Section 017839 "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
- G. For further information/requirements, review other Division 1 Sections.

1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information that requires Architects /Engineer's responsive action.

- B. Informational Submittals: Written information that does not require Architect's/Engineer's responsive action. Submittals may be rejected for not complying with requirements.

#### 1.4 QUALITY ASSURANCE

- A. Prior to each submittal, carefully review and coordinate all aspects of each item being submitted.
- B. Verify that each item and the submittal for it conform in all respects with the specified requirements.
- C. By affixing the Contractor's signature to each submittal, certify that this coordination has been performed.

#### 1.5 SUBMITTAL PROCEDURES

- A. Manufacturer's Literature:
  - 1. Where contents of submitted literature from manufacturers include data not pertinent to the submittal, clearly show which portions of the contents are being submitted for review.
  - 2. Electronic submittals are encouraged. For hard copy submittals, submit the number of copies which are required to be returned, plus two (2) copies which will be retained by the Architect.
- B. Colors and Patterns: Unless the precise color and pattern is specifically called out in the Contract Documents, and whenever a choice of color or pattern is available in the specified products, submit accurate color and pattern charts to the Architect for selection.
- C. 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. 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/Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- D. Submittals Schedule: Comply with requirements in Division 1 Section 013200 "Construction Progress Documentation" for list of submittals and time requirements for scheduled performance of related construction activities.
1. General Contractor shall **prepare WITHIN FOURTEEN (14) CONSECUTIVE DAYS (CCD)** of the Project Start Date a **Submittal Schedule** arranged in chronological order by dates required by the construction schedule. Include time required for review, resubmittal, ordering, manufacturing, fabrication, and delivery when establishing dates.
  2. Coordinate Submittals Schedule with list of subcontracts, the Schedule of Values, and Contractor's Construction Schedule.
  3. Submit concurrently with the first complete submittal of Contractor's Construction Schedule.
  4. This Submittal Schedule will be updated as required. **ALL SUBMITTALS MUST BE ISSUED WITHIN FOURTEEN (14) CCD's FROM THE PROJECT START DATE**, unless prior authorization for delay is approved by Architect/ Owner.
- NOTE: The County may institute liquidated damages for each CCD after missed 14 day deadline.
- E. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's/Engineer'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 five days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is

required. Architect/Engineer 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 five days for review of each resubmittal.

F. Identification: Place a permanent label or title block on each submittal 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 (150 by 200 mm)** on label or beside title block to record Contractor's review and approval markings and action taken by Architect/Engineer.
3. Include the following information on label for processing and recording action taken:
  - a. Project name.
  - b. Date.
  - c. Name and address of Architect/Engineer.
  - d. Name and address of Contractor.
  - e. Name and address of subcontractor.
  - f. Name and address 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.
- G. Deviations: Highlight, encircle, or otherwise specifically identify deviations from the Contract Documents on submittals.
- H. Additional Copies: Unless additional copies are required for final submittal, and unless Architect/Engineer observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
- 1. Additional copies submitted for maintenance manuals will not be marked with action taken and will be returned.
- I. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect/Engineer will discard submittals received from sources other than Contractor.
- 1. Transmittal Form: Use AIA Document G810 or CSI Form 12.1A or other form approved by County.
- J. 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 "Reviewed" or "Reviewed as Modified."

- K. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, and installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- L. Use for Construction: Use only final submittals with mark indicating "Reviewed" or "Reviewed as Modified" by Architect/Engineer.

#### 1.6 CONTRACTOR'S USE OF ENGINEER'S CAD FILES

- A. General: At Contractor's written request, copies of Architect's/Engineer's CAD files will be provided to Contractor for Contractor's use in connection with Project, subject to the following conditions:
  - 1. Compliance with Architect's/Engineer's and/or Owner's Agreement "Electronic Media for Use by Contractor."

### PART 2 – PRODUCTS

#### 2.1 ACTION SUBMITTALS

- A. General: Prepare and submit Action Submittals required by individual Specification Sections.
- 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 printed 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 written recommendations.
    - b. Manufacturer's product specifications.
    - c. Manufacturer's installation instructions.

- d. Manufacturer's catalog cuts.
  - e. Wiring diagrams showing factory-installed wiring.
  - f. Printed performance curves.
  - g. Operational range diagrams.
  - h. Compliance with specified referenced standards.
  - i. Testing by recognized testing agency.
4. Number of Copies: Submit three copies of Product Data, unless otherwise indicated. Engineer will return two copies. Mark up and retain one returned copy as a Project Record Document.
- 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. Make submittals of shop drawings accurately to a scale sufficiently large to show all pertinent aspects of the item and its method of connection to the work.
  2. Scale & Measurements: Make shop drawings accurately to a scale sufficiently large to show all pertinent aspects of the items and its method of connection to the work.
  3. Types of Prints: Electronic submittals are encouraged.
  4. Shop Drawings Not Submitted Electronically: Submit shop drawings in the form of one (1) transparency of each sheet plus four (4) blue line or black line prints of each sheet.
  5. Review comments of Architect/Engineer will be shown on the transparency when it is returned to the Contractor. The Contractor may make and distribute such copies as are required for his purposes and send two (2) copies to Architect/Engineer after approvals are acquired.

6. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
  - a. Dimensions.
  - b. Identification of products.
  - c. Fabrication and installation drawings.
  - d. Roughing-in and setting diagrams.
  - e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
  - f. Shopwork manufacturing instructions.
  - g. Templates and patterns.
  - h. Schedules.
  - i. Notation of coordination requirements.
  - j. Notation of dimensions established by field measurement.
  - k. Relationship to adjoining construction clearly indicated.
  - l. Seal and signature of professional engineer if specified.
  - m. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.
7. Revise subparagraph below to establish a standard sheet size and format. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches (215 by 280 mm) but no larger than 30 by 40 inches (750 by 1000 mm).
8. Subparagraph below assumes Architect and Contractor will make copies from opaque print.

9. Number of Copies: Submit five opaque (bond) copies of each submittal. Engineer will return one copy.
- D. Samples: Provide sample(s) identical to the precise article proposed to be provided. Unless the precise color and pattern is specifically called out in the Contract Documents, and whenever a choice of color or pattern is available in the specified products, submit accurate color and pattern charts to the Architect/Engineer for selection. 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 appropriate Specification Section.
  3. 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.
  4. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and pat terns available.
    - a. Number of Samples: Submit two full sets of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Engineer will return submittal with options selected.

1. By pre arrangement in specific cases, a single sample may be submitted for review and, when approved, be installed in the Work at a location agreed upon by the Architect.
5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
- a. Number of Samples: Submit three (3) sets of Samples. Architect/Engineer will retain two Sample sets; remainder will be returned.
- E. Product Schedule or List: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location.
1. Number of Copies: Submit three (3) copies of product schedule or list, unless otherwise indicated. Architect/Engineer will return two copies.
- F. Submittals Schedule: Comply with requirements specified in Division 1 Section 013200 "Construction Progress Documentation."
- G. Application for Payment: Comply with requirements specified in Division 1 Section 012900 "Payment Procedures."
- H. Schedule of Values: Comply with requirements specified in Division 1 Section 012900 "Payment Procedures."
- I. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Use CSI Form 1.5A. or other form approved by County.



1. Number of Copies: Submit three copies of subcontractor list, unless otherwise indicated. Architect/Engineer will return two (2) copies.

## 2.2 INFORMATIONAL SUBMITTALS

- A. General: Prepare and submit Informational Submittals required by other Specification Sections.
  1. Number of Copies: Submit two copies of each submittal, unless otherwise indicated. Architect/Engineer will not return copies.
  2. Certificates and Certifications: Provide a notarized 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.
  3. Test and Inspection Reports: Comply with requirements specified in Division 1 Section 014000 "Quality Requirements."
- B. Coordination Drawings: Comply with requirements specified in Division 1 Section 013100 "Project Management and Coordination."
- C. Contractor's Construction Schedule: Comply with requirements specified in Division 1 Section 013200 "Construction Progress Documentation."
- D. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- E. Material Test Reports: Prepare 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.
- F. Preconstruction Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.

- G. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
- H. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.
- I. Construction Photographs: Comply with requirements specified in Division 1 Section 013233 "Photographic Documentation."

## 2.3 DELEGATED DESIGN

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
  - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect/Engineer.
- B. Delegated-Design Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit three copies of a statement, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
  - 1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

## PART 3 – EXECUTION

### 3.1 CONTRACTOR'S REVIEW

- A. 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 Engineer.

- 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/ENGINEER'S ACTION

- A. General: Architect/Engineer will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Action Submittals: Architect/Engineer will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect/Engineer will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:
  - 1. *Conforms*: When submittal meets or exceeds requirements.
  - 2. *Conforms as Noted*: When submittal has minor deficiencies that can be easily eliminated and re-submittal is not necessary.
  - 3. *Revise as Noted and Resubmit*: When the submittal is incomplete or it is uncertain that the material and equipment submitted can conform to project requirements.
  - 4. *Rejected, Resubmit*: When the material and equipment submitted cannot comply with the Specifications or drawings and other material and equipment must be submitted.
  - 5. *Review Not Required*: When Specification does not require a submittal, Project Manager's approval shall be obtained before taking this action. Reason for this action shall be stated.
- C. Informational Submittals: Architect/Engineer will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect/Engineer will forward each submittal to appropriate party.

- D. Partial submittals are not acceptable, will be considered nonresponsive, and will be returned without review.
- E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

**END OF SECTION 013300**

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for quality assurance and quality control.
  - 1. Reference various Division 1 Sections for additional information.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
  - 1. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and quality-control procedures that facilitate compliance with the Contract Document requirements.
  - 2. Requirements for Contractor to provide quality-assurance and quality-control services required by Architect, Engineer, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
- C. See all Divisions and Sections for specific test and inspection requirements.

1.2 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect/Engineer.

- C. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- D. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- E. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
  - 1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespeople of the corresponding generic name.
- F. Experienced: When used with an entity, "experienced" means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

### 1.3 CONFLICTING REQUIREMENTS

- A. General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Architect/Engineer for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as

appropriate, for the context of requirements. Refer uncertainties to Architect /Engineer for a decision before proceeding.

1.4 SUBMITTALS

- A. Qualification Data: For testing agencies specified in "Quality Assurance" Article 1.5, below, to demonstrate their capabilities and experience.
- B. Reports: Prepare and submit certified written reports that include the following:
  - 1. Date of issue.
  - 2. Project title and number.
  - 3. Name, address, and telephone number of testing agency.
  - 4. Dates and locations of samples and tests or inspections.
  - 5. Names of individuals making tests and inspections.
  - 6. Description of the Work and test and inspection method.
  - 7. Identification of product and Specification Section.
  - 8. Complete test or inspection data.
  - 9. Test and inspection results and an interpretation of test results.
  - 10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
  - 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
  - 12. Name and signature of laboratory inspector.
  - 13. Laboratory licenses and certifications.

14. Recommendations on retesting and re-inspecting.

- C. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

#### 1.5 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of Successful in-service performance.
- C. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

#### 1.6 QUALITY CONTROL

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
1. Owner may engage a third-party independent environmental consultant to provide professional environmental consulting and air monitoring during asbestos and lead removal, if needed.



2. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
  3. Costs for retesting and re-inspecting removal, abatement, demolition or construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.
- B. Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
    - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
  2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
  3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
  4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
  5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled

components and equipment installation, including service connections. Report results in writing as specified in Division 01 Section "Submittal Procedures."

- D. Retesting/Re-inspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and re-inspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- E. Testing Agency Responsibilities: Cooperate with Architect/Engineer and Contractor in performance of duties. Provide qualified personnel to perform required tests and sections.
1. Notify Architect/Engineer and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
  2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
  3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
  4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
  5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
  6. Do not perform any duties of Contractor.
- F. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.

2. Incidental labor and facilities necessary to facilitate tests and inspections.
  3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
  4. Facilities for storage and field curing of test samples.
  5. Delivery of samples to testing agencies.
  6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
  7. Security and protection for samples and for testing and inspecting equipment at Project site.
- G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.

#### 1.7 SPECIAL TESTS AND INSPECTIONS

- A. Special Tests and Inspections: Conducted by a qualified testing agency as required by authorities having jurisdiction, as indicated in individual Specification Sections, and as follows:
1. Notifying Architect/Engineer and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
  2. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect/Engineer with copy to Contractor and to authorities having jurisdiction.
  3. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.

4. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
5. Retesting and re-inspecting corrected work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
  1. Provide materials and comply with installation requirements specified in other Specification Sections. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.
  2. Comply with the Contract Document requirements for Division 1 Section 017329 "Cutting and Patching."
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

**END OF SECTION 014000**

## PART 1 - GENERAL

### 1.1 DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. "Approved": When used to convey Architect's/Engineer's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.
- C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."
- D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. "Install": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
- H. "Provide": Furnish and install, complete and ready for the intended use.
- I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

### 1.2 INDUSTRY STANDARDS

- A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.
- C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
  - 1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

### 1.3 ABBREVIATIONS AND ACRONYMS

Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list.

AA	Aluminum Association, Inc. (The)
AAADM	American Association of Automatic Door Manufacturers
AABC	Associated Air Balance Council
AAMA	American Architectural Manufacturers Association
AASHTO	American Association of State Highway & Transportation Officials
AATCC	American Association of Textile Chemists & Colorists (The)
ABAA	Air Barrier Association of America
ABMA	American Bearing Manufacturers Association
ACI	ACI International (American Concrete Institute)
ACPA	American Concrete Pipe Association
AEIC	Association of Edison Illuminating Companies, Inc. (The)
AF & PA	American Forest & Paper Association
AGA	American Gas Association
AGC	Associated General Contractors of America (The)
AHA	American Hardboard Association (Now part of CPA)
AHAM	Association of Home Appliance Manufacturers
AI	Asphalt Institute
AIA	American Institute of Architects (The)
AISC	American Institute of Steel Construction
AISI	American Iron & Steel Institute
AITC	American Institute of Timber Construction
AWCMA	American Window Covering Manufacturers Association (Now WCSC)
AWI	Architectural Woodwork Institute
AWPA	Architectural Woodwork Institute
AWS	American Welding Society
AWWA	American Water Works Association
BHMA	Builders Hardware Manufacturers Association
BIA	Brick Industry Association (The)
BICSI	BICSI
BIFMA	BIFMA International (Business and Institutional Furniture Manufacturer's Association International)
CCC	Caret Cushion Council
CDA	Copper Development Association
CEA	Canadian Electricity Association
CFFA	Chemical Fabrics & Film Association, Inc.

ATLANTIC COUNTY

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CGA	Compressed Gas Association
CIMA	Cellulose Insulation Manufacturers Association
CISCA	Ceilings & Interior Systems Construction Association
CISPI	Cast Iron Soil Pipe Institute
CLFMI	Chain Link Fence Manufacturers Institute
CRRC	Cool Roof Rating Council
CPA	Composite Panel Association
CPPA	Corrugated Polyethylene Pipe Association
CRI	Carpet & Rug Institute (The)
CRSI	Concrete Reinforcing Steel Institute
CSA	Canadian Standards Association
CSA	CSA International (Formerly IAS – International Approval Services)
CSI	Cast Stone Institute
CSI	Construction Specifications Institute (The)
CSSB	Cedar Shake & Shingle Bureau
CTI	Cooling Technology Institute (Formerly Cooling Tower Institute)
DHI	Door & Hardware Institute
EIA	Electronic Industries Alliance
EIMA	EIFS Industry Members Association
EJCDC	Engineers Joint Contract Documents Committee
EJMA	Expansion Joint Manufacturers Association, Inc.
ESD	ESD Association
FM	FM Approvals
FM Global	FM Global (Formerly FMG-FM Global)
FMRC	Factory Mutual Research (Now FM Global)
FRSA	Florida Roofing, Sheet Metal & Air Conditioning Contractors Association, Inc.
FSA	Fluid Sealing Association
FSC	Forest Stewardship Council
GA	Gypsum Association
GANA	Glass Association of North America
GRI	(Now GSI)
GS	Green Seal
GSI	Geosynthetic Institute
HI	Hydraulic Institute
HI	Hydronics Institute
HMMA	Hollow Metal Manufacturers Association (Part of NAAMM)
HPVA	Hardwood Plywood & Veneer Association
HPW	H.P. White Laboratory, Inc.
IAS	International Approval Services (Now CSA International)
IBF	International Badminton Federation
ICEA	Insulated Cable Engineers Association, Inc.

ICRI	International Concrete Repair Institute, Inc.
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical & Electronics Engineers, Inc. (The
IESNA	Illuminating Engineering Society of North America
IEST	Institute of Environmental Sciences & Technology
IGCC	Insulating Glass Certification Council
IGMA	Insulating Glass Manufacturers Alliance
ILI	Indiana Limestone Institute of America, Inc.
ISO	International Organization for Standardization
ISSFA	International Solid Surface Fabricators Association
ITS	Intertek Testing Service NA
ITU	International Telecommunication Union
KCMA	Kitchen Cabinet Manufacturers Association
LMA	Laminating Materials Association (Now part of CPA)
LPI	Lighting Protection Institute
MBMA	Metal Building Manufacturers Association
MFMA	Maple Flooring Manufacturers Association, Inc.
MFMA	Metal Framing Manufacturers Association, Inc.
MH	Material Handling (Now MHIA)
MHIA	Material Handling Industry of America
MIA	Marble Institute of America
MPI	Masters Painters Institute
MSS	Manufacturers Standardization Society of the Valve & Fittings Industry, Inc.
NAAMM	National Association of Architectural Metal Manufacturers
NACE	NACE International (National Association of Corrosion Engineers International
NADCA	National Air Duct cleaners Association
NAGWS	National Association for Girls & Women in Sport
NAIMA	North American Insulation Manufacturers Association
NBGQA	National Building Granite Quarries Association, Inc.
NCAA	National Collegiate Athletic Association (The)
NCMA	National Concrete Masonry Association
NCPI	National Clay Pipe Institute
NCTA	National Cable & Telecommunications Association
NEBB	National Environmental Balancing Bureau
NECA	National Electrical Contractors Association
NELMA	Northeastern Lumber Manufacturers Association
NEMA	National Electrical Manufacturers Association
NETA	Inter-National Electrical Testing Association
NFHS	National Federation of State High School Associations
NFPA	NFPA (National Fire Protection Association)



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NFRC	National Fenestration Rating Council
NGA	National Glass Association
NHLA	National Hardwood Lumber Association
NLGA	National Lumber Grades Authority
NOFMA	The Wood Flooring Manufacturers Association (Formerly National Oak Flooring Manufacturers Association)
NRCA	National Roofing Contractors Association
NRMCA	National Ready Mixed Concrete Association
NSF	NSF International (National Sanitation Foundation International)
NSSGA	National Stone, Sand & Gravel Association
NTMA	National Terrazzo & Mosaic Association, Inc. (The)
NTMA	National Tile Roofing Manufacturers Association (Now TRI)
NWWDA	National Wood Windows & Door Association (Now WDMA)
OPL	Omega Point Laboratories, Inc. (Now ITS)
PCI	Precast/Prestressed Concrete Institute
PDCA	Painting & Decorating Contractors of America
PDI	Plumbing & Drainage Institute
PGA	PVC Geomembrane Institute
PLANET	Professional Landcare Network (Formerly ACLA – Associated Landscape Contractors of America)
PTI	Post-Tensioning Institute
RCSC	Research Council on Structural Connections
RFCI	Resilient Floor Covering Institute
RIS	Redwood Inspection Service
SAE	SAE International
SDI	Steel Deck Institute
SDI	Steel Door Institute
SEFA	Scientific Equipment & Furniture Association
SEI/ASCE	Structural Engineering Institute/American Society of Civil Engineers (See ASCE)
SGCC	Safety Glazing Certification Council
SIA	Security Industry Association
SIGMA	Sealed Insulating Glass Manufacturers Association (Now IGMA)
SJI	Steel Joist Institute
SMA	Screen Manufacturers Association
SMACNA	Sheet Metal & Air Conditioning Contractors National Association
SMPTE	Society of Motion Picture & Television Engineers
SPFA	Spray Polyurethane Foam Alliance (Formerly SPI/SPFD – The Society of the Plastics Industry, Inc.; Spray Polyurethane Foam Division)
SPIB	Southern Pine Inspection Bureau (The)
SPRI	Single Ply Roofing Industry
SSINA	Specialty Steel Industry of North America

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SSPC	The Society for Protective Coatings
STI	Steel Tank Institute
SWI	Steel Window Institute
SWRI	Sealant, Waterproofing, & Restoration Institute
TCA	Tile Council of America, Inc.
TIA/EIA	Telecommunications Industry Association/Electronic Industries Alliance
TMS	The Masonry Society
TPI	Truss Plate Institute, Inc.
TPI	Turfgrass Producers International
TRI	Tile Roofing Institute
UL	Underwriters Laboratories, Inc.
UNI	Uni-Bell PVC Pipe Association
USAV	USA Volleyball
USGBC	U.S. Green Building Council
USITT	United States Institute for Theatre Technology, Inc.
WASTEC	Waste Equipment Technology Association
WCLIB	West Coast Lumber Inspection Bureau
WCMA	Window Covering Manufacturers Association (Now WCSC)
WCSC	Window Covering Safety Council (Formerly WCMA – Window Covering Manufacturers Association)
WDMA	Window & Door Manufacturers Association (Formerly NWWDA – National Wood Window & Door Association)
WI	Woodwork Institute (Formerly WIC – Woodwork Institute of California)
WIC	Woodwork Institute of California (Now WI)
WMMPA	Wood Moulding & Millwork Producers Association
WSRCA	Western States Roofing Contractors Association
WWPA	Western Wood Products Association

Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list.

BOCA	BOCA International, Inc. (See ICC)
IAPMO	International Association of Plumbing & Mechanical Officials
ICBO	International Conference of Building Officials (See ICC)
ICBO ES	ICBO Evaluation Service, Inc. (See ICC-ES)
ICC	International Code Council
ICC-ES	ICC Evaluation Service, Inc.
SBCCI	Southern Building Code Congress International, Inc. (See ICC)
UBC	Uniform Building Code (See ICC)

Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list.

CE	Army Corps of Engineers
CPSC	Consumer Product Safety Commission
DOC	Department of Commerce
DOD	Department of Defense
DOE	Department of Energy
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FCC	Federal Communication Commission
FDA	Food & Drug Administration
GSA	General Services Administration
HUD	Department of Housing & Urban Development
LBL	Lawrence Berkeley National Laboratory
NCHRP	National Cooperative Highway Research Program (See TRB)
NIST	National Institute of Standards & Technology
OSHA	Occupational Safety & Health Administration
PBS	Public Building Service (See GSA)
PHS	Office of Public Health & Science
PHS	Office of Public Health & Science
RUS	Rural Utilities Service (See USDA)
SD	State Department
TRB	Transportation Research Board
USDA	United States Department of Agriculture
USPS	United States Postal Service

Standard and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and regulations in the following list.

ADAAG	American with Disabilities Act (ADA) Architectural Barriers Act (ABA)
CFR	Code of Federal Regulations
DOD	Department of Defense Military Specifications & Standards
DSCC	Defense Supply Center Columbus (See FS)
FED-STD	Federal Standard (See FS)
FS	Federal Specification
FTMS	Federal Test Method Standard (See FS)
MIL	(See MILSPEC)
MIL-STD	(See MILSPEC)

MILSPEC Military Specifications & Standards  
UFAS Uniform Federal Accessibility Standards

State Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list.

CBHF State of California, Department of Consumer Affairs Bureau of Home  
Furnishings & Thermal Insulation  
CCR California Code of Regulations  
CPUC California Public Utilities Commission  
TFS Texas Forest Service, Forest Resource Development

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

**END OF SECTION 014200**

## PART 1 – GENERAL

### 1.1 RELATED DOCUMENTS

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

### 1.2 SUMMARY

- A. Section Includes:
  - 1. Scaffolding as required for work access to the building elevations and roof and protection to surrounding area, pedestrians and street traffic, including:
    - a. Filing with all local and state agencies for approvals to erect scaffolding
    - b. Scaffolding for work access to the building interior & exterior
    - c. Protection of areas surrounding the building
    - d. Coordination with other construction work on-going and planned in the immediate area
  - 2. Interior protection to provide tenting and dust control for ceiling framework and formwork removal, concrete ceiling repairs and painting & installation of supports for pipes, conduit, ducts, etc.
    - a. Protect all wall and floor surfaces.
    - b. Protect piping, conduit, ducts, fixtures and fittings.
    - c. Provide temporary support of all piping, conduit, ducts, fixtures and fittings during removal processes.

## PART 2 - PRODUCTS

(NOT USED)

## PART 3 - EXECUTION

### 3.1 PROTECTION

- A. Please be advised that special care and consideration is to be given to pedestrians, street traffic, and building occupants. The following steps must be taken so as to provide these minimum precautions against injury and property damage.
  - 1. The area below and surrounding any scaffold where the work is being done must be protected using barricade assemblies for the full sidewalk width.
  - 2. Provisions for watchmen duties the sole responsibility of the contractor, and shall be made as required to insure safety.
  - 3. No work will be allowed to be conducted on weekends or holidays without written permission from the Owner.
- B. It is recommended that the base of fixed scaffold have plywood protection to prevent climbing.
- C. Building security during construction: Access to scaffolding and access to the building from scaffolding by intruders must be prevented, by appropriate means.
- D. Provision for fire access to the building must be maintained at all times.
- E. The contractor is responsible for obtaining and paying for the cost of all required permits and approvals.

### 3.2 EXECUTION OF WORK

- A. Provide scaffold at the exterior of building as required, to execute the work as outlined by the contract documents.
- B. Provide scaffold at the interior of building as required, to execute all necessary work as outlined by the contract documents.
- C. All platform scaffolds must have solid board backs and ends at least 24" high and solid board fronts at least 12" high to minimize the possibility of

tools and materials from being dropped or kicked off of the scaffold.  
Mobile and/or hanging scaffolds may be used only with prior approval of  
the Owner before the bid is submitted.

- E. Scaffolding design and erection is the responsibility of the Contractor.  
The Contractor shall submit scaffolding plan and sequence to Township of  
Hamilton, City of Mays Landing, Architect/Engineer and County, for review  
and approval.

**END OF SECTION - 015001**

## PART 1 – GENERAL

### 1.1 SUMMARY

- A. This 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; product substitutions; and comparable products.
- B. See Division 1 Section 017700 "Closeout Procedures" for submitting warranties for Contract closeout, and other Division 1 Sections that may apply.
- C. See ALL Divisions of the Technical Specifications for specific requirements for warranties on products and installations specified to be warranted.

### 1.2 DEFINITIONS

- A. Products: Items purchased 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, except that products consisting of recycled-content materials are allowed, unless explicitly stated otherwise. Products salvaged or recycled from other projects are not considered new products.
  - 3. Comparable Product: Product that is demonstrated and approved through submittal process, or where indicated as a product substitution, 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. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
- C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design," 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 other named manufacturers.

### 1.3 SUBMITTALS

- A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
  - 1. Substitution Request Form: Use CSI Form 13.1A or other form acceptable to Architect/ Engineer/ County.
  - 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
    - a. Statement indicating why specified material or product cannot be provided.
    - b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
    - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Significant qualities may include

- attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
- d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
  - e. Samples, where applicable or requested.
  - f. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
  - g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
  - h. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.
  - i. Detailed comparison of Contractor's Construction Schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.
  - j. Cost information, including a proposal of change, if any, in the Contract Sum.
  - k. Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.
  - l. Contractor's waiver of rights to additional payment or time that may subsequently become necessary

because of failure of proposed substitution to produce indicated results.

3. Architect's/Engineer's Action: If necessary, Architect/Engineer will request additional information or documentation for evaluation within 5 days of receipt of a request for substitution. Architect/Engineer will notify Contractor of acceptance or rejection of proposed substitution within 5 days of receipt of request, or five days of receipt of additional information or documentation, whichever is later.
  - a. Use product specified if Architect/Engineer cannot make a decision on use of a proposed substitution within time allocated.
- B. Comparable Product Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
  1. Architect's/Engineer's Action: If necessary, Architect/Engineer will request additional information or documentation for evaluation within five days of receipt of a comparable product request. Architect/Engineer will notify Contractor of approval or rejection of proposed comparable product request within five days of receipt of additional information or documentation, whichever is later.
    - a. Form of Approval: As specified in Division 01 Section 013300 "Submittal Procedures."
    - b. Use product specified if Architect/Engineer cannot make a decision on use of a comparable product request within time allocated.
- C. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 01 Section 013300 "Submittal Procedures." Show compliance with requirements.

1.4 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.

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. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
  2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
  3. 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.
  4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure 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 materials in a manner that will not endanger Project structure.

3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
4. Store cementitious products and materials on elevated platforms.
5. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
7. 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:** Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
  2. **Special Warranty:** Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.
- B. **Special Warranties:** Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.
  1. **Manufacturer's Standard Form:** Modified to include Project-specific information and properly executed.

2. Specified Form: When specified forms are included with the Specifications, prepare a written document using appropriate form properly executed.
  3. Refer to all Divisions of the Technical Specifications for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Division 01, including but not limited to Section 013300 "Submittal Procedure" and Section 017700 "Close out Procedures."

## PART 2 – PRODUCTS

### 2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.
1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
  2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
  3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
  4. Where products are accompanied by the term "as selected," Architect/Engineer will make selection.
  5. Where products are accompanied by the term "match sample," sample to be matched is Architect's/Architect.

6. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.

B. Product Selection Procedures:

1. Product: Where Specifications name a single product and manufacturer, provide the named product that complies with requirements.
2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements.
3. Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.
4. Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.
5. Available Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
6. Available Manufacturers: Where Specifications include a list of manufacturers, provide a product by one of the manufacturers listed, or an unnamed manufacturer, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
7. First two subparagraphs below correspond to nonrestrictive specifications described in CSI's "Manual of Practice" and require specifying salient characteristics of desired products.

8. Basis-of-Design Product: Where Specifications name a product and include a list of manufacturers, provide the specified product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product by the other named manufacturers.
9. Visual Matching Specification: Where Specifications require matching an established Sample, select a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
  - a. If no product available within specified category matches and complies with other specified requirements, comply with provisions in Part 2 "Product Substitutions" Article for proposal of product.
10. Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product that complies with other specified requirements.
  - a. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Architect/Engineer will select color, pattern, density, or texture from manufacturer's product line that does not include premium items.
  - b. Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, Architect/Engineer will select color, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

## 2.2 PRODUCT SUBSTITUTIONS



- A. Timing: Architect/Engineer will consider requests for substitution if received within 10 days after commencement of the Work. Requests received after that time may be considered or rejected at discretion of Architect/Engineer
- B. Conditions: Architect/Engineer will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect/Engineer will return requests without action, except to record noncompliance with these requirements:
1. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect/Engineer for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
  2. Requested substitution does not require extensive revisions to the Contract Documents.
  3. Requested substitution is consistent with the Contract Documents and will produce indicated results.
  4. Substitution request is fully documented and properly submitted.
  5. Requested substitution will not adversely affect Contractor's Construction Schedule.
  6. Requested substitution has received necessary approvals of authorities having jurisdiction.
  7. Requested substitution is compatible with other portions of the Work.
  8. Requested substitution has been coordinated with other portions of the Work.
  9. Requested substitution provides specified warranty.

## 2.3 COMPARABLE PRODUCTS

- A. Conditions: Architect/Engineer will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect /Engineer will return requests without action, except to record noncompliance with these requirements:
1. Evidence that the proposed product does not require extensive revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
  2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
  3. Evidence that proposed product provides specified warranty.
  4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
  5. Samples, if requested.

PART 3 - EXECUTION (Not Used)

**END OF SECTION 016000**

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:
  - 1. Construction layout.
  - 2. General installation of products.
  - 3. Progress cleaning.
  - 4. Protection of installed construction.
  - 5. Correction of the Work.
- B. See Division 1 Section 017700 "Closeout Procedures" for submitting Project Record Documents, recording of Owner-accepted deviations and final cleaning.
- C. See other Division 1 Sections for more specific information and requirements that may apply.

1.2 SUBMITTALS

- A. Landfill Receipts (Not Used)

PART 2 - PRODUCTS (Not Used)

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of mechanical and electrical systems and other construction affecting the Work.

- B. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of underground utilities and other construction affecting the Work.

### 3.2 PREPARATION

- A. Existing Utility Information: Furnish information to local utility and Owner if it is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Architect/Engineer. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents. Submit requests on CSI Form 13.2A, "Request for Interpretation."

### 3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings. If discrepancies are discovered, notify Architect/Engineer promptly.

### 3.4 INSTALLATION

- A. Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- F. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.
- G. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- H. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

### 3.5 **PROGRESS CLEANING**

- A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.**
  - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
  - 2. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F (27 deg C).

3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
  4. Because there will be County and public activity adjacent to the work site, the Contractor shall be required to keep the work site clean at all times.
  5. Any debris or pieces of material larger than one (1) cubic inch must be raked up and removed from the site at the end of each work day. Minimize chances for objects to be picked up and thrown.
  6. Trash must not be allowed to blow into surrounding properties.
  7. All trash receptacles and dumpsters must be covered with fixed tarp.
  8. Power washing must not contain any oil based chemicals.
- B. Site: The Contractor shall maintain the premises and job site in a neat and orderly condition and keep free from accumulations of waste materials and rubbish during the entire construction period.
1. Remove all crates, cartons, rubbish and other flammable waste materials and/or trash from the site.
  2. Clean-up shall occur as continual work item with attention to it on a daily basis. This work shall be to the satisfaction of the Architect/ Engineering/Owner.
  3. Care shall be taken by workmen not to mark, soil or otherwise deface any finished surfaces. In the event that any finished surface becomes defaced in any way by mechanics or workmen, the Contractor shall clean and restore such surfaces to their original condition as approved by the Owner and Architect.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

1. Remove liquid spills promptly.
  2. Broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If none recommended, use non-hazardous cleaning materials that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I. Do not stockpile any material on the roof or in the building.
- J. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- K. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.6 STARTING AND ADJUSTING (Not Used)

3.7 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

3.8 CORRECTION OF THE WORK

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 01 Section 017329 "Cutting and Patching."
  - 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Restore permanent facilities used during construction to their specified condition.
- C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
- D. Remove and replace chipped, scratched, and broken glass or reflective surfaces.
- E. Repair and/or touch-up, etc. all areas, interior, exterior and adjacent to the Catering Hall damaged during construction and restore to original condition prior to start of project. This includes floors, walls, ceilings, doors, ramps, stairs, windows, landscape, pathways, driveways, etc.

**END OF SECTION 017300**



## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.
- B. Contractor will be working immediately adjacent to occupied space(s). All reasonable precautions must be taken to avoid disruption to the employees and public in their use of the Complex.

### 1.2 SUMMARY

- A. Section Includes:
  - 1. Cutting and patching as required to complete the work indicated in the plans.
- B. Refer to Technical Specifications Divisions and Bid Drawings for further information.

### 1.3 SUBMITTALS

- A. Cutting and Patching Methodology: Where required by the plans for specifications, or as requested by the Architect, submit methodology and procedures for cutting and patching before proceeding.
  - 1. Describe the methodology and extent of cutting and patching required, how it is to be performed, and temporary shoring and bracing methods, as required.
  - 2. List products to be used and firms or entities that will perform Work.
  - 3. Indicate where in the Project Schedule cutting and patching is to be performed.

### 1.4 QUALITY ASSURANCE

- A. Requirements for Structural Elements: Do not cut and patch structural elements in a manner that would reduce their load-carrying capacity or load-deflection ratio.
  - 1. Obtain approval of the cutting and patching methods before cutting and patching the following elements:

- a. Structural concrete and concrete slabs
  - b. Lintels.
  - c. Concrete and Masonry façade exterior walls
  - d. Asphalt pavement
- B. Operational and Safety Limitations: Do not cut and patch operating elements or safety related components in a manner that would result in reducing their capacity to perform as intended, or result in increased maintenance, or decreased operational life or safety.
- C. Visual Requirements: Do not cut and patch construction exposed on the exterior or in occupied spaces, in a manner that would, in the Architect's opinion, reduce the building's aesthetic qualities, or result in visual evidence of cutting and patching.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Comply with requirements of individual specification sections as applicable.
- B. Existing Materials: Use materials that are identical to existing materials. Where exposed surfaces are involved, use materials that match existing adjacent surfaces to the fullest extent possible with regard to visual effect. Use materials whose installed performance will equal or surpass that of existing materials.

## PART 3 - EXECUTION

### 3.1 INSPECTION

- A. Prior to commencing work, examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed. Take corrective action before proceeding, if unsafe or unsatisfactory conditions are encountered.
  - 1. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

### 3.2 PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut to insure the integrity of building elements or systems to remain prior to cutting activities.
- B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions during cutting and patching operations.
- C. Avoid interference with use of or passage to adjoining areas.
- D. Take all precautions necessary to avoid cutting any pipe or conduit serving the building.

### 3.3 PERFORMANCE

- A. General: Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.
  - 1. Cut existing construction to provide for installation of other components or performance of other construction activities and the subsequent fitting and patching required to restore surfaces to their original condition.
- B. Cutting: Cut existing construction using methods least likely to damage elements to be retained or adjoining construction.
  - 1. In general, use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut holes and slots neatly to size required with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
  - 2. To avoid marring existing finished surfaces, cut or drill from the finished side.
  - 3. Cut through concrete and masonry using a carborundum saw or diamond core drill.
  - 4. Comply with requirements of applicable Sections of Division 2 where cutting and patching requires excavating and backfilling.
  - 5. Comply with all current OSHA requirements for dust containment and worker protection.
  - 5. By-pass utility services such as pipe or conduit, before cutting, where services are shown or required to be removed, relocated or

abandoned. Cut-off pipe or conduit in walls or partitions to be removed. Cap, valve or plug and seal the remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after by-passing and cutting.

- C. Cutting Asphalt Pavement:
1. Sweep – Clear the working area by sweeping the debris like pebbles and rocks to ensure that your saw will be safe during cutting.
  2. Mark the Cutting Lines – Using a chalk line, mark the area and path the pavement to be cut by denting it with an old screwdriver and a hammer.
  3. Making the Cuts – Check how thick the pavement is. Then, set the blade to the desired depth. It is important to do a straight cut then stop and lift the blade for the next cutting position. While the blade is still running during [asphalt cutting](#), remember never to turn the saw because this will only break the blade. Carefully remove the damaged portion.
- D. Patching: Fill, repair, and finish affected elements and surfaces, following cutting operations or performance of other work. Patch with durable invisible seams.
1. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction to eliminate evidence of patching and refinishing.
  2. Where removal of walls or partitions extends one finished area into another, patch and repair floor, wall and ceiling surfaces to provide an even surface of uniform color and appearance.
    - a. Where patching occurs in a smooth painted surface, extend final paint coat over entire unbroken containing the patch, after the patched area has received primer and second coat.
  3. Patch exterior building walls in a manner that restores the enclosure to a weather-tight condition and is consistent with requirements for the original exterior materials.

**END OF SECTION - 017329**

## PART 1 - GENERAL

### 1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for the following:
  - 1. Recycling nonhazardous demolition and construction waste.
  - 2. Disposing of nonhazardous demolition and construction waste.
- B. Reference Division 1 Sections for further information and requirements for disposition of hazardous waste.
- C. See Division 2 Section 020700 “Selective Demolition & Removals” for disposition of waste resulting from site clearing and removal of above- and below-grade improvements.
- D. Review other Divisions for other information and/or requirements.

### 1.2 DEFINITIONS

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
- C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
- D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
- E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.

- F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

### 1.3 PERFORMANCE GOALS

- A. Salvage/Recycle Goals: Owner's goal is to salvage and recycle as much nonhazardous demolition and construction waste as possible.

### 1.4 SUBMITTALS

- A. Waste Management Plan: Submit three (3) copies of plan within 10 days of date of executed contract and issuance of the Notice to Proceed.
- B. Waste Reduction Progress Reports: Not Required.
- C. Waste Reduction Calculations: Not Required.
- D. Recycling and Processing Facility Records: Provide documents indicating receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. The GC is responsible for documenting this.
- E. Landfill and Incinerator Disposal Records: Provide documents indicating receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. The GC is responsible for documenting this.
- F. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered. The GC is responsible for documenting this.

### 1.5 QUALITY ASSURANCE

- A. Waste Management Conference: Not Required.

## PART 2 - PRODUCTS (Not Used)

## PART 3 - EXECUTION

3.1 RECYCLING DEMOLITION AND CONSTRUCTION WASTE, GENERAL

- A. General: Recycle paper and beverage containers used by on-site workers.
- B. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials shall accrue to Contractor.
- C. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical.
  - 1. Provide appropriately marked containers or bins for controlling recyclable waste until they are removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.
  - 2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
  - 3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
  - 4. Store components off the ground and protect from the weather.
  - 5. Remove recyclable waste off Owner's property and transport to recycling receiver or processor.

3.2 RECYCLING DEMOLITION WASTE

- A. Asphaltic Concrete Paving: Break up and transport paving to asphalt-recycling facility.
- B. Concrete: Remove reinforcement and other metals from concrete and sort with other metals.
  - 1. Pulverize concrete to maximum 4-inch (100-mm) size.
- C. Masonry: Remove metal reinforcement, anchors, and ties from masonry and sort with other metals.

1. Pulverize masonry to maximum 4-inch (100-mm) size.
  2. Clean and stack undamaged, whole masonry units on wood pallets.
- D. Wood Materials: Sort and stack members according to size, type, and length. Separate lumber, engineered wood products, panel products, and treated wood materials.
- E. Metals: Separate metals by type.
1. Structural Steel: Stack members according to size, type of member, and length.
  2. Remove and dispose of bolts, nuts, washers, and other rough hardware.
- F. Asphalt Shingle Roofing: Separate organic and glass-fiber asphalt shingles and felts. Remove and dispose of nails, staples, and accessories.
- G. Gypsum Board: Stack large clean pieces on wood pallets and store in a dry location. Remove edge trim and sort with other metals. Remove and dispose of fasteners.
- H. Acoustical Ceiling Panels and Tile: Stack large clean pieces on wood pallets and store in a dry location.
1. Separate suspension system, trim, and other metals from panels and tile and sort with other metals.
- I. Carpet and Pad: Roll large pieces tightly after removing debris, trash, adhesive, and tack strips.
1. Store clean, dry carpet and pad in a closed container or trailer provided by Carpet Reclamation Agency or carpet recycler.
- J. Equipment: Drain tanks, piping, and fixtures. Seal openings with caps or plugs. Protect equipment from exposure to weather.
- K. Plumbing Fixtures: Separate by type and size.



- L. Piping: Reduce piping to straight lengths and store by type and size. Separate supports, hangers, valves, sprinklers, and other components by type and size.
- M. Lighting Fixtures: Separate lamps by type and protect from breakage.
- N. Electrical Devices: Separate switches, receptacles, switchgear, transformers, meters, panel boards, circuit breakers, and other devices by type.
- O. Conduit: Reduce conduit to straight lengths and store by type and size.

### 3.3 RECYCLING CONSTRUCTION WASTE

- A. Packaging:
  - 1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
  - 2. Polystyrene Packaging: Separate and bag materials.
  - 3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
  - 4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.
- B. Site-Clearing Wastes: Chip brush, branches, and trees at landfill facility.
- C. Wood Materials:
  - 1. Clean Cut-Offs of Lumber: Grind or chip into small pieces.
  - 2. Clean Sawdust: Bag sawdust that does not contain painted or treated wood.
- D. Gypsum Board: Stack large clean pieces on wood pallets and store in a dry location.

3.4 DISPOSAL OF WASTE

- A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
  - 1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
  - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning: Do not burn waste materials.
- C. Disposal: Transport waste materials off Owner's property and legally dispose of them.

**END OF SECTION 017419**

PART 1 – GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
  - 1. Inspection procedures.
  - 2. Final cleaning.
- B. See Division 1 Section 012900 "Payment Procedures" for requirements for Applications for Payment for Substantial and Final Completion.
- C. See Division 1 Section 013100 "Project Management and Coordination" for information on record requirements.
- D. See Division 1 Section 013200 "Construction Progress Documentation" for submitting daily administrative requirements.
- E. See Division 1 Section 013233 "Photographic Documentation" for submitting Final Completion construction photographs and negatives.
- F. See Division 1 Section 013300 "Submittal Procedures" for final documentation requirements.
- G. See Division 1 Section 015000 "Temporary Facilities and Controls" for final changeover requirements.
- H. See Division 1 Section 016000 "Product Requirements" for warranties requirements.
- I. See Division 1 Section 017300 "Execution" for closeout requirements.
- J. See Division 1 Section 017839 "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.

- K. See ALL Divisions and Sections for specific closeout and special cleaning requirements for the Work in those Sections.

## 1.2 SUBSTANTIAL COMPLETION

***Project schedule requires Substantial Completion to occur fifty (50) consecutive calendar days (CCD) after Project Start Date. Otherwise the County may institute liquidated damages for every CCD until Substantial Completion is reached.***

- A. Preliminary Procedures: The County requires a Temporary Certificate of Occupancy (TCO), or Certificate of Occupancy (CO), or Certificate of Approval (CA) from the ruling construction code entity in order to consider the work substantially complete. Following issuance of the Certificate of Substantial Completion, the Contractor shall submit an Application for Payment. This application shall reflect any Certificates of Partial Substantial Completion issued previously for the County's use or occupancy of designated portions of the Work. Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.
  1. Obtain a certificate of approval, certificate of occupancy, or temporary certificate of occupancy from the appropriate permitting agency.
  2. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
  3. Advise Owner of pending insurance changeover requirements.
  4. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
  5. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
  6. Prepare and submit Project Record Documents, operation and maintenance manuals, Final Completion construction

- photographs, damage or settlement surveys, property surveys, and similar final record information.
7. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
  8. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
  9. Complete startup testing of systems.
  10. Submit test/adjust/balance records.
  11. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
  12. Advise Owner of changeover in heat and other utilities.
  13. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
  14. Complete final cleaning requirements, including touchup painting.
  15. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Architect/Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect/Engineer will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect /Engineer, that must be completed or corrected before certificate will be issued.
1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
  2. Results of completed inspection will form the basis of requirements for Final Completion.

1.3 FINAL COMPLETION

***Project schedule requires Final Completion to occur and all Close-out documents be delivered to the County within twenty-five (25) CCD's after Substantial Completion, or seventy-five (75) CCD's from Project Start Date. Otherwise the County may institute liquidated damages for every CCD until Final Completion & Closeout is reached.***

- A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:
1. Submit a final Application for Payment according to Division 01 Section 012900 "Payment Procedures."
  2. Submit certified copy of Architect's/Engineer's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect/Engineer. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
  3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
  4. Submit pest-control final inspection report and warranty.
  5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training videotapes.
- B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
- C. All punch list items must be completed within twenty-five (25) CCD from date of Substantial Completion.

- D. All closeout documentation must be delivered within twenty-five (25) CCD from date of Substantial Completion.

#### 1.4 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Preparation: Submit three copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
  - 1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
  - 2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.

### 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.

### PART 3 - EXECUTION

#### 3.1 FINAL CLEANING

- A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
  - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:

- a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
- b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
- c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
- d. Remove tools, construction equipment, machinery, and surplus material from Project site.
- e. Remove snow and ice to provide safe access to parking area.
- f. Clean exposed exterior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
- g. Remove labels that are not permanent.
- h. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
  1. Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
- i. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.



- j. Replace parts subject to unusual operating conditions.
  - k. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.
  - l. Leave Project clean and ready for occupancy.
- C. **Pest Control: Engage an experienced, licensed exterminator to make a final inspection and rid Project of rodents, insects, and other pests. Provide a written Pest Control report.**
- D. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

**END OF SECTION 017700**

PART 1 - GENERAL

Refer to all Divisions of the Technical Specifications and contract documents for detailed requirements of Project Record Documents. The

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for Project Record Documents, including the following:
  - 1. Record Drawings.
  - 2. Record Specifications.
  - 3. Record Product Data.
- B. See other Divisions and Sections including but not limited to 013100 Project Management & Coordination, 013233 Photographic Documentation, 013300 Submittal Procedures, 017700 Closeout Procedures, for specific requirements for Project Record Documents.

1.2 SUBMITTALS

- A. Record Drawings: Comply with the following:
  - 1. Number of Copies: Submit copies of Record Drawings as follows:
    - a. Initial Submittal: Submit one set of marked-up Record As-Built Prints for review.
    - b. Final Submittal: Submit three (3) set(s) of marked-up full-size (to scale) As-Built Record Prints & three (3) sets of PDF copies on CD's.
- B. Record Product Data: Submit two (2) hardcopies of each Product Data submittal in two (2) Close-Out Binders including all warranty information.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of blue- or black-line white prints of the Contract Drawings and Shop Drawings.
1. Preparation: Mark Record Prints to show the actual installation where installation varies from that shown originally.
    - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
    - b. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
  2. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.
  3. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
  4. **Note Requests for Information (RFI), Requests Against Allowance (RAA), Change Order (CO) numbers, and similar identification information of work different from (either added or deleted) to project bid documents where applicable.**
- B. Record Drawings: Immediately before inspection for Certificate of Substantial Completion, review marked-up Record Prints with Architect/Engineer. When authorized, prepare a two (2) full sets of As-Built Drawings, as follows:
1. Incorporate changes and additional information previously marked on Record Prints. Delete, redraw, and add details and notations where applicable.

2. Refer instances of uncertainty to Architect/Engineer for resolution.
- C. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
1. Record Prints: Organize Record Prints and newly prepared Record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
  2. Identification: As follows:
    - a. Project name.
    - b. Date.
    - c. Designation "PROJECT RECORD DRAWINGS."
    - d. Name of Architect/Engineer.
    - e. Name of Contractor.
  3. Record PDF Drawings: Organize PDF in the same manner as the As-Built Drawings, above.
  4. Identification of PDF Drawings: include the same identification as listed for As-Built Drawing, above.

## 2.2 RECORD PRODUCT DATA

- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.

2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
3. Note related Change Orders, Record Specifications, and Record Drawings where applicable.

2.3 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project.
- B. Maintenance of Record Documents and Samples: Store Record Documents and Samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's/Engineer's reference during normal working hours.

**END OF SECTION 017839**

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the contract, including general and supplementary conditions, Division 1 and other Divisions of the specification sections, apply to this section.

1.2 SUMMARY

- A. This section specifies the construction schedules and milestones governing the project summarized as “Catering Hall Deck Renovations” including all other specified and required miscellaneous work contained in the contract documents.
- B. The Contractor shall be responsible to coordinate the work and construction activities of both his “direct” employees and his “sub-contractors” to assure an efficient and timely installation of each phase of the work in accordance with the construction schedule specified herein.
- C. The Contractor shall furnish all required manpower to meet the construction schedule defined herein.
- D. The Contractor shall complete the following:
  - 1. All equipment, material and systems submittals shall be submitted to the Architect/Engineer for approval within fourteen (14) consecutive calendar days (CCD) of Project Start Date.
  - 2. Contractor shall provide the County and Architect/Engineer with the projected “lead times” of all new equipment and material immediately after receipt of approved submittals.
  - 3. A Construction Schedule and a Schedule of Values shall be prepared by the Contractor and submitted to the County and Architect/Engineer within fourteen (14) CCD’s of Project Start Date.
  - 4. The Architect/ Engineer and County will review and coordinate with Contractor any dates required for limited systems shutdowns. The County reserves the right to alter the Contractor’s proposed limited systems shutdown dates as may be necessary for the continued, uninterrupted operation of the Catering Hall and the Park’s facilities. The needs of the County will take precedence in determining the actual partial shutdown or disruption dates.

5. The Catering Hall and Park shall remain operational continuously through the completion of the project. The facility's existing fire alarm systems must remain fully operational during periods of building occupancy.
6. Contractor shall coordinate and officially notify the County of the dates of any required utility or systems shut-downs and transfer of services, a minimum of 14 CCD's in advance of the scheduled work.
7. All required work that may affect the areas adjacent to the Catering Hall must be scheduled with the County, specifically the Division of Parks, a minimum of two (2) weeks (14 CCD) in advance of when the work is to be performed.
8. All work required shall be performed while the Catering Hall and Park buildings are open and accessible to the County's employees and the public. System testing, adjusting and "trouble-shooting" must be completed so that normal operations are not interrupted.
9. This construction project MUST to be completed and closed out within one-hundred & five (105) CCD's after issuance of Notice to Proceed/Contract Execution Date, as determined at the preconstruction kick-off meeting as the Project Start Date. This 105 CCD schedule includes the following milestone deadlines:
  - a. Delivery of all Submittals to Architect/ Engineer within fourteen (14) CCD of Project Start Date.
  - b. Substantial Completion shall occur no later than fifty (50) CCD from project Start Date. A Temporary Certificate of Occupancy (TCO) or Certificate of Occupancy (CO) must be issued by the authorized jurisdiction as proof of Substantial Completion. The Architect/ Engineer will also issue a letter to the County upon acceptance of work upon Substantial Completion.
  - c. Final Completion and Close-out (Project Completion Date) shall occur no later than twenty-five (25) CCD after Substantial Completion.

018000 - CONSTRUCTION SCHEDULES AND MILESTONES  
June 24, 2019

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1. This milestone deadline is seventy-five (75) CCD after project Start Date.
  2. A CO must be issued by the authorized jurisdiction as proof of Final Completion. The Architect/ Engineer will also issue a letter upon acceptance of the project as complete, including the submission of all required and approved Close-out documentation.
- d. The County will be allowed an additional thirty (30) CCD after the Final Completion date for County administrative purposes only, i.e. processing the final payment. Note this thirty (30) CCD clock does not start until ALL closeout-documents have been received, reviewed & approved by the County.
1. This milestone deadline is one-hundred & five (105) CCD from Project Start date.
10. The County will apply liquidated damages of \$250.00 (two-hundred & fifty dollars) per CCD day for any contract work that does not meet milestone deadlines, including but not limited to completing punch list items and/or corrective work, submittal of complete close-out documentation, etc.
- E. Refer to Division 1 Section 011000 "Project Summary" for additional project phasing requirements, requirements of the owner's continuous occupation of the Catering Hall and Park during construction, project systems shutdown requirements and completion dates.
- F. As much as reasonably possible, Contractor shall keep demolition, construction or other "noise nuisance" tasks at a minimum. Contractor shall take note that the construction site is adjacent to County offices/facilities that will be in operation with both employees and public present.
- G. County shall hold a pre-construction meeting within fourteen (14) consecutive days from the County's written Notice to Proceed.

**END OF SECTION 018000**



PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

Drawings and General Provisions of Contract, including General and Supplementary Conditions and Division 1 Specifications Sections apply to work of this Section.

1.2 DESCRIPTION OF WORK:

- A. Extent of selective demolition work is indicated on drawings.

Types of Selective Demolition Work: Demolition requires the selective removal and subsequent off site disposal of the following but not limited to:

- a. Demolition of the cement board ceiling above the Deck for the installation of the spray foam insulation in between the roof rafters.
- b. Opening of holes or partial removal of the inside wall siding for the installation of blow-in insulation in the exterior walls.
- c. Partial demolition of the drywall ceiling in the basement for the installation of blow-in insulation below the deck floor.
- d. Demolition of the exterior door, sidelite, transom, and frame.
- e. Removal and reinstallation of existing Ipe deck boards and framing at the exterior threshold as required to provide a proper joint as indicated on drawings.
- f. Electrical, plumbing and mechanical demolition as indicated on drawings.
- g. Miscellaneous demolition as indicated on drawings or as required for new work.

Related work specified elsewhere:

1. Remodeling construction work and patching is included within the respective sections of specifications, including removal of materials for re-use and incorporated into remodeling or new construction.

**ATLANTIC COUNTY  
LENAPE PARK EAST - CATERING HALL DECK RENOVATIONS  
Hamilton Twp, Mays Landing, NJ  
June 24, 2019**

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**033000 – CONCRETE**

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2. Relocation of pipes, conduits, ducts, other mechanical and electrical work are specified by respective trades.

**1.3 SUBMITTALS:**

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

**1.4 JOB CONDITIONS**

- A. Occupancy: Owner will occupy areas of the building immediately adjacent to areas of selective demolition. Conduct selective demolition work in manner that will minimize need for disruption of Owner's normal operations. Provide minimum of 72 hours advance notice to Owner of demolition activities which will severely impact Owner's normal operations.
  - B. Refer to Summary of Work, Section 011000-1.
  - C. Condition of Structures: Owner assumes no responsibility for actual condition of items or structures to be demolished.
  - D. Protections: Provide temporary barricades and other forms of protection as required to protect construction and Owner's personnel and general public from injury due to selective demolition work, or as required by the local Fire Department.
1. Provide protective measures as required to provide free and safe passage of Owner's personnel and general public to and from occupied portions of building.
  2. Protect from damage existing finish work that is to remain in place and becomes exposed during demolition operations.
  3. Protect floors with suitable coverings when necessary.
  4. Remove protections at completion of work.

Damages: Promptly repair damages caused to adjacent facilities by demolition work at no cost to Owner.

Traffic: Conduct selective demolition operations and debris removal in a manner to ensure minimum interference with streets, walks, and other adjacent occupied or used facilities.

Do not close, block or otherwise obstruct walks or other occupied or used facilities without written permission from authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.

Utility Services: Maintain existing utilities indicated to remain, keep in service, and protect against damage during demolition operations.

1. Do not interrupt existing utilities serving occupied or used facilities, except when authorized in writing by authorities having jurisdiction. Provide temporary services during interruptions to existing utilities, as acceptable to governing authorities.

Environmental Controls: Use water sprinkling, temporary enclosures, and other suitable methods to limit dust and dirt rising and scattering in air to lowest practical level. Comply with governing regulations pertaining to environmental protection.

1. Do not use water when it may create hazardous or objectionable conditions such as ice, flooding, and pollution.

PART 2 - PRODUCTS (Not Applicable).

PART 3 - EXECUTION

3.1 INSPECTION:

- A. Prior to the initiation of work, the Contractor will walk the area(s) of demolition and become familiar with the job site conditions. The Contractor will report any potential problems to the Architect and Owner.

3.2 PREPARATION:

- A. Provide interior and exterior shoring, bracing, or support to prevent movement, settlement or collapse of structures to be demolished and adjacent facilities to remain.

Cease operations and notify the Owner's Representative immediately if safety of structure appears to be endangered. Take precautions to support structure until determination is made for continuing operations.

3.3 DEMOLITION:

- A. Perform selective demolition work in a systematic manner. Use such methods as required to complete work indicated on Drawings in accordance with demolition schedule and governing regulations.
- 1. Demolish existing work in small sections. Cut walls, ceilings, and other work noted as being removed, modified, or otherwise altered at junctures with construction to remain, using power-driven masonry saw or hand tools; do not use power-driven impact tools.
- 2. Locate demolition equipment throughout structure and promptly remove debris to avoid imposing excessive loads on supporting walls, floors or framing.

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

**3.4 DISPOSAL OF DEMOLISHED MATERIALS:**

- A. Remove debris, rubbish and other materials resulting from demolition operations from building site. Transport and legally dispose of materials off site, in strict accordance with Local, State and Federal EPA requirements.
- 1. If hazardous materials are encountered during demolition operations, comply with applicable regulations, laws, and ordinances concerning removal, handling and protection against exposure or environmental pollution.

**3.5 CLEAN-UP AND REPAIR:**

- A. Upon completion of demolition work, remove tools, equipment and demolished materials from site. Remove protections and leave interior areas broom clean.
- B. Repair demolition performed in excess of that required. Return structures and surfaces to remain to condition existing prior to commencement of selective demolition work. Repair adjacent construction of surfaces soiled or damaged by selective demolition work.

END OF SECTION 020700

PART 1) - GENERAL

a) RELATED DOCUMENTS

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

b) SUMMARY

i) This Section specifies cast-in place concrete, including formwork, reinforcing, mix design, placement procedures, and finishes.

ii) Cast-in-place concrete includes the following:

(1) Equipment raised platform.

c) SUBMITTALS

i) General: Submit the following according to Conditions of the Contract and Division 1 Specification Sections.

ii) Shop drawings for reinforcement detailing fabricating, bending, and placing concrete reinforcement. Comply with ACI 315 "Manual of Standard Practice for Detailing Reinforced Concrete Structures" showing bar schedules, stirrup spacing, bent bar diagrams, and arrangement of concrete reinforcement. Include special reinforcing required for openings through concrete structures.

iii) Shop drawings for formwork indicating fabrication and erection of forms for specific finished concrete surfaces. Show form construction including jointing, special form joints or reveals, location and pattern of form tie placement, and other items that affect exposed concrete visually.

(1) Architect's review is for general architectural applications and features only. Designing formwork for structural stability and efficiency is Contractor's responsibility.

iv) Samples of materials as requested by Architect, including names, sources, and descriptions, as follows:

(1) Normal weight aggregates.

(2) Form liners.

v) Material certificates in lieu of material laboratory test reports when permitted by Architect. Material

certificates shall be signed by manufacturer and Contractor, certifying that each material item complies with or exceeds specified requirements. Provide certification from admixture manufacturers that chloride content complies with specification requirements

d) **QUALITY ASSURANCE**

i) Codes and Standards: Comply with provisions of the following codes, specifications, and standards, except where more stringent requirements are shown or specified:

- (1) American Concrete Institute (ACI) 301, "Specifications for Structural Concrete for Buildings."
- (2) ACI 318, "Building Code Requirements for Reinforced Concrete."
- (3) Concrete Reinforcing Steel Institute (CRSI) "Manual of Standard Practice."

ii) Concrete Testing Service: Engage a testing agency acceptable to Architect to perform material evaluation tests and to design concrete mixes.

iii) Materials and installed work may require testing and retesting at any time during progress of Work. Tests, including retesting of rejected materials for installed Work, shall be done at Contractor's expense.

**PART 2) - PRODUCTS**

a) **FORM MATERIALS**

i) Forms for Exposed Finish Concrete: Plywood, metal, metal-framed plywood faced, or other acceptable panel-type materials to provide continuous, straight, smooth, exposed surfaces. Furnish in largest practicable sizes to minimize number of joints and to conform to joint system shown on drawings.

(1) Use overlaid plywood complying with U.S. Product Standard PS-1 "A-C or B-B High Density Overlaid Concrete Form," Class I.

(2) Use plywood complying with U.S. Product Standard PS-1 "B-B (Concrete Form) Plywood," Class I, Exterior Grade or better, mill-oiled and edge-sealed, with each piece bearing legible inspection trademark.

ii) Carton Forms: Biodegradable paper surface, treated for moisture-resistance, structurally sufficient to support weight of plastic concrete and other superimposed loads.

iii) Form Release Agent: Provide commercial formulation form release agent with a maximum of 350 g/L volatile organic compounds (VOCs) that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

iv) Form Ties: Factory-fabricated, adjustable-length, removable or snap-off metal form ties designed to prevent form deflection and to prevent spalling of concrete upon removal. Provide units that will leave no metal closer than 1-1/2 inches (38 mm) to the plane of the exposed concrete surface.

(1) Provide ties that, when removed, will leave holes not larger than 1 inch (25 mm) in diameter in the concrete surface.

**b) REINFORCING MATERIALS**

i) Reinforcing Bars: ASTM A 615 Grade 60 (ASTM A 615M Grade 400), deformed.

ii) Welded Wire Fabric: ASTM A 185, welded steel wire fabric.

iii) Supports for Reinforcement: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire fabric in place. Use wire bar-type supports complying with CRSI specifications.

(1) For exposed-to-view concrete surfaces where legs of supports are in contact with forms, provide supports with legs that are protected by plastic (CRSI, Class 1) or stainless steel (CRSI, Class 2).

**c) CONCRETE MATERIALS**

i) Portland Cement: ASTM C 150, Type I.

(1) Use one brand of cement throughout Project unless otherwise acceptable to Architect.

ii) Fly Ash: ASTM C 618, Type F.

iii) Normal-Weight Aggregates: ASTM C 33 and as specified. Provide aggregates from a single source for exposed concrete.

(1) For exposed exterior surfaces, do not use fine or coarse aggregates that contain substances that cause spalling.

(2) Local aggregates not complying with ASTM C 33 that have been shown to produce concrete of adequate strength and durability by special tests or actual service may be used when acceptable

to Architect.

iv) Lightweight Aggregates: ASTM C 330.

v) Water: Potable.

vi) Admixtures, General: Provide concrete admixtures that contain not more than 0.1 percent chloride ions.

vii) Air-Entraining Admixture: ASTM C 260, certified by manufacturer to be compatible with other required admixtures.

(1) Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the following:

(2) Products: Subject to compliance with requirements, provide one of the following:

- (a) Air-Tite, Cormix Construction Chemicals.
- (b) Air-Mix or Perma-Air, Euclid Chemical Co.
- (c) Sika AER, Sika Corp.

viii) Water-Reducing Admixture: ASTM C 494, Type A.

(1) Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the following:

(2) Products: Subject to compliance with requirements, provide one of the following:

- (a) Chemtard, ChemMasters Corp.
- (b) PSI N, Cormix Construction Chemicals.
- (c) Eucon WR-75, Euclid Chemical Co.

ix) High-Range Water-Reducing Admixture: ASTM C 494, Type F or Type G.

(1) Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the following:

(2) Products: Subject to compliance with requirements, provide one of the following:

- (a) Super P, Anti-Hydro Co., Inc.
- (b) Cormix 200, Cormix Construction Chemicals.
- (c) Sikament 300, Sika Corp.

x) Water-Reducing, Accelerating Admixture: ASTM C 494, Type E.



(1) Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the following:

(2) Products: Subject to compliance with requirements, provide one of the following:

- (a) Q-Set, Conspec Marketing & Manufacturing Co.
- (b) Lubricon NCA, Cormix Construction Chemicals.
- (c) Accelguard 80, Euclid Chemical Co.

xi) Water-Reducing, Retarding Admixture: ASTM C 494, Type D.

(1) Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the following:

(2) Products: Subject to compliance with requirements, provide one of the following:

- (a) PSI-R Plus, Cormix Construction Chemicals.
- (b) Eucon Retarder 75, Euclid Chemical Co.
- (c) Daratard-17, W.R. Grace & Co.

d) RELATED MATERIALS

i) Dovetail Anchor Slots: Hot-dip galvanized sheet steel, not less than 0.0336 inch thick (0.76 mm) with bent tab anchors. Fill slot with temporary filler or cover face opening to prevent intrusion of concrete or debris.

ii) Waterstops: Provide flat, dumbbell-type or centerbulb-type waterstops at construction joints and other joints as indicated. Size to suit joints.

iii) Rubber Waterstops: Corps of Engineers CRD-C 513.

(1) Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include, but are not limited to, the following:

(2) Manufacturers: Subject to compliance with requirements, provide products of one of the following:

- (a) The Burke Co.
- (b) Progress Unlimited.
- (c) Williams Products, Inc.

iv) Polyvinyl Chloride Waterstops: Corps of Engineers CRD-C 572.

(1) Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include, but are not limited to, the following:

(2) Manufacturers: Subject to compliance with requirements, provide products of one of the following:

- (a) The Burke Co.
- (b) Greenstreak Plastic Products Co.
- (c) W.R. Meadows, Inc.

v) Sand Cushion: Clean, manufactured or natural sand.

vi) Vapor Retarder: Provide vapor retarder that is resistant to deterioration when tested according to ASTM E 154, as follows:

(1) Polyethylene sheet not less than 8 mils (0.2 mm) thick.

(2) Water-resistant barrier consisting of heavy kraft papers laminated together with glass-fiber reinforcement and overcoated with black polyethylene on each side.

(a) Product: Subject to compliance with requirements, provide Moistop by Fortifiber Corporation.

vii) Absorptive Cover: Burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. (305 g/sq. m), complying with AASHTO M 182, Class 2.

viii) Moisture-Retaining Cover: One of the following, complying with ASTM C 171.

- (1) Waterproof paper.
- (2) Polyethylene film.
- (3) Polyethylene-coated burlap.

**e) PROPORTIONING AND DESIGNING MIXES**

i) Prepare design mixes for each type and strength of concrete by either laboratory trial batch or field experience methods as specified in ACI 301. For the trial batch method, use an independent testing agency acceptable to Architect for preparing and reporting proposed mix designs.

(1) Do not use the same testing agency for field quality control testing.

(2) Limit use of fly ash to not exceed 25 percent of cement content by weight.

ii) Submit written reports to Architect of each proposed mix for each class of concrete at least 15 days prior

to start of Work. Do not begin concrete production until proposed mix designs have been reviewed by Architect.

iii) Design mixes to provide normal weight concrete with the following properties as indicated on drawings and schedules:

(1) 4000 psi (27.6 MPa), 28-day compressive strength; water-cement ratio, 0.44 maximum (non-air-entrained), 0.35 maximum (air-entrained).

iv) Water-Cement Ratio: Provide concrete for following conditions with maximum water-cement (W/C) ratios as follows:

(1) Subjected to freezing and thawing: W/C 0.45.

v) Slump Limits: Proportion and design mixes to result in concrete slump at point of placement as follows:

(1) Ramps, slabs, and sloping surfaces: Not more than 3 inches (75 mm).

(2) Reinforced foundation systems: Not less than 1 inch (25 mm) and not more than 3 inches (75 mm).

(3) Concrete containing high-range water-reducing admixture (superplasticizer): Not more than 8 inches (200 mm) after adding admixture to site-verified 2 - 3 inch (50 - 75 mm) slump concrete.

(4) Other concrete: Not more than 4 inches (100 mm).

vi) Lightweight Structural Concrete: Lightweight aggregate and concrete shall conform to ASTM C 330. Proportion mix to produce concrete with a minimum compressive strength of 3000 psi (20.7) at 28 days and a calculated equilibrium unit weight of 110 pcf (1762 kg/cu. m) plus or minus 3 pcf (48.1 kg/cu. m) as determined by ASTM C 567. Concrete slump at the point of placement shall be the minimum necessary for efficient mixing, placing, and finishing. Maximum slump shall be 6 inches (150 mm) for pumped concrete and 5 inches (125 mm) elsewhere. Air entrain concrete exposed to weather according to ACI 301 requirements.

vii) Adjustment to Concrete Mixes: Mix design adjustments may be requested by Contractor when characteristics of materials, job conditions, weather, test results, or other circumstances warrant, as accepted by Architect. Laboratory test data for revised mix design and strength results must be submitted to and accepted by Architect before using in Work.

viii) Fiber Reinforcement: Add at manufacturer's recommended rate but not less than 1.5 lb/cu. yd. (0.9 kg/cu. m).

f) ADMIXTURES

i) Use water-reducing admixture or high-range water-reducing admixture (superplasticizer) in concrete, as required, for placement and workability.

ii) Use high-range water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs, architectural concrete, parking structure slabs, concrete required to be watertight, and concrete with water-cement ratios below 0.50.

iii) Use air-entraining admixture in exterior exposed concrete unless otherwise indicated. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having total air content with a tolerance of plus or minus 1-1/2 percent within the following limits:

(1) Concrete structures and slabs exposed to freezing and thawing, deicer chemicals, or hydraulic pressure:

(a) 4.5 percent (moderate exposure); 5.5 percent (severe exposure) for 1-1/2 inch (38 mm) maximum aggregate.

iv) Use admixtures for water reduction and set accelerating or retarding in strict compliance with manufacturer's directions.

**g) CONCRETE MIXING**

i) Job-Site Mixing: Mix concrete materials in appropriate drum-type batch machine mixer. For mixers of 1 cu. yd. (0.76 cu. m) or smaller capacity, continue mixing at least 1-1/2 minutes, but not more than 5 minutes after ingredients are in mixer, before any part of batch is released. For mixers of capacity larger than 1 cu. yd. (0.76 cu. m), increase minimum 1-1/2 minutes of mixing time by 15 seconds for each additional 1 cu. yd. (0.76 cu. m).

(1) Provide batch ticket for each batch discharged and used in the Work, indicating Project identification name and number, date, mix type, mix time, quantity, and amount of water introduced.

ii) Ready-Mixed Concrete: Comply with requirements of ASTM C 94, and as specified.

(1) When air temperature is between 85 deg F (29 deg C) and 90 deg F (32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes, and when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.

**PART 3) - EXECUTION**

a) GENERAL

i) Coordinate the installation of joint materials, vapor retarder/barrier, and other related materials with placement of forms and reinforcing steel.

b) FORMS

i) General: Design, erect, support, brace, and maintain formwork to support vertical, lateral, static, and dynamic loads that might be applied until concrete structure can support such loads. Construct formwork so concrete members and structures are of correct size, shape, alignment, elevation, and position. Maintain formwork construction tolerances and surface irregularities complying with the following ACI 347 limits:

- (1) Provide Class A tolerances for concrete surfaces exposed to view.
- (2) Provide Class C tolerances for other concrete surfaces.

ii) Construct forms to sizes, shapes, lines, and dimensions shown and to obtain accurate alignment, location, grades, level, and plumb work in finished structures.

iii) Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush plates or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces where slope is too steep to place concrete with bottom forms only. Kerf wood inserts for forming keyways, reglets, recesses, and the like for easy removal.

iv) Chamfer exposed corners and edges as indicated, using wood, metal, PVC, or rubber chamfer strips fabricated to produce uniform smooth lines and tight edge joints.

v) Cleaning and Tightening: Thoroughly clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, or other debris just before placing concrete. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

c) PLACING REINFORCEMENT

i) General: Comply with Concrete Reinforcing Steel Institute's recommended practice for "Placing Reinforcing Bars," for details and methods of reinforcement placement and supports and as specified.

(1) Avoiding cutting or puncturing vapor retarder/barrier during reinforcement placement and concreting operations. Repair damages before placing concrete.

ii) Clean reinforcement of loose rust and mill scale, earth, ice, and other materials that reduce or destroy

bond with concrete.

iii) Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcing by metal chairs, runners, bolsters, spacers, and hangers, as approved by Architect.

iv) Place reinforcement to maintain minimum coverages as indicated for concrete protection. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement operations. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.

v) Install welded wire fabric in lengths as long as practicable. Lap adjoining pieces at least one full mesh and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.

d) **PREPARING FORM SURFACES**

i) General: Coat contact surfaces of forms with an approved, nonresidual, low-VOC, form-coating compound before placing reinforcement.

ii) Do not allow excess form-coating material to accumulate in forms or come into contact with in-place concrete surfaces against which fresh concrete will be placed. Apply according to manufacturer's instructions.

(1) Coat steel forms with a nonstaining, rust-preventative material. Rust-stained steel formwork is not acceptable.

e) **CONCRETE PLACEMENT**

i) Inspection: Before placing concrete, inspect and complete formwork installation, reinforcing steel, and items to be embedded or cast in. Notify other trades to permit installation of their work.

ii) General: Comply with ACI 304, "Guide for Measuring, Mixing, Transporting, and Placing Concrete," and as specified.

iii) Deposit concrete continuously or in layers of such thickness that no new concrete will be placed on concrete that has hardened sufficiently to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as specified. Deposit concrete to avoid segregation at its final location.

iv) Placing Concrete in Forms: Deposit concrete in forms in horizontal layers no deeper than 24 inches (600 mm) and in a manner to avoid inclined construction joints. Where placement consists of several layers,

place each layer while preceding layer is still plastic to avoid cold joints.

(1) Consolidate placed concrete by mechanical vibrating equipment supplemented by hand-spading, rodding, or tamping. Use equipment and procedures for consolidation of concrete complying with ACI 309.

(2) Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations no farther than the visible effectiveness of the machine. Place vibrators to rapidly penetrate placed layer and at least 6 inches (150 mm) into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to set. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mix to segregate.

v) Cold-Weather Placement: Comply with provisions of ACI 306 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.

vi) When air temperature has fallen to or is expected to fall below 40 deg F (4 deg C), uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F (10 deg C) and not more than 80 deg F (27 deg C) at point of placement.

(1) Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.

(2) Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise accepted in mix designs.

vii) Hot-Weather Placement: When hot weather conditions exist that would impair quality and strength of concrete, place concrete complying with ACI 305 and as specified.

(1) Cool ingredients before mixing to maintain concrete temperature at time of placement to below 90 deg F (32 deg C). Mixing water may be chilled or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.

(2) Cover reinforcing steel with water-soaked burlap if it becomes too hot, so that steel temperature will not exceed the ambient air temperature immediately before embedding in concrete.

(3) Fog spray forms, reinforcing steel, and subgrade just before placing concrete. Keep subgrade moisture uniform without puddles or dry areas.

(4) Use water-reducing retarding admixture when required by high temperatures, low humidity, or other adverse placing conditions, as acceptable to Architect.

f) FINISHING FORMED SURFACES

i) Smooth-Formed Finish: Provide a smooth-formed finish on formed concrete surfaces exposed to view or to be covered with a coating material applied directly to concrete, or a covering material applied directly to concrete, such as waterproofing, dampproofing, veneer plaster, painting, or another similar system. This is an as-cast concrete surface obtained with selected form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch defective areas with fins and other projections completely removed and smoothed.

g) **MONOLITHIC SLAB FINISHES**

i) Scratch Finish: Apply scratch finish to monolithic slab surfaces to receive concrete floor topping or mortar setting beds for tile, portland cement terrazzo, and other bonded applied cementitious finish flooring material, and where indicated.

(1) After placing slabs, finish surface to tolerances of F(F) 15 (floor flatness) and F(L) 13 (floor levelness) measured according to ASTM E 1155 (ASTM E 1155M). Slope surfaces uniformly to drains where required. After leveling, roughen surface before final set with stiff brushes, brooms, or rakes.

ii) Float Finish: Apply float finish to monolithic slab surfaces to receive trowel finish and other finishes as specified; slab surfaces to be covered with membrane or elastic waterproofing, membrane or elastic roofing, or sand-bed terrazzo; and where indicated.

(1) After screeding, consolidating, and leveling concrete slabs, do not work surface until ready for floating. Begin floating, using float blades or float shoes only, when surface water has disappeared, or when concrete has stiffened sufficiently to permit operation of power-driven floats, or both. Consolidate surface with power-driven floats or by hand-floating if area is small or inaccessible to power units. Finish surfaces to tolerances of F(F) 18 (floor flatness) and F(L) 15 (floor levelness) measured according to ASTM E 1155 (ASTM E 1155M). Cut down high spots and fill low spots. Uniformly slope surfaces to drains. Immediately after leveling, refloat surface to a uniform, smooth, granular texture.

iii) Trowel Finish: Apply a trowel finish to monolithic slab surfaces exposed to view and slab surfaces to be covered with resilient flooring, carpet, ceramic or quarry tile, paint, or another thin film-finish coating system.

(1) After floating, begin first trowel-finish operation using a power-driven trowel. Begin final troweling when surface produces a ringing sound as trowel is moved over surface. Consolidate concrete surface by final hand-troweling operation, free of trowel marks, uniform in texture and appearance, and finish surfaces to tolerances of F(F) 20 (floor flatness) and F(L) 17 (floor levelness) measured according to ASTM E 1155 (ASTM E 1155M). Grind smooth any surface defects that would telegraph through applied floor covering system.



iv) Trowel and Fine Broom Finish: Where ceramic or quarry tile is to be installed with thin-set mortar, apply a trowel finish as specified, then immediately follow by slightly scarifying the surface with a fine broom.

v) Nonslip Broom Finish: Apply a nonslip broom finish to exterior concrete platforms, steps, and ramps, and elsewhere as indicated.

(1) Immediately after float finishing, slightly roughen concrete surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application.

vi) Nonslip Aggregate Finish: Apply nonslip aggregate finish to concrete stair treads, platforms, ramps, sloped walks, and where indicated.

(1) After completing float finishing and before starting trowel finish, uniformly spread dampened nonslip aggregate at a rate of 25 lb per 100 sq. ft. (12 kg/10 sq. m) of surface. Tamp aggregate flush with surface using a steel trowel, but do not force below surface. After broadcasting and tamping, apply trowel finishing as specified.

(2) After curing, lightly work surface with a steel wire brush or an abrasive stone, and water to expose nonslip aggregate.

(3) After broadcasting and floating, apply a trowel finish as specified. Cure slab surface with a curing compound recommended by the dry shake material manufacturer. Apply the curing compound immediately after the final finishing.

h) MISCELLANEOUS CONCRETE ITEMS

i) Equipment Bases and Foundations: Provide machine and equipment bases and foundations as shown on drawings. Set anchor bolts for machines and equipment to template at correct elevations, complying with diagrams or templates of manufacturer furnishing machines and equipment.

i) CONCRETE CURING AND PROTECTION

i) General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. In hot, dry, and windy weather protect concrete from rapid moisture loss before and during finishing operations with an evaporation-control material. Apply according to manufacturer's instructions after screeding and bull floating, but before power floating and troweling.

ii) Start initial curing as soon as free water has disappeared from concrete surface after placing and

finishing. Weather permitting, keep continuously moist for not less than 7 days.

iii) Curing Methods: Cure concrete by curing compound, by moist curing, by moisture-retaining cover curing, or by combining these methods, as specified.

iv) Provide moisture curing by the following methods:

- (1) Keep concrete surface continuously wet by covering with water.
- (2) Use continuous water-fog spray.
- (3) Cover concrete surface with specified absorptive cover, thoroughly saturate cover with water, and keep continuously wet. Place absorptive cover to provide coverage of concrete surfaces and edges, with a 4 inch (100 mm) lap over adjacent absorptive covers.

v) Provide moisture-retaining cover curing as follows:

- (1) Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width with sides and ends lapped at least 3 inches (75 mm) and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

vi) Apply curing compound on exposed interior slabs and on exterior slabs, walks, and curbs as follows:

- (1) Apply curing compound to concrete slabs as soon as final finishing operations are complete (within 2 hours and after surface water sheen has disappeared). Apply uniformly in continuous operation by power spray or roller according to manufacturer's directions. Recoat areas subjected to heavy rainfall within 3 hours after initial application. Maintain continuity of coating and repair damage during curing period.
- (2) Use membrane curing compounds that will not affect surfaces to be covered with finish materials applied directly to concrete.

vii) Curing Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces, by moist curing with forms in place for the full curing period or until forms are removed. If forms are removed, continue curing by methods specified above, as applicable.

viii) Curing Unformed Surfaces: Cure unformed surfaces, including slabs, floor topping, and other flat surfaces, by applying the appropriate curing method.

(1) Final cure concrete surfaces to receive finish flooring with a moisture-retaining cover, unless otherwise directed.

j) REMOVING FORMS

i) General: Formwork not supporting weight of concrete, such as sides of beams, walls, columns, and similar parts of the work, may be removed after cumulatively curing at not less than 50 deg F (10 deg C) for 24 hours after placing concrete, provided concrete is sufficiently hard to not be damaged by form-removal operations, and provided curing and protection operations are maintained.

ii) Formwork supporting weight of concrete, such as beam soffits, joists, slabs, and other structural elements, may not be removed in less than 14 days or until concrete has attained at least 75 percent of design minimum compressive strength at 28 days. Determine potential compressive strength of in-place concrete by testing field-cured specimens representative of concrete location or members.

iii) Form-facing material may be removed 4 days after placement only if shores and other vertical supports have been arranged to permit removal of form-facing material without loosening or disturbing shores and supports.

**k) CONCRETE SURFACE REPAIRS**

i) Patching Defective Areas: Repair and patch defective areas with cement mortar immediately after removing forms, when acceptable to Architect.

ii) Mix dry-pack mortar, consisting of one part portland cement to 2-1/2 parts fine aggregate passing a No. 16 mesh (1.2 mm) sieve, using only enough water as required for handling and placing.

(1) Cut out honeycombs, rock pockets, voids over 1/4 inch (6 mm) in any dimension, and holes left by tie rods and bolts down to solid concrete but in no case to a depth less than 1 inch (25 mm). Make edges of cuts perpendicular to the concrete surface. Thoroughly clean, dampen with water, and brush-coat the area to be patched with bonding agent. Place patching mortar before bonding agent has dried.

(2) For surfaces exposed to view, blend white portland cement and standard portland cement so that, when dry, patching mortar will match surrounding color. Provide test areas at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike-off slightly higher than surrounding surface.

iii) Repairing Formed Surfaces: Remove and replace concrete having defective surfaces if defects cannot be repaired to satisfaction of Architect. Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycomb, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning. Flush out form tie holes and fill with dry-pack mortar or precast cement cone plugs secured in place with bonding agent.

(1) Repair concealed formed surfaces, where possible, containing defects that affect the concrete's durability. If defects cannot be repaired, remove and replace the concrete.

iv) Repairing Unformed Surfaces: Test unformed surfaces, such as monolithic slabs, for smoothness and verify surface tolerances specified for each surface and finish. Correct low and high areas as specified.

Test unformed surfaces sloped to drain for trueness of slope and smoothness by using a template having the required slope.

(1) Repair finished unformed surfaces containing defects that affect the concrete's durability. Surface defects include crazing and cracks in excess of 0.01 inch (0.25 mm) wide or that penetrate to the reinforcement or completely through nonreinforced sections regardless of width, spalling, popouts, honeycombs, rock pockets, and other objectionable conditions.

(2) Correct high areas in unformed surfaces by grinding after concrete has cured at least 14 days.

(3) Correct low areas in unformed surfaces during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete. Proprietary underlayment compounds may be used when acceptable to Architect.

(4) Repair defective areas, except random cracks and single holes not exceeding 1 inch (25 mm) in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose reinforcing steel with at least 3/4 inch (19 mm) clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials to provide concrete of same type or class as original concrete. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.

v) Repair isolated random cracks and single holes 1 inch (25 mm) or less in diameter by dry-pack method. Groove top of cracks and cut out holes to sound concrete and clean of dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding compound. Place dry-pack before bonding agent has dried. Compact dry-pack mixture in place and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.

vi) Perform structural repairs with prior approval of Architect for method and procedure, using specified epoxy adhesive and mortar.

vii) Repair methods not specified above may be used, subject to acceptance of Architect.

END OF SECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and General provisions of Contract, including General and Supplementary Conditions and Division 1 Specifications Sections apply to work of this section.

1.2 DESCRIPTION OF WORK:

- A. Definition: Metal fabrications include items made from iron and steel shapes, plates, bars, strips, tubes, pipes and castings which are not a part of structural steel or other metal systems specified elsewhere.
- B. Extent of metal fabrications is indicated on drawings and schedules.
- C. Types of work in this Section include fabrications for:
  - 1. Steel bollards, galvanized.
  - 2. Scupper hinge vents, galvanized.

1.3 QUALITY ASSURANCE

- A. Shop Assembly: Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.
- B. Welder Certificates: Signed by Contractor certifying that welders comply with requirements of the AWS D1.1 Structural Welding Code - Steel, D1.3 Structural Welding Code - Sheet steel and that each welder has passed the AWS qualifications test.
- C. Project Conditions: Check/verify actual locations of walls and other construction to which metal fabrications must fit, by accurate field measurements before fabrications.

1.4 SUBMITTALS:

- A. Product Data: Submit manufacturer's specifications, anchor details and installation instructions for products used in miscellaneous metal fabrications, including paint products and rout.

**055000 – MISCELLANEOUS METAL FABRICATORS**

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- B. Shop Drawings: Submit shop drawings for fabrication and erection of miscellaneous metal fabrications. Include plans, elevations and details of sections and connections. Show anchorage and accessory items. Provide templates for anchor and bolt installation by others.
- C. Where materials or fabrications are indicated to comply with certain requirements for design loadings include structural computations, material properties and other information needed for structural analysis.
- D. Samples: Submit 2 sets of representative samples of materials and finished products as may be requested by the Architect.

PART 2 – PRODUCTS

2.1 MATERIALS:

- A. Ferrous Metals:
  - 1. Metal Surfaces, General: For fabrication of miscellaneous metal work which will be exposed to view, use only materials which are smooth and free of surface blemishes including pitting, seam marks, roller marks, rolled trade names and roughness.
  - 2. Steel Plates, Shapes and Bars: ASTM A36.
  - 3. Steel Bar Grating: ASTM A569 or ASTM A36.
  - 4. Steel Tubing: Cold formed, ASTM A 500; or hot rolled, ASTM A 501.
  - 5. Structural Steel Sheet: Hot-rolled, ASTM A 570; or cold-rolled ASTM A 611, Class 1; of grade required for design loading.
  - 6. Galvanized Structural Steel Sheet: ASTM A 446, of grade required for design loading. Coating designation as indicated, or if not indicated, G90.
  - 7. Steel Pipe: ASTM A53; Type and grade (if applicable) as selected by fabricator and as required for design loading black finish unless galvanizing is indicated; standard weight (Schedule 40), unless otherwise indicated.
  - 8. Brackets, Flanges and Anchors: Cast or formed metal of the same type material and finish as supported rails, unless otherwise indicated.

**055000 – MISCELLANEOUS METAL FABRICATORS**

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9. Concrete Inserts: Threaded or wedge type; galvanized ferrous castings, either malleable iron, ASTM A47, or cast steel, ASTM A27. Provide bolts, washers and shims as required, hot-dip galvanized, ASTM A153.
- C. Fasteners:
1. General: Provide zinc-coated fasteners for exterior use or where built into exterior walls. Select fasteners for the type, grade and class required.
  2. Bolts and Nuts: Regular hexagon type, ASTM A307, Grade A.
  3. Lag Bolts: Square head type, FS FF-B-561.
  4. Machine Screws: Cadmium plated steel, FS FF-S-92.
  5. Wood Screws: Flat head carbon steel, FS FF-S-111.
  6. Plain Washers: Round, carbon steel, FS FF-W-92.
  7. Masonry Anchorage Devices: Expansion shields, FS FF-S-325.
  8. Toggle Bolts: Tumble-wing type, FS FF-B-588, type, class and style as required.
  9. Lock Washers: Helical spring type carbon steel, FS FF-W-84.
- D. Paint:
1. Galvanizing: All fabrications, cables and components, including inserts will be hot dipped galvanized in accordance with ASTM A153, A123, A386.
  2. Galvanizing Repair Paint: High zinc dust content paint for regalvanizing welds in galvanized steel, complying with the Military Specifications MIL-P-21035 (Ships) or SSPC-Paint-20.

2.2 FABRICATION - GENERAL

- A. Workmanship:
1. Use materials of size and thickness indicated or, if not indicated, as required to produce strength and durability in finished product for use intended. Work to dimensions shown or accepted on shop drawings, using proven details of fabrication and support. Use type of materials shown or specified for various components of work.

**055000 – MISCELLANEOUS METAL FABRICATORS**

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2. Form work true to line and level with accurate angles and surfaces and straight sharp edges. Ease edges to a radius of approximately 1/32" unless otherwise indicated. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
3. Weld corners and seams continuously, complying with AWS recommendations. At exposed connections, grind exposed welds smooth and flush to match and blend with adjoining surfaces.
4. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners wherever possible. Use exposed fasteners of type indicated or, if not indicated, Phillips flat-head (countersunk) screws or bolts.
5. Provide for anchorage of type shown, coordinated with supporting structure. Fabricate and space anchoring devices to provide adequate support for intended use.
6. Cut, reinforce, drill and tap miscellaneous metal work as indicated to receive finish hardware and similar items.
7. Galvanizing: Provide a zinc coating for all items as follows:
  - a. ASTM A 153 for galvanizing iron and steel hardware.
  - b. ASTM A 123 for galvanizing rolled, pressed and forged steel shapes, plates, bars and strip 1/8" thick and heavier.
  - c. ASTM A 386 for galvanizing assembled steel products.
8. Fabricate joints which will be exposed to weather in a manner to exclude water or provide weep holes where water may accumulate.
9. Shop Painting: (See General Notes)

2.3 Steel Bollard for Equipment Protection

- A. Bollards shall be schedule 40 galvanized pipe filled with concrete, 6 inches diameter, 4 feet minimum above and 3 feet below grade. All components to be galvanized finish. Install HDPE yellow color bollard cover.
- B. Phoenix Precast Products, Or approved equal.



2.4 Scupper hinge vents.

- A. Scupper hinge vents shall have All galvanized components: plates, tubes, anchors, etc., sizes as indicated on drawings.
- B. Hinge vents shall fit into existing scupper's openings.

PART 3 – EXECUTION

3.1 PREPARATION:

- A. Field measurements: Take field measurements prior to preparation of shop drawings and fabrication, where possible. Do not delay job progress; allow for trimming and fitting where taking field measurements before fabrication might delay work.
- B. Coordinate and furnish anchorages, setting drawings, diagrams, templates, instructions, and directions for installation of anchorages, such as concrete inserts, sleeves, anchor bolts and miscellaneous items having integral anchors, which are to be embedded in concrete or masonry construction. Coordinate delivery of such items to project site.

3.2 INSTALLATION:

- A. General:
  - 1. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing miscellaneous metal fabrications to in-place construction; including, threaded fasteners for concrete and masonry inserts, toggle bolts, through-bolts, lag bolts, expansion bolts and other connectors as required.
  - 2. Cutting, Fitting and Placement: Perform cutting, drilling and filling required for installation of miscellaneous metal fabrications. Set work accurately in location, alignment and elevation, plumb, level, true and free of rack, measured from established lines and levels. Provide temporary bracing or anchors in formwork for items which are to be built into concrete masonry or similar construction.

**055000 – MISCELLANEOUS METAL FABRICATORS**

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3. Fit exposed connections accurately together to form tight hairline joints. Weld connections which are not to be left as exposed joints, but cannot be shop welded because of shipping size limitations. Grind exposed joints smooth and touch-up shop paint coat. Do not weld, cut or abrade the surfaces of exterior units which have been hot-dip galvanized after fabrication, and are intended for bolted or screwed field connections.
4. Field Welding: Comply with AWS Code for procedures of manual shielded metal-arc welding, appearance and quality of welds made, and methods used in correcting welding work.
5. Setting Loose Plates: Clean concrete and masonry bearing surfaces of any bond-reducing materials, and roughen to improve bond to surfaces. Clean bottom surface of bearing plates.
6. Set loose leveling and bearing plates on wedges, or other adjustable devices. After the bearing members have been positioned and plumbed, tighten the anchor bolts. Do not remove wedges or shims, but if protruding, cut-off flush with the edge of the bearing plate before packing with grout. Use metallic non-shrink grout in concealed locations where not exposed to moisture; use non-metallic non-shrink grout in exposed locations, unless otherwise indicated.

3.3 ADJUST AND CLEAN:

- A. Touch-Up Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with same material as used for shop painting.
- B. Apply by brush or spray to provide a minimum dry film thickness of 2.0 mils.
- C. Touch-Up Painting: Cleaning and touch-up painting of field welds, bolted connections and abraded areas of the shop paint on miscellaneous metal is specified in Division 9 of these specifications.
- D. For galvanized surfaces: Clean field welds, bolted connections and abraded areas and apply galvanizing repair paint to comply with ASTM A780.

END OF SECTION 05500

1.0 GENERAL

PRODUCT DATA SHEET 0 - Submittals: Submit the following:

- 3.1 Product Data for engineered wood products, underlayment, insulating sheathing, air-infiltration barriers, metal framing anchors, and construction adhesives.
- 3.2 Material certificates for dimension lumber specified to comply with minimum allowable unit stresses.
- 3.3 Wood treatment data, including chemical treatment manufacturer's instructions for handling, storing, installing, and finishing treated materials.
- 3.4 Research or evaluation reports of the model code organization acceptable to authorities having jurisdiction that evidence code compliance of engineered wood products, foam-plastic sheathing, air-infiltration barriers, power-driven fasteners, and fire-retardant-treated wood.

1.1 PRODUCTS

- A. Lumber, General: Comply with DOC PS 20 and with applicable grading rules of inspection agencies certified by the American Lumber Standards Committee's (ALSC) Board of Review. Provide dressed lumber, S4S, with each piece factory marked with grade stamp of inspection agency.
  1. For exposed lumber, furnish pieces with grade stamps applied to ends or back of each piece, or omit grade stamps and provide grade-compliance certificates issued by inspection agency.
  2. Provide dry lumber with 19 percent maximum moisture content at time of dressing for 2-inch nominal (38-mm actual) thickness or less, unless otherwise indicated.
  3. Provide lumber with 15 percent maximum moisture content at time of dressing for 2-inch nominal (38-mm actual) thickness or less, unless otherwise indicated
- B. Wood-Preservative-Treated Materials: Comply with applicable requirements of AWWA C2 (lumber) and AWWA C9 (plywood). Mark each treated item with the Quality Mark Requirements of an inspection agency approved by ALSC's Board of Review.
  1. Pressure treat aboveground items with waterborne preservatives to a minimum retention of 0.25 lb/cu. ft.. After treatment, kiln-dry lumber and plywood to a maximum moisture content of 19 and 15 percent, respectively. Treat indicated items and the following:
    - a. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
    - b. Wood sills, sleepers, blocking, furring, stripping, and similar concealed members in contact with masonry or concrete.

- c. Wood framing members less than 18 inches (460 mm) above grade.
    - d. Wood floor plates installed over concrete slabs directly in contact with earth.
  2. Pressure treat wood members in contact with ground or freshwater with waterborne preservatives to a minimum retention of 0.40 lb/cu. ft.
  3. Complete fabrication of treated items before treatment, where possible. If cut after treatment, apply field treatment complying with AWPA M4 to cut surfaces. Inspect each piece of lumber or plywood after drying and discard damaged or defective pieces.
- C. Dimension Lumber: Provide dimension lumber of grades indicated according to the ALSC National Grading Rule (NGR) provisions of the inspection agency indicated.
  1. Non-Load-Bearing Interior Partitions: Provide Standard, Stud, or No. 3 grade and any of the following species:
    - a. Species: Eastern softwoods; NELMA.
    - b. Species: Northern species; NLGA.
    - c. Species: Mixed southern pine; SPIB.
    - d.
  2. Framing Other than Non-Load-Bearing Partitions: Provide Construction or No. 2 grade and any of the following species:
    - a. Species: Southern pine; SPIB.
    - b. Species: Douglas fir-larch; NLGA, WCLIB, or WWPA.
    - c. Species: Hem-fir; NLGA, WCLIB, or WWPA.
    - d. Species: Douglas fir south; WWPA.
  3. Framing Other than Non-Load-Bearing Partitions: Provide any species of machine stress-rated (MSR) dimension lumber with a grade of 1450f-1.3E.
  4. Framing Other than Non-Load-Bearing Partitions: Provide any species and grade with a modulus of elasticity of at least 1,300,000 psi (8950 MPa) and an extreme fiber stress in bending of at least 850 psi (5.9 MPa) for 2-inch nominal (38 mm-actual) thickness and 12-inch nominal (286-mm actual) width for single member use.
  5. Exposed Framing: Provide material hand-selected from lumber of species and grade indicated below for uniformity of appearance and freedom from characteristics that would impair finish appearance.
    - a. Species and Grade: As indicated above for load-bearing construction of same type.
    - b. Species and Grade: Spruce-pine-fir, Select Structural; NELMA, NLGA, WCLIB, or WWPA.
    - c. Species and Grade: Southern pine, Select Structural; SPIB.
    - d. Species and Grade: Hem-fir, Select Structural; NLGA, WCLIB, or WWPA.

- D. For timbers of **5-inch nominal (117-mm actual)** size and thicker, provide Douglas fir-larch, Select Structural per NLGA, WCLIB, or WWPA rules or Southern pine, No. 1 Dense per SPIB rules.
- E. Concealed Boards: Provide lumber with 19 percent maximum moisture content and any of the following species and grades:
1. Species and Grade: Eastern softwoods, No. 3 Common per NELMA rules.
  2. Species and Grade: Northern species, No. 3 Common or Standard per NLGA rules.
  3. Species and Grade: Mixed southern pine, No. 2 per SPIB rules.
  4. Species and Grade: Western woods, Standard per WCLIB rules or No. 3 Common per WWPA rules.
- F. Miscellaneous Lumber: Provide No. 3 or Standard grade lumber of any species for support or attachment of other construction, including rooftop equipment curbs and support bases, cant strips, bucks, nailers, blocking, and similar members.
- G. Wood-Based Structural-Use Panels: Provide either all-veneer, mat-formed, or composite panels complying with DOC PS 2, "Performance Standard for Wood-Based Structural-Use Panels," unless otherwise indicated. Provide plywood panels complying with DOC PS 1, "U.S. Product Standard for Construction and Industrial Plywood," where plywood is indicated.
1. Trademark: Factory mark structural-use panels with APA trademark evidencing compliance with grade requirements.
  2. Span Ratings: Provide panels with span ratings required to suit support spacing indicated.
  3. Span Ratings: Provide panels with span ratings required to meet "Code Plus" provisions of APA Form No. E30, "APA Design/Construction Guide: Residential & Commercial."
  4. Combination Subfloor-Underlayment: APA-rated Sturd-I-Floor, Exposure 1.
  5. Subflooring: APA-rated sheathing, Exposure 1.
  6. Wall Sheathing: APA-rated sheathing, Exposure 1.
  7. Wall Sheathing: APA-rated Structural I sheathing, Exposure 1.
  8. Roof Sheathing: APA-rated sheathing, Exterior.
  9. Roof Sheathing: APA-rated Structural I sheathing, Exterior.
  10. Plywood Backing Panels: For mounting electrical or telephone equipment, provide fire-retardant-treated plywood panels with grade, C-D Plugged Exposure 1, in thickness indicated or, if not otherwise indicated, not less than **15/32 inch (11.9 mm)** thick.

H. Fasteners: Size and type indicated. Where rough carpentry is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners with a hot-dip zinc coating per ASTM A 153 or of Type 304 stainless steel.

1. Power-Driven Fasteners: CABO NER-272.
2. Bolts: Steel bolts complying with ASTM A 307, Grade A (ASTM F 568, Property Class 4.6); with ASTM A 563 (ASTM A 563M) hex nuts and, where indicated, flat washers.

## 1.2 EXECUTION

- I. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted.
- J. Fit rough carpentry to other construction; scribe and cope as required for accurate fit. Correlate location of furring, nailers, blocking, grounds, and similar supports to allow attachment of other construction.
- K. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
  1. CABO NER-272 for power-driven staples, P-nails, and allied fasteners.
  2. Published requirements of metal framing anchor manufacturer.
  3. Recommended Nailing Schedule" of referenced framing standard and with AFPA's "National Design Specifications for Wood Construction."
  4. "Table 23-I-Q--Nailing Schedule" of the Uniform Building Code.
  5. "Table 2305.2--Fastening Schedule" of the BOCA National Building Code.
  6. "Table 1705.1--Fastening Schedule," of the Standard Building Code.
- L. Use hot-dip galvanized or stainless-steel nails where rough carpentry is exposed to weather, in ground contact, or in area of high relative humidity.
- M. Countersink nail heads on exposed carpentry work and fill holes with wood filler.
- N. Framing Standard: Comply with AFPA's "Manual for Wood Frame Construction," unless otherwise indicated.
- O. Installation of Structural-Use Panels: Comply with applicable recommendations contained in APA Form No. E30, "APA Design/Construction Guide: Residential & Commercial," for types of structural-use panels and applications indicated.

1. Comply with "Code Plus" provisions of above-referenced guide.
  2. Fastening Methods: Fasten panels as indicated below:
    - a. Combination Subflooring-Underlayment: Glue and nail to framing throughout.
    - b. Subflooring: Glue and nail to framing throughout.
    - c. Sheathing: Nail to framing.
    - d. Sheathing: Nail or staple to framing.
    - e. Underlayment: Nail or staple to subflooring.
- P. Air-Infiltration Barrier: Cover sheathing with air-infiltration barrier to comply with manufacturer's written instructions.
1. Apply air-infiltration barrier to cover upstanding flashing with **4-inch (100-mm)** overlap.

END OF SECTION

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Blowing Insulation in existing wood framing exterior wall, and in existing floor/ceiling assembly deck and basement below.

1.2 RELATED SECTIONS

- A. Section 09 20 00 - Gypsum Board.
- B. Section 074600 - Fiber Cement Siding, Board and Trim

1.3 REFERENCES

- A. ASTM C 764 - Standard. Specification for Mineral Fiber. Loose-Fill Thermal Insulation.
- B. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
- C. ASTM E 119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
- D. National Fire Protection Association (NFPA) Life Safety Code
- E. Underwriters Laboratories (UL) - UL 2079 Standard test method for fire resistance of Building Joint Systems.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
  - 1. Preparation instructions and recommendations.
  - 2. Storage and handling requirements and recommendations.
  - 3. Installation methods.
- C. Manufacturer's Certificates: Certify products meet or exceed specified requirements.



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1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Manufacturer with a minimum of ten years of experience manufacturing products in this section shall provide all products listed.
- B. Installer Qualifications: Products listed in this section shall be installed by a single organization with at least five years of experience successfully installing insulation on projects of similar type and scope as specified in this section.
- C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
  - 1. Finish areas designated by Architect.
  - 2. Do not proceed with remaining work until workmanship is approved by Architect.
  - 3. Refinish mock-up area as required to produce acceptable work.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store products in manufacturer's unopened packaging bearing the brand name and manufacturer's identification until ready for installation.
- B. Storage: Store materials in dry locations with adequate ventilation, free from water, and in such a manner to permit easy access for inspection and handling.
- C. Handling: Handle materials to avoid damage.

1.7 SEQUENCING.

- A. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

1.8 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

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PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: CertainTeed Corp.
- B. Approved Equal by Architect. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 APPLICATIONS

- A. Exterior Stud Walls: Blowing type.  
Compression filled application.
  - 1. Thickness: As indicated on the Drawings.
  - 2. Thickness: 3-1/2".
  - 3. R-Value: R-15
- B. Floor Joists Deck Floor Assembly:  
Non Compression Filled application with a design density of 8.
  - 1. Thickness: As indicated on the Drawings.
  - 2. Thickness: 11.5".
  - 3. R-Value: R-42

**2.3 BLOWING INSULATION**

- A. Thermal Closed Cavity Blowing Insulation: CertainTeed OPTIMA Loose Fiberglass Insulation for Closed Cavity Applications. Fiber glass blowing insulation for use behind existing cement board exterior walls, floored drywall cavity between existing deck floor/ceiling assembly. Complies with ASTM C 764; mineral fiber loose fill insulation Type 1:
  - 1. Fire Hazard Classification: ASTM E 84:
    - a. Maximum Flame Spread Index; 5.
    - b. Maximum Smoke Developed Index; 5.

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2. Non-combustibility: ASTM E 136, passes.
  
3. Compression Filled Application: Existing exterior walls.
  - a. **Thermal Resistance: R of 15. Exterior walls**
    - 1) Density 1.5
  
4. Thickness: 3-1/2 inches (2 by 4).

Non compression Filled Application: Existing floored drywall cavity between the Deck and the basement below.

- a. **Thermal Resistance: R of 42Minimum. Floor/ Ceiling Assembly**
  - 1) Density: 8
  - 2) Thickness: 11.5 inches (2 by 12).

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. Verify that all exterior and floor/ceiling assembly construction/demolition has been completed to the point where the insulation may correctly be installed. Prepare openings as required for the installation of blowing insulation.
- C. Verify that mechanical and electrical services in ceilings, walls and floors have been installed and tested and, if appropriate, verify that adjacent materials are dry and ready to receive insulation.
- D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- E. Clean surfaces thoroughly prior to installation.

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- F. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

**3.3 INSTALLATION**

- G. Install in accordance with manufacturer's instructions.

**3.4 PROTECTION**

- H. Protect installed products until completion of project.
- I.. Replace and/or install wall, floor, ceiling materials to match existing and as indicated on drawings.
- J. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes: HFC 365/227-blown, closed cell, polyurethane spray foam insulation.
- B. Related Sections:
  - 1. Division 07 Section 074600 Fiber Cement Siding

1.3 REFERENCES

- A. American Society for Testing and Materials International (ASTM)
  - 1. ASTM C 518: Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
  - 2. ASTM C 1338: Standard Test Method for Determining Fungi Resistance of Insulation Materials and Facings
  - 3. ASTM E 84: Test Method for Surface Burning Characteristics of Building Materials
  - 4. ASTM E 96: Standard Test Methods for Water Vapor Transmission of Materials
  - 5. ASTM E119: Standard Test Methods for Fire Tests of Building Construction and Materials
  - 6. ASTM E 2178: Standard Test Method for Air Permeance of Building Materials
  - 7. NFPA 285: Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Non Load-Bearing Wall Assemblies Containing Combustible Components

1.4 SUBMITTALS

- A. Product Data for type of insulation product specified.
- B. Product test reports performed by a qualified third-party testing agency evidencing compliance of insulation products with specified requirements including those for thermal resistance, fire-test-response characteristics, water-vapor transmission, and other properties, based on comprehensive testing of current products.

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- C. Evaluation Report: Evidence of compliance of foam-plastic insulations with International Building Code (IBC), International Residential Code (IRC), International Energy Conservation Code (IECC).
- D. Manufacturer’s certificate certifying insulation provided meets or exceeds specified requirements.
- E. Installer’s certificate showing the Manufacturer’s installation certification.
  - 1. Sample warranty

**1.5 QUALITY ASSURANCE**

- A. Manufacturer’s Qualifications: Product produced in an ISO 9001 registered factory.
- B. Single Source Responsibility: Single source product from one manufacturer.
- C. Installer Qualifications: Engage a Licensed Contractor (installer) who has been trained and certified by Foamed in Place Insulation Company.
- D. Fire-Test-Response Characteristics: Provide materials specified as determined by testing identical products per test method indicated below by a testing and inspecting agency acceptable to authorities having jurisdiction. Identify materials with appropriate markings of applicable testing and inspecting agency.
  - 1. Surface-Burning Characteristics: ASTM E 84
  - 2. Rated Wall Assembly Testing: ASTM E119 and NFPA 285
- E. Toxicity/Hazardous Materials
  - 1. Provide products that are “Low-emitting”.
  - 2. Provide products that contain no PBDE’s .
  - 3. Provide products that contain no urea-formaldehyde.

**1.6 DELIVERY, STORAGE, AND HANDLING**

- A. Comply with manufacturers written instructions for handling and protection prior to and during installation.
- B. Store both components in a temperature controlled area between 60 and 85 degrees F. Do not allow product to freeze.
- C. Use only those components that are supplied by the Manufacturer.

**1.7 PROJECT CONDITIONS**

- A. Do not expose to sunlight, except to extent necessary for period of installation and concealment.

**1.8 WARRANTY**

- A. Manufacturer’s standard full warranty terms.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Icynene, Inc.  
Product: Polyurethane Spray Foam Insulation: Icynene ProSeal™ (MD-C-200v3).
- B. Intumescent paint: DC-315 by International Fireproof Technology Inc.
- C. Or Approved equal by Architect.

2.2 MATERIALS

- A. General: Provide insulating materials that comply with requirements and with referenced standards.
- B. Icynene ProSeal™ (MD-C-200v3) Spray Foam Insulation: Medium-density, HFC 365/227 blown, conforming to the following:
  - 1. Thermal Resistance (for 1 inch of material) (R-Value/inch @75 deg F): ASTM C 518; 7.1 hr.sq ft.degree F/BTU
  - 2. Air Permeance (for 1 inch of material): ASTM E 2178: less than 0.02 L/s.m<sup>2</sup> @75 Pa.
  - 3. Water Vapor Transmission (for 1.5 inches of material): ASTM E 96; 0.97 perm.
  - 4. Resistance to Fungal Growth: ASTM C 1338: no growth.
  - 5. Product Emissions: Collaborative for High Performance Schools (CHPS) “Low-emitting” material per CA Section 01350 criteria.
  - 6. Flame Spread and Smoke Developed Rating: ASTM E 84
    - a. Flame Spread: 25
    - b. Smoke Development: 300
- C. International Fireproof Technology Inc. DC-315: water-based, intumescent paint, conforming to the following:
  - 1. Full scale fire resistance test with Icynene ProSeal (MD-C-200v3) in accordance with NFPA 286: 24 wet mils (thermal barrier).
  - 2. Finish: flat, grey color
  - 3. VOC Content: 47 g/L

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4. Volume Solids: 67%
5. Flash Point: none
6. Mechanism of cure: coalescence
7. Reducer/cleaner: water

D. Product Description:

1. Collaborative for High-Performance Schools (CHPS) “Low-emitting material” per CA Section 01350 Criteria

2.3 SOURCE QUALITY CONTROL

- A. Insulation product components produced in an ISO 9001 registered factory.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, under which work is to be performed. Do not proceed until unsatisfactory conditions have been corrected.
1. Review placement area to determine final location will not be within 3 inches of any heat source where the temperature will exceed 180 deg F per ASTM C 411 or in accordance with authorities having jurisdiction.

3.2 PREPARATION

- A. Clean substrates and cavities of loose materials capable of interfering with insulation placement.

3.3 APPLICATION

- A. Site mix liquid components supplied by Insulation Manufacturer and installed by Independent Insulation Manufacturer Licensed Dealer.
- B. Apply insulation to substrates in compliance with manufacturer's written instructions. Apply first pass to maximum of 3 inches. Additional passes to be 2 inches maximum.
- C. Apply insulation to produce thickness required for indicated **R Value R-35 Minimum**.
- D. Extend insulation in thickness indicated to envelop entire area to be insulated.
- E. Install DC-315 intumescent paint to required wet or dry mil thickness or coverage rate in accordance with manufacturer’s instructions, by brush, roller, conventional or airless spray.



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3.4 REPAIRS

- A. Any repairs must be effected by the Insulation Manufacturer Licensed Contractor.

3.5 PROTECTION

- A. Protect installed insulation from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings where insulation is subject to abuse.

END OF SECTION

**PART 1 - GENERAL**

Weather-resistant membrane for vertical building envelope protection to maintain air/moisture resistance while maintaining moisture-vapor permeability.

Weather-resistant membrane shall be to match existing of the rest of the wall.

**1.1 SECTION INCLUDES**

- A. Weather barrier membrane.
- B. Seam Tape.
- C. Flashing.
- D. Fasteners.

**1.2 REFERENCES**

- A. ASTM International
  - 1. ASTM C920; Standard Specification for Elastomeric Joint Sealants
  - 2. ASTM C1193; Standard Guide for Use of Joint Sealants
  - 3. ASTM D882; Test Method for Tensile Properties of Thin Plastic Sheeting
  - 4. ASTM D1117; Standard Guide for Evaluating Non-woven Fabrics
  - 5. ASTM E84; Test Method for Surface Burning Characteristics of Building Materials
  - 6. ASTM E96; Test Method for Water Vapor Transmission of Materials
  - 7. ASTM E1677; Specification for Air Retarder Material or System for Framed Building Walls
  - 8. ASTM E2178; Test Method for Air Permeance of Building Materials
- B. AATCC – American Association of Textile Chemists and Colorists
  - 1. Test Method 127 Water Resistance: Hydrostatic Pressure Test
- C. TAPPI
  - 1. Test Method T-410; Grams of Paper and Paperboard (Weight per Unit Area)
  - 2. Test Method T-460; Air Resistance (Gurley Hill Method)

**1.3 SUBMITTALS**

- A. Refer to Section 01 33 00 Submittal Procedures.
- B. Product Data: Submit manufacturer current technical literature for each component.
- C. Samples: Weather Barrier membrane, minimum 8-1/2 inches by 11 inch.

D. Quality Assurance Submittals

1. Manufacturer Instructions: Provide manufacturer's written installation instructions.

E. Closeout Submittals

1. Refer to Section 017700 Closeout Submittals.

1.4 QUALITY ASSURANCE

A. Qualifications

1. Installer shall have experience with installation of similar weather barrier assemblies under similar conditions.
2. Installation shall be in accordance with manufacturer's installation guidelines and recommendations.
3. Source Limitations: Provide weather barrier and accessory materials produced by single manufacturer.

1.5 QUARANTY

1. Manufacturer shall provide 10 years of labor and material.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Refer to Section 016000 Product Requirements.
- B. Deliver weather barrier materials and components in manufacturer's original, unopened, undamaged containers with identification labels intact.
- C. Store weather barrier materials as recommended by system manufacturer.

1.7 SCHEDULING

- A. Review requirements for sequencing of installation of weather barrier assembly with installation of windows, doors, louvers and flashings to provide a weather-tight barrier assembly.
- B. The weather Barrier shall be installed prior to the windows and doors installation.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. DuPont; <http://www.construction.tyvek.com>
- B. Or Approved Equal by Architect.

## 2.2 MATERIALS

- A. Basis of Design: spunbonded polyolefin, non-woven, non-perforated, weather barrier is based upon DuPont™ Tyvek® DrainWrap™ and related assembly components.
- B. Or Approved Equal by Architect.
- C. Performance Characteristics:
  - 1. Air Penetration: 0.004 cfm/ft<sup>2</sup> at 75 Pa, when tested in accordance with ASTM E2178. Type I per ASTM E1677.
  - 2. Water Vapor Transmission: 50 perms, when tested in accordance with ASTM E96, Method B.
  - 3. Water Penetration Resistance: 210 cm when tested in accordance with AATCC Test Method 127.
  - 4. Basis Weight: 2.1 oz/yd<sup>2</sup>, when tested in accordance with TAPPI Test Method T-410.
  - 5. Air Resistance: 300 seconds, when tested in accordance with TAPPI Test Method T-460.
  - 6. Tensile Strength: 30/30 lbs/in., when tested in accordance with ASTM D882, Method A.
  - 7. Tear Resistance: 7/9 lbs, when tested in accordance with ASTM D1117.
  - 8. Surface Burning Characteristics: Class A, when tested in accordance with ASTM E84. Flame Spread: 5, Smoke Developed: 25

## 2.3 ACCESSORIES

- A. Seam Tape: 3 inch wide supplied by same Weather Barrier Manufacturer.
- B. Fasteners:
  - 1. Basis of Design: Tyvek® Wrap Caps, as manufactured by DuPont Building Innovations: #4 nails with large 1-inch plastic cap fasteners.
  - 2. Or Approved Equal by Architect
- C. Sealants
  - 1. Refer to Section 079000 Joint Sealants
  - 2. Provide sealants that comply with ASTM C920, elastomeric polymer sealant to maintain watertight conditions.
  - 3. Products:

a Sealants recommended by the weather barrier manufacturer.

D. Adhesive:

1. Provide adhesive recommended by weather barrier manufacturer.
2. Products:
  - a. Liquid Nails® LN-109
  - b. Denso Butyl Liquid
  - c. 3M High Strength 90
  - d. SIA 655
  - e. Adhesives recommend by the weather barrier manufacturer.

E. Primer:

1. Provide flashing manufacturer recommended primer to assist in adhesion between substrate and flashing.
2. Products:
  - a. 3M High Strength 90
  - b. Denso Butyl Spray
  - c. SIA 655
  - d. Permagrip 105
  - e. ITW TACC Sta' Put SPH
  - f. Primers recommended by the flashing manufacturer

F. Flashing:

1. Basis of Design: DuPont™ FlexWrap™, flexible membrane flashing materials for window openings and penetrations.
2. Basis of Design: DuPont™ StraightFlash™,; straight flashing membrane materials for flashing windows and doors and sealing penetrations and masonry ties, etc.
3. Basis of Design: DuPont™ Thru-Wall Surface Adhered Membrane with Integrated Drip Edge: Thru-Wall flashing membrane materials for flashing at changes in direction or elevation (shelf angles, foundations, etc.) and at transitions between different assembly materials.
4. Or Approved Equal by Architect.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Verify substrate and surface conditions are in accordance with weather barrier manufacturer recommended tolerances prior to installation of weather barrier and accessories.

#### 3.2 INSTALLATION – WEATHER BARRIER

- A. Install weather barrier over exterior face of exterior wall substrate in accordance with manufacturer recommendations.
- B. Start weather barrier installation at a building corner, leaving 6-12 inches of weather barrier extended beyond corner to overlap.
- C. Apply wrap with grooved surface pattern in vertical direction.
- D. Install weather barrier in a horizontal manner starting at the lower portion of the wall surface with grooved surface pattern in vertical position. Maintain weather barrier plumb and level.
- E. Extend bottom roll edge over sill plate 2” to 3”. Seal weather barrier with sealant or tape. Shingle weather barrier over back edge of weep screed. Seal weather barrier with sealant or tape to weep screed. Ensure weeps are not blocked.
- F. Subsequent layers shall overlap lower layers a minimum of 6 inches horizontally in a shingling manner.
- G. Window and Door Openings: Extend weather barrier completely over openings.
- H. Weather Barrier Attachment:
  - 1. Weather barrier to studs through exterior sheathing. Secure using weather barrier manufacturer recommended fasteners, space 12 -18 inches vertically on center along stud line, and 24 inch on center, maximum horizontally.

#### 3.3 SEAMING

- A. Seal seams of weather barrier with seam tape at all vertical and horizontal overlapping seams.
- B. Seal any tears or cuts as recommended by weather barrier manufacturer.

#### 3.4 OPENING PREPARATION (for use with flanged windows)

- A. Cut weather barrier in an “I-cut” pattern. A modified I-cut is also acceptable.
  - 1. Cut weather barrier horizontally along the bottom and top of the window opening.
  - 2. From the top center of the window opening, cut weather barrier vertically down to the sill..

3. Fold side and bottom weather barrier flaps into window opening and fasten.
- B. Cut a head flap at 45-degree angle in the weather barrier membrane at window head to expose 8 inches of sheathing. Temporarily secure weather barrier membrane flap away from sheathing with tape.

### 3.5 FLASHING

- A. Cut 9-inch wide DuPont™ FlexWrap™ a minimum of 12 inches longer than width of sill rough opening. Apply primer to sheathing as recommended by manufacturer.
- B. Cover horizontal sill by aligning DuPont™ FlexWrap™ edge with inside edge of sill. Adhere to rough opening across sill and up jambs a minimum of 6 inches. Secure flashing tightly into corners by working in along the sill before adhering up the jambs.
- C. Fan DuPont™ FlexWrap™ at bottom corners onto face of wall. Firmly press in place. Mechanically fasten fanned edges. Mechanical fastening is not required for DuPont™ FlexWrap™ NF.
- D. On exterior, apply continuous bead of sealant to wall or backside of window mounting flange across jambs and head. Do not apply sealant across sill.
- E. Install window according to manufacturer's instructions.
- F. Apply 4-inch wide strips of DuPont™ StraightFlash™ at jambs overlapping entire mounting flange. Extend jamb flashing 1-inch above top of rough opening and below bottom edge of sill flashing.
- G. Apply 4-inch wide strip of DuPont™ StraightFlash™ as head flashing overlapping the mounting flange. Head flashing should extend beyond outside edges of both jamb flashings.
- H. Position weather barrier head flap across head flashing. Adhere using 4-inch wide DuPont™ StraightFlash™ over the 45-degree seams.
- I. Tape head flap in accordance with manufacturer recommendations
- J. On interior, install backer rod in joint between frame of window and flashed rough framing. Apply sealant around entire window to create air seal. Apply sealant in accordance with sealant manufacturer's instructions and ASTM C 1193.

### 3.6 THRU-WALL FLASHING INSTALLATION

- A. Apply primer per manufacturer's written instructions.
- B. Install preformed corners and end dams bedded in sealant in appropriate locations along wall.
- C. Starting at a corner, remove release sheet and apply membrane to primed surfaces in lengths of 8 to 10 feet.

- D. Extend membrane through wall and leave ¼ inch minimum exposed to form drip edge.
- E. Roll flashing into place. Ensure continuous and direct contact with substrate.
- F. Lap ends and overlap preformed corners 4 inches minimum. Seal all laps with sealant.
- G. Trim exterior edge of membrane 1-inch and secure metal drip edge per manufacturer's written instructions.
- H. Terminate membrane on vertical wall into reglet, counterflashing or with termination bar.
- I. Apply sealant bead at each termination.

### 3.7 THRU-WALL FLASHING / WEATHER BARRIER INTERFACE AT WINDOW / DOOR HEAD

- A. Cut flap in weather barrier at window head.
- B. Prime exposed sheathing.
- C. Install lintel as required. Verify end dams extend 4 inches minimum beyond opening.
- D. Install end dams bedded in sealant.
- E. Adhere 2 inches minimum thru-wall flashing to wall sheathing. Overlap lintel with thru-wall flashing and extend ¼ inch minimum beyond outside edge of lintel to form drip edge.
- F. Apply sealant along thru-wall flashing edges.
- G. Fold weather barrier flap back into place and tape bottom edge to thru-wall flashing.
- H. Tape diagonal cuts of weather barrier.
- I. Secure weather barrier flap with fasteners.

### 3.8 PROTECTION

- A. Protect installed weather barrier from damage.

### 3.9 WARRANTY

- A. Provide warranty for 10 years of labor and material.

**END OF SECTION**



PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Fiber cement lap siding, panels, trim, moulding, and accessories to match existing.
- B. Factory-finished fiber cement lap siding, panels, trim, and accessories.

1.2 RELATED SECTIONS

- A. Section 061000 - Rough Carpentry: Wood framing.

1.3 REFERENCES

- A. ASTM C1186 - Standard Specification for Flat Fiber-Cement Sheets
- B. ASTM D3359 - Standard Test Method for Measuring Adhesion by Tape Test, Tool and Tape.
- C. ASTM E136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 degrees C.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
  - 1. Preparation instructions and recommendations.
  - 2. Storage and handling requirements and recommendations.
  - 3. Installation methods.
- C. **Shop Drawings: Provide detailed drawings of a typical non-standard applications of cementitious siding materials which are outside the scope of the standard details and specifications provided by the manufacturer.**
- D. **Installation Procedures: Submit installation for review and approval, showing anchors, sizes, types and location for 125 MPH MINIMUM wind load, Exposure D, as recommended by manufacturer.**
- E. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
- F. Verification Samples: For each finish product specified, two samples, minimum size 4 by 6 inches (100 by 150 mm), representing actual product, color, and patterns.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Minimum of 5 years' experience with installation of similar products.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store siding on edge or lay flat on a smooth level surface. Protect edges and corners from chipping. Store sheets under cover and keep dry prior to installing.
- C. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

#### 1.7 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

#### 1.8 WARRANTY

- A. Product Warranty:
  - 1. HardiePlank HZ5 lap siding for 30 years. **TO MATCH EXISTING**
  - 2. HardiPanel HZ5 panels for interior walls for 30 years. **TO MATCH EXISTING**
  - 3. HardiPanel HZ5 panels for ceiling for 30 years. **TO MATCH EXISTING**
- B. Product Warranty: Bases of Design:
  - 1. HardieTrim HZ5 boards for 15 years. **TO MATCH EXISTING**
- C. Finish Warranty: Basis of Design:
  - 1. When used for its intended purpose, properly installed and maintained according to James Hardie's published installation instructions, James Hardie's ColorPlus finish with ColorPlus Technology, for a period of 15 years from the date of purchase: will not peel; will not crack; and will not chip. Finish warranty includes the coverage for labor and material.
- D. Workmanship Warranty: for 2 years.

### PART 2 - PRODUCTS

#### 2.1 MANUFACTURERS

- A. Acceptable Manufacturer:  
Bases of Design:

James Hardie Building Products, inc.

- B. To MATCH EXISTING. NO SUBSTITUTIONS.

## 2.2 SIDING AND TRIM

- A. HardiePlank HZ5 lap siding, HardiPanel HZ5 for wall siding and ceiling, HardieTrim HZ5 TO MATCH EXISTING

## 2.3 FASTENERS

- A. Wood Framing Fasteners: As recommended by siding manufacturer:  
1. Corrosion Resistant.

## 2.4 FINISHES

- A. Factory Finish:  
1. Product: ColorPlus Technology by James Hardie. TO MATCH EXISTING  
2. Definition: Factory applied finish; defined as a finish applied in the same facility and company that manufactures the siding substrate.  
3. Process:  
a. Factory applied finish by fiber cement manufacturer in a controlled environment within the fiber cement manufacturer's own facility utilizing a multi-coat, heat cured finish within one manufacturing process.  
b. Each finish color must have documented color match to delta E of 0.5 or better between product lines, manufacturing lots or production runs as measured by photospectrometer and verified by third party.  
4. Protection: Factory applied finish protection such as plastic laminate that is removed once siding is installed  
5. Accessories: Complete finishing system includes pre-packaged touch-up kit provided by fiber cement manufacturer. Provide quantities as recommended by manufacturer.
- B. Factory Finish Color for Trim, and Siding Colors will be selected TO MATCH EXISTING.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.

- B. If framing preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- C. Nominal 2 inch by 4 inch wood framing selected for minimal shrinkage and complying with local building codes, including the use of water-resistive barriers or vapor barriers where required. Minimum 1-1/2 inches face and straight, true, of uniform dimensions and properly aligned.
  - 1. Install water-resistive barriers and claddings to dry surfaces.
  - 2. Repair any punctures or tears in the water-resistive barrier prior to the installation of the siding.
  - 3. Protect siding from other trades.

### 3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Install a water-resistive barrier is required in accordance with local building code requirements.
- D. The water-resistive barrier must be appropriately installed with penetration and junction flashing in accordance with local building code requirements.
- E. Install weather barrier in accordance with local building code requirements, including Seam Tape and joint and laps and flashing, and Flashing from a single source manufacturer in strict accordance with manufacturer's recommendations instructions.

### 3.3 INSTALLATION - HARDIEPLANK HZ5 LAP SIDING.- TO MATCH EXISTING

- A. Install materials in strict accordance with manufacturer's installation instructions.
- B. Starting: Install a minimum 1/4 inch (6 mm) thick lath starter strip at the bottom course of the wall. Apply planks horizontally with minimum 1-1/4 inches (32 mm) wide laps at the top. The bottom edge of the first plank overlaps the starter strip.
- C. Allow minimum vertical clearance between the edge of siding and any other material in strict accordance with the manufacturer's installation instructions.
- D. Align vertical joints of the planks over framing members.

- E. Maintain clearance between siding and adjacent finished grade.
- F. Locate splices at least one stud cavity away from window and door openings.
- G. Wind Resistance: A minimum 125 MPH wind resistance is required Hardieplank lap siding shall be installed to framing members and secured with fasteners described in Table No. 2 in National Evaluation Service Report No. NER-405.
- H. Locate splices at least 12 inches away from window and door openings.
- I. Factory Finish Touch Up: Apply touch up paint to cut edges in accordance with manufacturer's printed instructions.
  - 1. Touch-up nicks, scrapes, and nail heads in pre-finished siding using the manufacturer's touch-up kit pen.
  - 2. Touch-up of nails shall be performed after application, but before plastic protection wrap is removed to prevent spotting of touch-up finish.
  - 3. Use touch-up paint sparingly. If large areas require touch-up, replace the damaged area with new pre-finished siding. Match touch up color to siding color through use of manufacturer's branded touch-up kits.

#### 3.4 INSTALLATION - HARDIEPANEL HZ5 VERTICAL SIDING- TO MATCH EXISTING

- A. Install materials in strict accordance with manufacturer's installation instructions.
- B. Block framing between studs where HardiePanel siding horizontal joints occur.
- C. Install metal Z flashing and provide a 1/4 inch gap at horizontal panel joints.
- D. Place fasteners no closer than 3/8 inch from panel edges and 2 inches from panel corners.
- E. Allow minimum vertical clearance between the edge of siding and any other material in strict accordance with the manufacturer's installation instructions.
- F. Maintain clearance between siding and adjacent finished grade.
- G. Specific framing and fastener requirements refer to Tables 2 and 3 in National Evaluation Service Report No. NER-405. for a minimum 115 MPH wind.
- H. Factory Finish Touch Up: Apply touch up paint to cut edges in accordance with manufacturer's printed instructions.
  - 1. Touch-up nicks, scrapes, and nail heads in pre-finished siding using the manufacturer's touch-up kit pen.
  - 2. Touch-up of nails shall be performed after application, but before plastic protection wrap is removed to prevent spotting of touch-up finish.
  - 3. Use touch-up paint sparingly. If large areas require touch-up, replace the damaged area

with new pre-finished siding. Match touch up color to siding color through use of manufacturer's branded touch-up kits.

**3.5 INSTALLATION - HARDIETRIM HZ5 BOARDS. TO MATCH EXISTING.**

- A. Install materials in strict accordance with manufacturer's installation instructions. Install flashing around all wall openings.
- B. Fasten through trim into structural framing or code complying sheathing. Fasteners must penetrate minimum 3/4 inch or full thickness of sheathing. Additional fasteners may be required to ensure adequate security.
- C. Place fasteners no closer than 3/4 inch and no further than 2 inches from side edge of trim board and no closer than 1 inch from end. Fasten maximum 16 inches on center.
- D. Maintain clearance between trim and adjacent finished grade.
- E. Trim inside corner with a single board trim both side of corner.
- F. Outside Corner Board Attach Trim on both sides of corner with 16 gage corrosion resistant finish nail 1/2 inch from edge spaced 16 inches apart, weather cut each end spaced minimum 12 inches apart.
- G. Allow 1/8 inch gap between trim and siding.
- H. Seal gap with high quality, paint-able caulk.
- I. Shim frieze board as required to align with corner trim.
- J. Fasten through overlapping boards. Do not nail between lap joints.
- K. Overlay siding with single board of outside corner board then align second corner board to outside edge of first corner board. Do not fasten HardieTrim boards to HardieTrim boards.
- L. Shim frieze board as required to align with corner trim.
- M. Install HardieTrim Fascia boards to rafter tails or to sub fascia.

**3.6 FINISHING**

- A. Factory Finish Touch Up: Apply touch up paint to cut edges in accordance with manufacturer's printed instructions.
  - 1. Touch-up nicks, scrapes, and nail heads in pre-finished siding using the manufacturer's touch-up kit pen.
  - 2. Touch-up of nails shall be performed after application, but before plastic protection wrap is removed to prevent spotting of touch-up finish.

3. Use touch-up paint sparingly. If large areas require touch-up, replace the damaged area with new pre-finished siding. Match touch up color to siding color through use of manufacturer's branded touch-up kits.

### 3.7 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and General Provisions of Contract, including General and Supplementary Conditions and Division 1 Specifications Sections apply to work of this Section.

1.2 SUMMARY

- A. Section Includes: Firestopping for through penetrations and joints in fire rated assemblies.

1.3 SYSTEM DESCRIPTION:

- A. Firestopping Materials: ASTM E119 or ASTM E814 to achieve fire ratings as indicated on Drawings, but not less than 1-hour fire rating.
- B. Surface Burning: ASTM E84 with a maximum flame spreads/smoke developed rating of 25/450.

1.3 PERFORMANCE REQUIREMENTS

- A. Firestopping Designs: Conform to assemblies listed with Underwriters Laboratories (UL) or Intertek Testing Services (ITS).

1.5 SUBMITTALS:

- A. Product Data:
  - 1. Submit data on product characteristics, performance and limitation criteria.
  - 2. Submit schedule of opening locations and sizes, penetrating items, and required listed design numbers to seal openings and to maintain fire resistance rating of adjacent assembly.
  - 3. Submit descriptions of tested designs listed in submitted schedule.

Manufacturer's Installation Instructions: Submit preparation and installation instructions.

Manufacturer's Certificate:

- 4. Certify products meet or exceed specified requirements.
- 5. Certify applicator is approved by manufacturer.



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Engineering Judgements: For conditions not covered by UL or ITS listed designs, provide judgements by licensed professional engineer suitable for presentation to authority having jurisdiction for acceptance as meeting fire protection requirements.

1.6 QUALIFICATIONS

- A. Applicator: Company specializing in performing Work of this section and approved by manufacturer.

1.7 ENVIRONMENTAL REQUIREMENTS

- A. Do not apply materials when temperature of substrate material and ambient air is below 60 degrees F.
- B. Maintain this minimum temperature before, during, and for minimum 3 days after installation of materials.
- C. Provide ventilation in areas to receive solvent cured material.

PART 2 – PRODUCTSS

2.1 FIRESTOPPING

- A. Manufacturers:
  - 1. 3M Fire Protection Products
  - 2. Specified Technologies, Inc.
  - 3. Nelson
  - 4. Hilti

Product Description: Listed as components of tested design, appropriate for the physical configuration of each penetration and as required by the fire resistance rating indicated and the provisions of Article: SYSTEM DESCRIPTION.

- 1. Different types of projects by multiple manufacturers are acceptable as required to meet specified system description and performance requirements; provide only one type for each similar application.

2.2 FILL, VOID, AND CAVITY MATERIALS

- A. Fill, Void, and Cavity Materials: One or more of the following types, as appropriate for particular construction conditions.

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1. Silicone sealant materials, except on finished surfaces to be painted.
2. Caulk type material.
3. Putty type material.
4. Composite sheet type material, ¼” nominal thickness, foil-faced.
5. Wrap strip type material, ¼” nominal thickness, intumescent elastomeric.

Packing Materials: One or more of the following types, as appropriate for particular construction conditions.

1. Ceramic fiber blanket, 4 lb./cu. ft. density.
2. Ceramic fiber insulation, minimum 1” thick, 8 lb./cu. ft. minimum density.
3. Mineral wool batt insulation, 6.0 lb./cu. ft. minimum density.

Forming Materials: As required by tested design for particular construction conditions.

**2.3 ACCESSORIES**

- A. Primer: type recommended by firestopping manufacturer for specific substrate surfaces and suitable for required fire ratings.
- B. Installation Accessories: Provide clips, collars, fasteners, temporary stops or dams and other devices required to position and retain materials in place.

**PART 3 - EXECUTION**

**3.1 EXAMINATION**

- A. Verify openings are ready to receive firestopping.
- B. Verify that penetrating elements are securely fixed and properly located; with a minimum of ½” space between penetrations and surfaces of openings unless otherwise required or permitted by tested design.

**3.2 PREPARATION:**

- A. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other matter which may affect bond of firestopping material.

Remove incompatible materials which may affect bond.

Install backing materials to arrest liquid material leakage

### **3.3 APPLICATION**

- A. Install material at fire rated construction perimeters and openings which contain penetrating sleeves, piping, ductwork, conduit and other items, requiring firestopping.

Apply primer where recommended by manufacturer for type of firestopping material and substrate involved, and as required for compliance with required fire ratings.

Apply firestopping material in sufficient thickness to achieve required fire and smoke rating.

Compress fibered material to maximum 40 percent of its uncompressed size.

Remove dam of forming material not required to remain as part of the system, after firestopping material has cured sufficiently to remain in place.

### **3.4 FIELD QUALITY CONTROL**

- A. Inspect installed firestopping for compliance with specifications and submitted schedule.
- B. Inspect firestopping systems, minimum 48 hours after installation, for adhesion and set of sealant materials.
- C. Correct deficiencies and reinspect to verify compliance with requirements.

### **3.5 CLEANING**

- A. Clean adjacent surfaces of firestopping materials.
- B. Remove excess firestopping materials for neat appearance in areas left exposed to view in finished construction.

### **3.6 PROTECTION OF INSTALLED CONSTRUCTION**

- A. Protect adjacent surfaces from damage by material installation.

END OF SECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and General provisions of Contract, including General and Supplementary Conditions and Division 1 Specifications Sections apply to work of this section.

1.2 SUMMARY:

- A. Section includes:
  - 1. Sealants and joint backing.
  - 2. Precompressed foam sealers.

1.3 SYSTEM DESCRIPTION

- A. All exterior sealed joints are required to maintain a waterproof envelope.
- B. Joints between door frame and adjacent construction.
- C. Joint between cement board siding, and between siding and trim.
- D. Interior sealed joints.
- E. Any other interior joint that requires sealant.

1.4 SUBMITTALS:

- A. Product Data:
  - 1. Submit data for sealant materials, performance and substrate preparation.
  - 2. Indicate available colors for each sealant type for selection.
- B. Samples: Submit two sets of samples, 3 inches long illustrating sealant colors for selection.
- C. Manufacturer's Installation Instructions: Submit special procedures, surface preparation, and perimeter conditions requiring special attention.

1.5 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience.
- B. Applicator: Company specializing in performing Work of this section with minimum three years documented experience.

**1.6 ENVIRONMENTAL REQUIREMENTS**

- A. Maintain temperature and humidity recommended by sealant manufacturer during and after installation.

**1.7 COORDINATION:**

- A. Coordinate Work with sections referencing this section.

**1.8 WARRANTY**

- A. Provide five year manufacturer's warranty for installed sealants and accessories which fail to achieve airtight seal or watertight seal, exhibit loss of adhesion or cohesion, and sealants which do not cure.

**PART 2 – PRODUCTS**

**2.1 JOINT SEALERS:**

**Silicone Sealant Manufacturers:**

1. Pecora Corp.
2. General Electrical Silicones.
3. Down Corning.Tremco Inc.

**Other Sealant Manufacturers:**

1. Pecora Corporation.
2. Sonneborn Building Products
3. Tremco Inc.

Type A - Polyurethane Exterior Joints: ASTM C920, Type M, Grade NS, Class 25; uses NT, M, A, and O; two component, chemical curing, non-staining, non-bleeding, capable for continuous water immersion, color selected:

1. Tremco; Dymeric 511
2. Pecora; Dynatrol II.
3. Sonneborn; NP 2.
4. Applications: Use for exterior non-traffic bearing joints.
  - a. Control, expansion, and soft joints in masonry.
  - b. Joints between concrete and other materials.
  - c. Joints between metal frames and other materials.
  - d. Other exterior non-traffic bearing joints for which no other sealant is indicated.

Type B - Polyurethane Interior Joints: ASTM C920, Type S, Grade NS, Class 25, Use NT, M, A, O; single component, chemical curing, non-staining, non-bleeding, capable of continuous water immersion, color as selected; manufactured by:

1. Tremco; Dymonic.
2. Pecora; Dynatrol 1.
3. Sonneborn; NP 1.
4. Applications: Use for:
  - a. Interior wall and ceiling control joints.
  - b. Joints between interior surfaces and exterior wall components.
  - c. Other interior dynamic joints.

Type C - Acrylic Interior Joints: ASTM C834; single component, non-staining, non-bleeding, non-sagging; color as selected; manufactured by:

1. Tremco; Acrylic Later, Trimflex 834 waterbased.
2. Pecora; AC-20
3. Sonneborn; Sonolac.

4. Applications: Use for interior joints, except where sanitary sealant is required.
  - a. Interior joints between door and window frames and wall surfaces.
  - b. Other interior joints for which no other type of sealant is indicated.

2.3 ACCESSORIES:

- A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.
- B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.
- C. Joint Backing: Round foam rod compatible with sealant; oversized 30 to 50 percent larger than joint width; recommended by sealant manufacturer to suit application.
- D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Verify substrate surfaces and joint openings are ready to receive work.
- B. Verify joint backing and release tapes are compatible with sealant.

3.2 PREPARATION:

1. Remove loose materials and foreign matter which might impair adhesion of sealant.
2. Clean and prime joints.
3. Perform preparation in accordance with ASTM C1193.
4. Protect elements surrounding the Work of this section from damage or disfiguration.

3.3 INSTALLATION:

1. Perform installation in accordance with ASTM C1193.

2. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated.
3. Install bond breaker where joint backing is not used.
4. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
5. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
6. Tool joints concave, unless otherwise detailed.
7. Precompressed Foam Sealant: Do not stretch; avoid joints except at corners, ends, and intersections; install with face 1/8 to 1/4 inch below adjoining surface.
8. Compression Gaskets: Avoid joint except at ends, corners, and intersections; seal all joints with adhesive; install with face 1/8 to 1/4 inch below adjoining surface.

**3.4 CLEANING:**

- A. Clean adjacent solid surfaces.

**3.5 PROTECTION OF INSTALLED CONSTRUCTION:**

- A. Protect sealants until cured.

**END OF SECTION.**



PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and General provisions of Contract, including General and Supplementary Conditions and Division 1 Specifications Sections apply to work of this section.

1.2 DESCRIPTION OF WORK:

- A. Provide all metal doors and frames, and other custom hollow metal work as indicated on the Drawings and specified herein.
- B. Builders Hardware is furnished under FINISH HARDWARE, Division 8. Receive, store, protect, and install Hardware for metal doors.

1.3 QUALITY ASSURANCE:

- A. Manufacturer shall be a single firm specializing in production of this type of work.

1.4 SUBMITTALS:

- A. Submit the following in accordance with SUBMITTALS, Division 1:
  - 1. Shop Drawings: Show locations, dimensions, sizes, gages, materials and finishes of all items. Show large scale details of principal construction features.

1.5 DELIVERY, STORAGE AND HANDLING:

- A. Deliver hollow metal work cartoned or crated to provide protection during transit and job storage.
- B. Inspect hollow metal work on delivery for damage. Minor damages may be repaired providing finishes are equal in all aspects to new work and acceptable to the Architect; otherwise, remove damaged items and replace with new work as directs.
- C. Store doors and frames at building site under cover. Place units on dunnage at least 4” high or otherwise store on floors in a manner that will prevent rust and damage. Avoid the use of nonvented plastic or canvas shelters which could contain humidity. If cardboard wrapper on door becomes wet, remove carton immediately. Provide ¼” spaces between stacked doors to provide air circulation.

PART 2 – PRODUCTS

- 2.1 Provide metal door and frame to match existing paneled door in the main Hall side entrance.

Door, including glass framing, and door frame shall be completely weatherstripping.

Provide metal door and frame by one of the following or approved equal as indicated on Drawings:

1. Pioneer Industries.
2. Steelcraft.
3. Ceco Door Products.

2.2 MATERIALS:

A. Metal for doors: Cold rolled steel conforming to ASTM A 366.

1. Exterior Door: SDI 100, Grade III, Extra-heavy Duty, Model 2, minimum 18 ga. Faces, Stiffeners 24 ga. Edge Channels 16 g.

B. Galvanized steel sheets: Zinc-coated, carbon steel, commercial quality, conform to ASTM A526 with ASTM A525, G60, Zinc coating, mill phosphatized.

C. Insulation for Doors:

1. For exterior (thermal) doors: Tested in accordance with ASTM C 236, inorganic, non-combustible, U = .24 maximum.

D. Refer to 088000 for glass panel.

2.3 FABRICATION:

A. Construct doors to designs indicated on Drawings, fully welded; no visible seams or joints in faces and vertical edges; strong, rigid, free from warps or buckles. Corner bends shall be true, straight and of minimum radius for material used.

1. Stiffen face sheets with continuous vertical stiffeners at not more than 6" o.c. Attach face sheet to stiffeners by spot welding at not more than 4" o.c. Fill spaces between stiffeners with insulation.

**081120– HOLLOW METAL DOORS**

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2. Continuously weld edge joints, grind and dress to a smooth finish.
3. Weathertight frame for glass panel, completely welded and weatherstripped. No exposed fasteners.
5. Close top and bottom with channels spot welded to faces. Provide additional channels for following conditions.  
  
Bottom of weatherstripped and soundstripped doors without automatic door bottom.
4. Provide openings in bottom to allow escape of entrapped moisture.
6. From vertical edges as follows:

Single-acting swinging doors: bevel

1/8" in 2"

2.5 HARDWARE PREPARATION:

- A. Mortise, reinforce, drill and tap for all recessed, fully templated hardware in accordance with approved Hardware Schedule and templates provided by Hardware Vendor. Reinforce only for surface applied hardware.
- B. Provide dust box covers or mortar guards to completely cover strike openings and all screw openings in frames.
- C. Prepare doors and frames for security equipment and devices and for fire control devices per templates furnished by respective installers.

PART 3 – EXECUTION

3.1 INSTALLATION:

- A. Generally, install hollow metal work in accordance with approved Shop Drawings and as specified herein.
- B. Place welded frames in new construction prior to construction of enclosing walls and ceilings.
  1. Set frames accurately in position, plumbed, aligned and braced securely until permanent wall anchors are set. Anchor securely to floor.
  2. After wall construction is completed, remove temporary braces and spreaders leaving surfaces smooth and undamaged.

**081120– HOLLOW METAL DOORS**

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Hang doors in frames to conform to clearances specified in SDI – 100 and indicated on approved Shop Drawings using Hardware as indicated on approved Hardware Schedule. Drill and tap for surface applied hardware.

**3.2 TOUCH-UP:**

- A. Immediately after hanging doors, touch-up abraded paint and any damaged or rusted areas. Sand smooth and apply compatible air drying primer.

**3.3 ADJUSTMENT:**

- A. Before final inspection review operation of all hardware and adjust, if required, for proper operating condition.

**3.4 CLEAN-UP:**

- A. At completion remove all excess materials debris and rubbish resulting from the Work of this Section.

**END OF SECTION**

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and General provisions of Contract, including General and Supplementary Conditions and Division 1 Specifications Sections apply to work of this section.

1.2 DESCRIPTION OF WORK:

- A. Definition: "Finish Hardware" includes items known commercially as builders hardware which are required for swing, sliding and folding doors, except special types of unique and non-matching hardware specified in the same section as the door and door frame. Types of items in this section include (but are not necessarily limited to):

Hinges  
Lock cylinders and keys  
Lock and latch sets  
Push/pull units  
Closers  
Overhead Holders

- B. Contractor shall provide shop drawings to **Architect and County Door Hardware Vendor, Huber Locksmith**, for review and approval.

1.3 QUALITY ASSURANCE:

- A. Manufacturer: Obtain each kind of hardware (latch and lock sets, hinges, closers, etc.) from two manufacturers, although several may be indicated as offering products complying with requirements.

1.4 SUBMITTALS:

- A. Submit in accordance with SUBMITTALS, Division 1:
1. Product Data: Submit manufacturer's technical information for each item of hardware. Include whatever information may be necessary to show compliance with requirements, and include instruction for installation and for maintenance of operating parts and finish. Transmit copy of applicable data to Installer.

2. Hardware Schedule: Submit final hardware schedule in the manner and format specified, complying with the actual construction progress schedule requirements. Hardware Schedules are intended for coordination of work.
  3. Final Hardware Schedule: Based on builders hardware indicated, organize hardware schedule into “hardware sets” indicating complete designations of every item required for each door or opening. Include the following information:
    - a. Type, style, function, size and finish of each hardware item.
    - b. Name and manufacturer of each item.
    - c. Fastenings and other pertinent information.
    - d. Location of hardware set cross-referenced to indications on Drawings both on floor plans and in door and frame schedule.
    - e. Explanation of all abbreviations, symbols, codes, etc. contained in schedule.
    - f. Mounting locations for hardware.
    - g. Door and frame sizes and materials.
- B. Submittal Sequence: Submit schedule at earliest possible date particularly where acceptance of hardware schedule must precede fabrication of other work (e.g., hollow metal frames) which is critical in the project construction schedule. Include with schedule the product data, samples, shop drawings of other work affected by builders hardware, and other information essential to the coordinated review of Hardware Schedule.
- C. Keying Schedule: Submit separate detailed schedule indicating clearly how the Owner’s final instructions on keying of locks has been fulfilled.
- D. Samples: Prior to submittal of the final hardware schedule and prior to final ordering of builders hardware, submit one sample of each type of exposed hardware unit, finished as required, and tagged with full description for coordination with schedule.
- E. Samples will be returned to the supplier. Units which are acceptable and remain undamaged through submittal, review and field comparison procedures may, after final check of operation, be used in the work, within limitations of keying coordination requirements.

**1.5 PRODUCT HANDLING:**

- A. Packaging of hardware, on a set by set basis, is the responsibility of the supplier. As material is received by the hardware supplier from the various manufacturers, sort and repackage in

containers marked with the hardware set number. Two or more identical sets may be packed in the same container.

- B. Inventory hardware jointly with representative of the hardware supplier and the hardware installer until each is satisfied that the count is correct.
- C. Provide secure lock-up for hardware delivered to the project, but not yet installed. Control and handling and installation of hardware items which are not immediately replaceable, so that the completion of the work will not be delayed by hardware losses, both before and after installation.

**1.6 JOB CONDITIONS:**

- A. Coordination: Coordinate hardware with other work. Tag each item or package separately, with identification related to the final hardware schedule, and include basic installation instructions in the package. Furnish hardware items of proper design for use on doors and frames of the thicknesses, profile, swing, security and similar requirements indicated, as necessary for proper installation and function. Deliver individually packaged hardware items at the proper times to the proper locations (shop or project site) for installation.
- B. Template: Furnish hardware templates to each fabricator of doors, frames and other work to be factory-prepared for the installation of hardware. Upon request, check the shop drawings of such other work, to confirm that adequate provisions are made for the proper installation of hardware.

**PART 2 – PRODUCTS**

**2.1 RESPONSIBILITIES OF BUILDERS HARDWARE SUPPLIER:**

- A. Submittals: Provide through Contractor required Products Data, Final Hardware Schedule, Separate Keying Scheduled (if required), and samples as specified in Part 1 – General of the Section, unless otherwise indicated.
- B. Construction Schedule: Inform Contractor at earliest possible date of estimated times and dates to process submittals, to furnish templates, to deliver hardware, and to perform other work associated with furnishing Builders Hardware for purposes of including in construction progress schedule and then comply with this schedule.
- C. Products Handling: Package, identify, deliver, and inventory hardware as specified in Part 1 – General of this Section.
- D. Discrepancies: Based on requirements indicated in Contract Documents in effect at time of hardware selection: furnish proper types, finishes, and quantities of Builders hardware, including fasteners, and Owner’s maintenance tools; and furnish or replace any items of Builders hardware resulting from shortages and incorrect items, at no cost to the Owner or Contractor. Obtain signed receipts from Contractor for all delivered materials.

**2.2 RESPONSIBILITIES OF CONTRACTOR:**

- A. Submittals: Coordinate and process submittals for Builders Hardware in same manner as submittals for other work.
- B. Construction Schedule: Cooperate with Builders Hardware supplier in establishing scheduled dates for submittals and delivery of templates and builders hardware.
- C. Coordination: Coordinate builders hardware with other work. Furnish hardware supplier or manufacturer with shop drawings of other work where required or requested. Verify completeness and propriety of hardware with supplier.
- D. Product Handling: Provide secure lock-up for hardware delivered to the site. Inventory hardware jointly with representative of hardware supplier and issue signed receipts for all delivered materials. Any hardware items lost, damaged or stolen after being accepted by Contractor shall be replaced at Contractor's expense.

**2.3 MATERIALS AND FABRICATION:**

- A. General:
  - 1. Hand of door: The Drawings show the direction of slide, swing or hand of each door leaf. Furnish each item of hardware for proper installation and operation of the door movement as shown.
  - 2. Manufacturer's Name Plate: Do not use manufacturer's products which have manufacturer's name or trade name displayed in a visible location (omit removable nameplates), except in conjunction with required UL labels and as otherwise acceptable to the Architect.
    - a. Manufacturer's identification will be permitted on rim of lock cylinders only.
  - 3. Base Metals: Product hardware units of the basic metal and forming method indicated, using the manufacturer's standard metal alloy, composition, temper and hardness, but in no case of lesser (commercially recognized) quality than specified for the applicable hardware units by FS FF-H-106, FS FF-G-111, FS-F-H-116 and FS FF-H-121. Do not furnish "optional" materials or forming methods for those indicated, except as otherwise specified.



4. Fasteners: Manufacture hardware to conform to published templates, generally prepared for machine screw installation. Do not provide hardware which has been prepared for self-tapping sheet metal screws, except as specifically indicated.
5. Furnish screws for installation, with each hardware item. Provide Phillips flat-head screws except as otherwise indicated. Finish exposed (exposed under any condition) screws to match the hardware finish or, if exposed in surfaces of other work, to match the finish of such other work as closely as possible, including prepared for paint in surfaces to receive painted finish.
6. Provide concealed fasteners for hardware units which are exposed when the door is closed, except to the extent no standard units of the type specified are available with concealed fasteners. Do not use through bolts for installation where the bolt head or the nut on the opposite face is exposed in other work, except where it is not feasible to adequately reinforce the work.
7. Tools for Maintenance: Furnish a complete set of specialized tools as needed for Owner's continued adjustment, maintenance, and removal and replacement of builders hardware.

2.4 HINGES, BUTTS AND PIVOTS:

- A. Templates: Provide only template produced units.
- B. Screws: Furnish Phillips flat-head all-purpose or machine screws for installation of units, except furnish Phillips flat-head all-purpose or wood screws for installation of units into wood. Finish screw heads to match surface of hinges or pivots.
- C. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:
  1. Steel Hinges: Steel pins
  2. Non-ferrous Hinges: Stainless steel pins.
  3. Exterior Doors: Non-removable pins.
  4. Out-swing Corridor Doors: Non-removable pins.
  5. Tips: Flat button and matching plug, finished to match leaves, except where hospital tip (HT) indicated.

6. Number of Hinges: Provide number of hinges indicated but not less than 3 hinges for door leaf for doors 90” or less in height and one additional hinge for each 30” of additional height.

2.5 LOCK CYLINDERS AND KEYING:

- A. General: Supplier will meet with Owner to finalize keying requirements and obtain final instructions in writing.
- B. Review the keying system with the Owner and provide the type required (master, grandmaster or great-grandmaster), either new or integrated with Owner’s existing system. **NOTE: COUNTY REQUIRES KEYING DONE BY HUBER LOCKSMITH (729 South Main Street Pleasantville, NJ 08232 (609) 646-5625)**  
**All lock cylinders shall be removable. Contractor shall coordinate with HUBER LOCKSMITH for all County KEYING AND LOCKING requirements. CONTRACTOR SHALL PAY FOR ALL COSTS RELATED TO KEYING FOR THIS PROJECT.**
- C. Metals: Construct lock cylinder parts from brass/bronze, stainless steel or nickel silver.
- D. Comply with the Owner’s Instructions for master keying and, except as otherwise indicated, provide individual change key for each lock which is not designated to be keyed alike with a group of related locks.
- E. Key Material: Provide keys of nickel silver only.
- F. Key Quantity: Furnish 3 change keys for each lock; 5 master keys for each master system; and 5 grandmaster keys for each grandmaster system.
1. Furnish one extra blank for each lock.
  2. Deliver keys to key control system manufacturer.
  3. Deliver keys to Owner’s representative.
- G. Provide a key control system including envelopes, labels, tags with self-locking key clips, receipt forms, 3-way visible card index, temporary markers, permanent markers, and standard metal cabinet, all as recommended by system manufacturer, with capacity for 150% of the number of locks required for the project.
1. Key control manufacturer to set up complete cross index system and place keys on markers and hooks in the cabinet as determined by the final key schedule.
  2. Provide multiple-drawer type cabinet.

**2.6 LOCKS, LATCHES AND BOLTS:**

- A. Strikes: Provide manufacturer's standards wrought box strike for each latch or lock bolt, with curved lip extended to protect frame, finished to match hardware set.
  - 1. Provide dust-proof strikes for foot bolts, except where special threshold construction provide non-recessed strike for bolt.
- B. Lock Throw: Provide 5/8" minimum throw of latch and deadbolt used on pairs of doors. Comply with UL requirements for throw of bolts and latch bolts on rated fire openings.
  - 1. Provide 1/2" minimum throw on other latch and deadlock bolt.
- C. Flush Bolt Heads: Minimum of 1/2" diameter rods of brass, bronze or stainless steel, with minimum 12" long rod.
- D. Exit Device Dogging: Except on fire-rated doors, wherever closers are provided on doors equipped with exit devices, equip the units with keyed dogging device to hold the push bar down and the latch bolt in the open position.

**2.7 PUSH/PULL UNITS:**

- A. Concealed Fasteners: Provide manufacturer's special concealed fastener system for installation; through-bolted for matched pairs, but not for single units.
- B. Decorative Units: Provide decorative push/pull sets in the design, finish, and fabricated from the indicated material.

**2.8 CLOSERS AND DOOR CONTROL DEVICES:**

- A. Size of Units: Except as otherwise specifically indicated, comply with the manufacturer's recommendations for size of door control unit, depending upon size of door, exposure to weather and anticipated frequency of use.
  - 1. Where parallel arms are used, provide closer unit one size larger than recommended for use with standard arms.
  - 2. Provide parallel arms for all overhead closers, except as otherwise indicated.
- B. Access-Free Manual Closers: Where manual closers are indicated for doors required to be accessible to the physically handicapped, provide adjustable units complying with ICC/ANSI A 117.1-2003 provisions for door opening force and delayed action closings.
- C. Combination Door Closures and Holders: Provide units designed to hold door in open position under normal usage.

**2.9 HARDWARE FINISHES:**

- A. Provide matching finishes for hardware units at each door or opening, to the greatest extent possible, and except as otherwise indicated. Reduce differences in color and textures as much as commercially possible where the base metal or metal forming process is different for individual units of hardware exposed at the same door or opening. In general, match items to the manufacturer's standard finish for the latch and lock set (or push-pull units if not latch-lock sets) for color and texture.
- B. Provide finishes which match those established by BHMA or, if none established, match the Architect's sample and that established as building standard.
- C. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness and other qualities complying with manufacturer's standards, but in no case less than specified for the applicable units of hardware by referenced standards.
- D. Provide protective lacquer coating on all exposed hardware finishes of brass, bronze and aluminum, except as otherwise indicated. The suffix "-NL" is used with standard finish designations to indicate "no lacquer".
- E. The designations used in schedules and elsewhere to indicate hardware finishes are those listed in "Materials & Finishes Standard 1301" by BHMA, including coordination with the traditional U.S. finishes shown by certain manufacturers for their products.
- F. The designations used in schedules and elsewhere to indicate hardware finishes are the industry-recognized standard commercial finishes, except as otherwise noted.
  - 1. Rust-Resistant Finish: For iron and steel base metal, required for exterior work, provide 0.2 mil thick copper coating on base metal before applying brass, bronze, nickel or chromium plated finishes.

**PART 3 – EXECUTION**

**3.1 INSTALLATION:**

- A. Mount hardware units at heights indicated in "Recommended Locations for Builders Hardware for Custom Steel Doors and Frames" by the Door and Hardware Institute, except as specifically

indicated or required to comply with governing regulations and except as otherwise directed by Architect.

- B. Install each hardware item in compliance with the manufacturer's instructions and recommendations. Wherever cutting and fitting is required to install hardware onto or into surfaces which are later to be painted or finished in another way. Coordinate removal, storage and reinstallation or application of surface protections with finishing work specified in the Division 9 Sections. Do not install surface-mounted items until finishes have been completed on the substrate.
- C. Set units level, plumb and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.
- D. Drilled and countersink units which are not factory-prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.

**3.2 ADJUST AND CLEAN:**

- A. Adjust and check each operating item of hardware and each door, to ensure proper operation or function of every unit. Replace which cannot be adjusted to operate freely and smoothly as intended for the application made.
- B. Final Adjustment: Wherever hardware installation is made more than one month prior to acceptance or occupancy of a space or area, return to the work during the week prior to acceptance or occupancy, and make final check and adjustment of all hardware items in such space or area. Clean operating items as necessary to restore proper function and finish of hardware and doors. Adjust door control devices to compensate for final operation of heating and ventilating equipment.
- C. Instruct Owner's Personnel in proper adjustment and maintenance of hardware and hardware finishes, during the final adjustment of hardware.
- D. Continued Maintenance Service: Approximately six months after the acceptance of hardware in each area, the Installer, accompanied by the representative of the latch and lock manufacturer, shall return to the project and readjust every item of hardware to restore proper function of doors and hardware. Consult with and instruct Owner's personnel in recommended additions to the maintenance procedures. Replace hardware items which have deteriorated or failed due to faulty design, materials or installation of hardware units. Prepare a written report of current and predictable problems (of substantial nature) in the performance of the hardware.

**3.3 HARDWARE SETS:**

**ATLANTIC COUNTY  
LENAPE PARK EAST - CATERING HALL DECK RENOVATIONS  
Hamilton Twp, Mays Landing, NJ  
June 24, 2019**

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**087000 – FINISH HARDWARE**

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**NOTE: COUNTY REQUIRES KEYING DONE BY HUBER LOCKSMITH  
(729 South Main Street Pleasantville, NJ 08232 (609) 646-5625)  
REFER TO SECTION# 2.5, B**

**Finishes: TO MATCH EXISTING**

Lockset: satin Chrome US 26D/652-626  
Hinges: exterior US32D/630 stainless steel  
interior: US 26D/652-626  
Mop plate: US 32D  
Threshold: 628  
Closers: 689

**HARDWARE SET #1:**        EXISTING Door from Main Hall D-2.

**For each Door:**

1        Existing Closer: Replace existing closer arm with a heavy duty hold open arm.

**HARDWARE SET #2:**        EXISTING Doors from Main Hall to Deck: D-1, D-3 and D-4

**For each Door:**

1        Install door holder Rockwood 3HHU1. Location as directed by Architect

**HARDWARE SET #3:**        - New Door from Deck to Exterior Ramp: DOOR D-5.

3	Hinges	Hager	BB1199, US32D
1	Panic device	Von Duprin	99 NL US32D
1	Key Removable Cylinder	as required by Huber	
1	Door Sweep	NGP	101VDKB
1	Jamb/Head Seal	NPG	9002 DKB
1	Door Closer	LCN	4040 XP, Bronze
1	Overhead Stop	Glyn Johnson	450H
1	Rain Drip	NPG	16 SS

**ATLANTIC COUNTY  
LENAPE PARK EAST - CATERING HALL DECK RENOVATIONS  
Hamilton Twp, Mays Landing, NJ  
June 24, 2019**

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**087000 – FINISH HARDWARE**

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1        Threshold        NPG 426 E, 6”, with vinyl foot seal option

Reinstall existing door holder bolted to ramp.

END OF SECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and General provisions of Contract, including General and Supplementary Conditions and Division 1 Specifications Sections apply to work of this section.

1.2 DESCRIPTION OF WORK:

- A. Provide glass and glazing that has been produced, fabricated and installed to withstand normal thermal movement, wind loading and impact loading, without failure including loss or breakage of glass, failure of sealants or gaskets to remain watertight and airtight, deterioration of glass and glazing materials and other defects in the work.
  - 1. Normal thermal movement is defined as that resulting from an ambient temperature range of 120 deg. F and from a consequent temperature range within glass and glass framing members of 180 deg. F.
  - 2. Deterioration of insulating glass is defined as failure of hermetic seal due to other causes than breakage which results in intrusion of dirt or moisture, internal condensation or fogging, deterioration of protected internal glass coating, resulting from seal failure, and any other visual evidence of seal failure or performance.
- B. Definitions: “Glass” includes prime glass, processed glass, and fabricated glass products. “Glazing” includes glass installation and materials used to install glass. Types of work in this Section include glass and glazing for:

Door Lites for Doors.

1.3 QUALITY ASSURANCE

- A. Glazing standards: Comply with the recommendations of Flat Glass Marketing Association (FGMA) “Glazing Manual” and “Sealant Manual” except where more stringent requirements are indicated. Refer to those publications for glass and glazing terms not otherwise defined in this Section or other referenced standards.
- B. Safety Glazing Standard: Where safety glass is indicated or required by the Authorities having Jurisdiction, provide the types of products indicated that comply with ANSI Z 97.1 and testing requirements of 16 CFR Part 1201 for category materials.
  - 1. Subject to compliance with requirements, provide safety glass permanently marked with certification label of Safety Glazing Certification Council (SGCC) or other certification agency acceptable to the Authorities having jurisdiction.



- C. Insulating Glass Certification Program: Provide insulating glass units permanently marked either on spacers or at least one component pane of units with appropriate certification label of inspecting and testing organization indicated below:
  - 1. Insulating Glass Certification Council (IGCC).
- D. Prime Glass Standard: FS DD-G-451

**1.4 SUBMITTALS:**

- A. Submit the following in accordance with SUBMITTALS, Division 1:
  - 1. Samples: 2 samples, 12” square, of each glass product, except for clear single-pane units, 12” samples of gaskets and glazing beads in each color required.
- B. Certificates: Submit certificates from respective manufacturers attesting that the glass and glazing materials furnished for the project comply with the specifications.

**1.5 JOB CONDITIONS:**

- A. Pre-Installation: Meet with other trades affected by glass installation, prior to beginning of installation. Do not perform work under adverse weather or job conditions. Install sealants when temperatures are within lower or middle third of temperature range recommended by manufacturer.

**1.6 SPECIFIED PRODUCT WARRANTY:**

- A. Warranty on Hermetic Seals: Provide insulating glass manufacturer’s written warranty, agreeing to, within specified warranty period, furnish FOB project site, replacement units for insulating glass units which have defective hermetic seals (excluding that due to glass breakage); defined to include intrusion of moisture or dirt, internal condensation at temperatures above –20 deg. F (-31 deg. C), deterioration of internal glass coatings and other visual evidence of seal failure or performance failure; provided manufacturer’s instructions for handling, installation, protection and maintenance have been adhered to during warranty period.
- B. Warranty period is 10 years after seal date permanently imprinted on unit, but not less than 9 years after date of substantial completion.

**PART 2 – PRODUCTS**

2.1 GLASS PRODUCTS:

- A. Prime Glass Manufacturer: One of the following for each type/color/pattern of glass:

Ford Glass Company  
Guardian Glass Company  
Libbey-Owens-Ford Company  
PPG Industries, Inc.

2.2 PROCESSED GLASS:

- A. Tempered Glass: 1/4", Grade B, Style 1, Type 1, quality 93 clear; provide prime glass which has been heated to strengthen glass in bending to not less than 4.5 times annealed strength.

2.3 SEALED INSULATING GLASS UNITS:

- A. General: Provide pre-assembled units consisting of organically sealed panes of glass enclosing a hermetically sealed dehydrated air space and complying with ASTM E 774 for performance classification indicated as well as with other requirements specified for glass characteristics, air space, sealing system, sealant, spacer material, corner design and desiccant.

1. For properties of individual glass panes making up units, refer to product requirements specified elsewhere in this Section applicable to types, classes, kinds and conditions of glass products indicated.
2. Provide full tempered panes of kind and at locations indicated or, if not indicated, provide full tempered panes where recommended by the authorities having jurisdiction for application.
3. Performance characteristics designated for coated insulating glass are nominal values based on manufacturer's published test data for units with 1/8" thick panes of glass and 3/4" thick air space.

U-values indicated are expressed in the number of BTU's per hour per sq. ft. per degree F difference.

4. Performance Classification per ASTM E774: Class A.

Thickness of Each Pane: 1/4"

Air Space Thickness: 1/2"

Glass Fill: ARGON OR KRYPTON

Visible light transmission: 75%.

Outdoor reflectance: 14%

U-value: .47

Shade Coefficient : .81

SHGC: .70

Sealing System: Manufacturer's standard.

Spacer Material: Manufacturer's standard metal.

Desiccant: Manufacturer's standard; either molecular sieve or silica gel or blend of both.

Corner Construction: Manufacturer's standard corner construction.

#### **2.4 GLAZING SEALANTS AND COMPONENTS**

A. Silicone Glazing Sealant: One part acid curing silicone sealant, Type S, Grade NS, uses, NT, G, A and as applicable to joint substrates indicated:

1. Material: Spectrum II – Tremco Or Approved Equal.
2. Color: to match framing.

#### **2.5 GLAZING GASKETS:**

A. Polyvinyl Chloride Glazing Gaskets: Provided by aluminum storefront manufacturers.

#### **2.6 MISCELLANEOUS GLAZING MATERIALS:**

A. Cleaners, Primers and Sealers: Type recommended by sealant or gasket manufacturer.

B. Setting Blocks: Neoprene or EPDM, 70-90 durometer hardness, with proven compatibility with sealants used.

C. Spacers: Neoprene or EPDM, 40-50 durometer hardness with proven compatibility with sealants used.

### **PART 3 – EXECUTION**

**3.1 STANDARDS AND PERFORMANCE:**

- A. Watertight and airtight installation of each glass product is required, except as otherwise shown. Each installation must withstand normal temperature changes, wind loading, impact loading (for operating sash and doors), without failure including loss or breakage of glass, failure of sealants or gaskets to remain watertight and airtight, deterioration of glazing materials and other defects in the work.
- B. Protect glass from edge damage during handling and installation, and subsequent operation of glazed components of the work. During installation, discard units with significant edge damage or other imperfections.
- C. Glazing channel dimensions as shown are intended to provide for necessary bite on glass, minimum edge clearance, and adequate sealant thicknesses, with reasonable tolerance. Adjust as required by job conditions at time of installation.
- D. Comply with combined recommendations and technical reports by manufacturers of glass and glazing products as used in each glazing channel, and with recommendations of Flat Glass Marketing Association “Glazing Manual”, except where more stringent requirements are indicated.
- E. Install insulating glass units to comply with recommendations by Sealed Insulating Glass Manufacturers Association, except as otherwise specifically indicated or recommended by glass and sealant manufacturers.

**3.2 PREPARATION FOR GLAZING:**

- A. Clean glazing channel and other framing members to receive glass, immediately before glazing. Remove coatings which are not firmly bonded to substrate. Remove lacquer from metal surfaces where elastomeric sealants are used.
- B. Apply primer or sealant to joint surfaces where recommended by sealant manufacturer.

**3.3 GLAZING:**

- A. Install setting blocks of proper size in sill rabbet, located 1/4<sup>th</sup> of glass width from each corner. Set blocks in thin course of heel-bead compound, if any.
- B. Provide spacers inside and out, of proper size and spacing, for glass sizes larger than 50 united inches, except where gaskets or pre-shimmed tapes are used for glazing. Provide 1/8” minimum bite of spacers on glass and use thickness equal to sealant width, except with sealant tape use thickness slightly less than final compressed thickness of tape.

**088000 – GLASS AND GLAZING**

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- D. Force sealants into channel to eliminate voids and to ensure complete “wetting” or bond of sealant to glass and channel surfaces.
- E. Tool exposed surfaces of glazing compounds to provide a substantial “wash” away from glass. Install pressurized tapes and gaskets to protrude slightly out of channel, so as to eliminate dirt and moisture pockets.
- F. Clean and trim excess glazing materials from glass and stops or frames promptly after installation, and eliminate stains and discolorations.

**3.4 CURE, PROTECTION AND CLEANING:**

- A. Protect exterior glass from breakage immediately upon installation, by use of crossed streamers attached to framing and held away from glass. Do not apply markers to surfaces of glass. Remove non-permanent labels and clean surfaces. Cure sealants for high early strength and durability.
- B. Remove and replace glass which is broken, chipped, cracked, abraded or damaged in other ways during construction period, including natural causes, accidents and vandalism.
- C. Wash and polish glass on both faces not more than 4 days prior to date scheduled for inspections intended to establish date of substantial completion in each area of project. Comply with glass product manufacturer’s recommendations for final cleaning.

**END OF SECTION 088000**

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and General provisions of Contract, including General and Supplementary Conditions and Division 1 Specifications Sections apply to work of this section.

1.2 DESCRIPTION OF WORK:

- A. The extent of gypsum drywall work is indicated on Drawings. Types of work include:
  - a. Paperless, mold resistant gypsum boards for ceiling.

1.3 QUALITY ASSURANCE

- A. Fire-Resistance Rating: Where gypsum drywall systems with fire-resistance ratings are indicated provide materials and installations which are identical with those of applicable assemblies tested per ASTM E 119 by fire testing laboratories acceptable to authorities having jurisdiction.

Provide fire-resistance rated assemblies identical to those indicated by reference to GA File No's. in GA "Fire Resistance Design Manual" or to design designations in UL "Fire Resistance Director" or in listing of other testing and agencies acceptable to authorities having jurisdiction.

- B. Gypsum Board Terminology Standard: GA-505 by Gypsum Association.

- C. Single-Source Responsibility:

Obtain gypsum board products from a single manufacturer, or from manufacturers recommended by the prime manufacturer of gypsum boards.

Obtain metal products from a single manufacturer or from manufacturers recommended by the prime manufacturer of gypsum boards.

1.4 SUBMITTALS:

- A. Submit the following in accordance with SUBMITTALS, Division 1:

Product Data: Submit manufacturer's product specifications and installation instructions for each gypsum drywall component, including other data as may be required to show compliance with these specifications.

Assembly Ratings: Submit G.A., U.L. or similar accepted test reports for all rated assemblies, reference to partition schedule by type and ratings.

1.5 DELIVERY, STORAGE AND HANDLING:

- A. Deliver materials in original packages, containers or bundles bearing brand name and identification of manufacturer or supplier.
- B. Store materials inside under cover and in manner to keep them dry, protected from weather, direct sunlight, surface contamination, corrosion and damage from construction traffic and other causes. Neatly stack gypsum boards flat to prevent sagging, on dunnage material 6" above surface.
- C. Handle gypsum boards to prevent damage to edges, ends or surfaces. Protect metal materials from being bent or damaged or corroded.

1.6 PROJECT CONDITIONS:

- A. Environmental Requirements General: Comply with requirements of referenced gypsum board application standards and recommendations of gypsum board manufacturer, for environmental conditions before, during and after application of gypsum board.
- B. Cold Weather Protection When ambient outdoor temperatures are below 55 deg. F maintain continuous, uniform, comfortable building working temperatures of not less than 55 deg F for a minimum period of 48 hours prior to, during and following application of gypsum board and joint treatment materials or bonding of adhesives.
- C. Ventilation: Ventilate building spaces as required to remove water in excess of that required for drying of joint treatment material immediately after its application. Avoid drafts during dry, hot weather to prevent too rapid drying.

1.7 REFERENCES:

- A. American Society Society for Testing and Materials (ASTM): C1288, Discrete Non-Asbestos Fiber-Cement Interior Substrate Sheets.
- B. American National Standards Institute (ANSI): A108.11, American National Standard for Interior Installation of Cementitious Backer Units.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS:

- A. Available Manufacturers: Subject to compliance with requirements, provide products by one of the following manufacturers or approved equal:

Gold Bond Building Products Div., National Gypsum Co.  
Georgia-Pacific  
United States Gypsum Co. Co.

- B. Paperless, Mold Resistant Gypsum board for basement ceilings.**

**Georgia-Pacific- Dens Armor Plus or equal Approved by Architect for 2-hour UL Design for basement ceiling.**

2.2 TRIM ACCESSORIES:

- A. General: Provide manufacturer's standard trim accessories of types indicated for drywall work, formed of galvanized steel unless otherwise indicated, with either knurled and perforated or expanded flanges for nailing or stapling, and beaded for concealment of flanges in joint compound. Provide corner beads, L-type edge trim-beads, U-type edge trim-beads, special L-kerf-type edge trim-beads, and one-piece control joint beads.

Finishing Type: Manufacturer's standard trim units which are to be finished with joint compound for each type of product.

2.3 JOINT TREATMENT MATERIALS:

- A. General: ASTM C 475; type recommended by the manufacturer for the application indicated, except as otherwise indicated.
- B. Joint Tape for Vinyl-Coated Cement Panels: Glass fiber, open weave, 2" wide.
- C. Joint Compound: Vinyl-type powder for interior use or ready-mixed vinyl-type for interior use.

Grade: 2 separate grades; one specifically for bedding tapes and filling depressions, and one for topping and sanding.



- D. Water-Resistant Joint Compound: Special water-resistant type for treatment of joints, fastener heads and cut edges of water-resistant backing board.

Product: Subject to compliance with requirements as recommended by panel manufacturer.

#### 2.4 MISCELLANEOUS MATERIALS:

- A. General: Provide auxiliary materials for gypsum drywall work of the type and grade recommended by the manufacturer of the gypsum board products.
- B. Gypsum Board Screws: Comply with ASTM C646.
- C. Exposed Acoustical Sealant: Non-oxidizing, skinnable, paintable, gunnable sealant for exposed applications per ASTM C 919.
- D. Water-Resistant Adhesive: Type I organic adhesive for ceramic tile complying with ANSI A 135.1.

### PART 3 - EXECUTION

#### 3.1 GENERAL GYPSUM BOARD INSTALLATION REQUIREMENTS

- A. Gypsum Board Application and Finishing Standards, and as indicated on drawings.
- B. Install ceiling boards in the direction and manner which will minimize the number of end-butt joints, and which will avoid end joint in the central area of each ceiling. Stagger end joints at least 1'-0".
- C. Install exposed gypsum board with face side out. Do not install imperfect, damaged or damp boards. Butt boards together for a light contact at edges and ends with not more than 1/16" open space between boards. Do not force into place.
- D. Form control joints and expansion joints with space between edges of boards, prepared to receive trim accessories.
- E. Space fasteners in gypsum boards in accordance with referenced standards and manufacturer's recommendations, except as otherwise indicated.

#### 3.2 METHODS OF GYPSUM DRYWALL APPLICATION:

- A. Refer to drawing for 2 hour UL Design for basement ceiling.

3.3 FINISHING OF DRYWALL:

- A. General: Apply treatment at gypsum board joints (both directions), flanges of trim accessories, penetrations, fastener heads, surface defects and elsewhere as required to prepared work for decoration.

Apply joint type at joints between gypsum boards, except where trim accessories are indicated.

Apply joint compound in 3 coats (not including prefill of openings in base), and sand between last 2 coats and after last coat.

- B. Refer to sections on painting in Division 9

3.4 PROTECTION OF WORK:

- A. Provide final protection and maintain conditions, in a manner suitable to Installer, which ensures gypsum drywall work being without damage or deterioration at time of substantial completion.

END OF SECTION

Part 1            General

1.1            The scope of work includes the recoating of the existing deck floor coating: grinding existing deck coating, repair existing damages areas, reinstallation of sloped areas to the doors, and the installation of new resinous coating system.

                  The existing coating system was installed by Bradley Floors,  
[www.Bradleyfloors.com](http://www.Bradleyfloors.com)

1.2            SECTION INCLUDES

A.            Labor, products, equipment and services necessary for resinous flooring Work in accordance with the Contract Drawings covering the following components:

- .1            **Defective areas patches with membrane Polycoat Products: PC-260 and epoxy fill with Epoxy Mortar: Sikafloor® 160 EpoRok.**
- .2            **Sloped ramps at doors resloped with Epoxy Mortar: Sikafloor® 160 EpoRok.**
- .3            **One coat 30 mil thick: Membrane: Polycoat Products: PC-260 for entire floor and cove base.**
- .4            **Next coat 20 mil thick: Membrane: Polycoat Products: PC-260 for entire floor and cove base with decorative flakes ProRez Pro-Flakes.**
- .5            **Top Coat: Sikafloor® 315 Urethane with slip resistant finish for entire floor and cove base.**
- .

1.3            REFERENCES

- A.            ASTM C579, Standard Test Methods for Compressive Strength of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing, and Polymer Concretes.
- B.            ASTM D2240, Standard Test Method for Rubber Property—Durometer Hardness.
- C.            ASTM D2369, Standard Test Method for Volatile Content of Coatings.
- D.            ASTM D4060, Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser.
- E.            ASTM D4541, Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers.
- F.            For additional standards please refer to Product Data Sheets

1.4 SUBMITTALS

- A. Comply with Section 01 33 00 - Submittal Procedures.
- B. Product Data: Submit manufacturer's product data, including physical properties and colors available.
- C. Manufacturer's Safety Data Sheet for each product being used.
- D. Product Samples: Submit Architectural Standard samples representative of the final finish, as applied. The Standard shall be approved in writing by the Architect and shall be the final standard of acceptance of the finish.
- E. Maintenance Instructions: Submit manufacturer's maintenance instructions.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications:
  - .1 **Manufacturer: Sika Corporation, [www.usa.sika.com](http://www.usa.sika.com)**
  - .2 **Manufacturer: Polycoat Products, [www.polycoatusa.com](http://www.polycoatusa.com)**
  - .3 **Manufacturer: PRO REZ, [www.prorezcoating.com](http://www.prorezcoating.com)**
  - .4 **Or Approved equal by Architect.**  
**Equivalent materials of other manufacturers may be substituted only on approval of the Architect. Requests shall include the respective manufacturer's technical literature for each product giving the name, generic type, descriptive information, recommended dry film thickness (DFT), Material Safety Data Sheet (MSDS), and certified test reports showing results to equal performance criteria of products specified herein.**
- B. Applicator Qualifications:
  - .1 **Pre-Qualification: Each bidder for this project shall be pre-qualified and approved in writing by the material manufacturer.**
  - .2 **Applicator Experience: Each bidder must have a minimum 5 years' experience in the application of the type of system specified. Contractor shall submit a list of five projects of similar size, scope and complexity.**
- C. Mock-Up:
  - .1 **Construct one 100 sq.ft. (10 sq.m.) Mock-up of each type and color of resinous flooring in location acceptable to Architect/Engineer to demonstrate quality of finished system, complying with manufacturer's instructions.**
  - .2 **Arrange for Architect/Engineer's review and acceptance, obtain written acceptance before proceeding with Work.**

**.3 Upon acceptance, mock-up shall serve as a minimum standard of quality for the balance of the work of this Section. Mock-up shall be left in place for the duration of the work.**

D. Pre-application Meeting: Convene a pre-application meeting two (2) weeks before start of application of floor coating. Require attendance of parties directly affecting work of this section, including Contractor, Architect, applicator, and manufacturer's representative. Review surface preparation, priming, application, curing, protection, and coordination with other work.

**1.6 DELIVERY, STORAGE AND HANDLING**

A. Delivery:

**.1 Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name, manufacturer, batch or lot number, and date of manufacture.**

**.2 Material should be delivered to job site and checked for completeness and shipping damage prior to job start.**

B. Storage:

**.1 Store materials in accordance with manufacturer's written instructions.**

**.2 Keep containers sealed until ready for use. Material should be stored in a dry, enclosed, protected area from the elements.**

**.3 Do not subject material to excessive heat or freezing.**

**.4 Shelf life: Established based on manufacturer's written recommendation for each material being used.**

C. Handling: Protect materials during handling and application to prevent damage or contamination.

D. Condition materials for use accordingly to manufacturer's written instructions prior to application.

E. Record material lot number and quantity delivered to jobsite/storage.

**1.7 SITE CONDITIONS**

A. Do not install the Work of this Section outside of the following environmental ranges with Manufacturers' written acceptance, but not limited to:

**.1 Material Temperature: Precondition material for at least 24 hours between 65° to 75°F (18° to 24°C)**

**.2 Ambient Temperature: Minimum/Maximum 50°/85°F (10°/30°C)**

**.3 Substrate Temperature: Minimum/Maximum 50°/85°F (10°/30°C). Substrate temperature must be at least 5°F (3°C) above measured Dew Point.**

- .4 **Mixing and Application attempted at Material, Ambient and/or Substrate Temperature conditions less than 65°F (18°C) will result in a decrease in product workability and slower cure rates.**
- .5 **Relative Ambient Humidity: Minimum ambient humidity 30%, maximum ambient humidity 75% (during application and curing)**
- .6 **Measure and confirm Substrate Moisture Content, Ambient Relative Humidity, Ambient and Surface Temperature and Dew Point.**
- .7 **Any other requirements as per the different product manufacturers.**

**B. Substrate moisture:**

- .1 **Conduct test for moisture content.**
- .2 **Consider moisture mitigation systems or moisture tolerant primer.**

- C. Maintain constant ambient room temperature of plus or minus 15°F (plus or minus 7°C) with a minimum temperature of 50°F (10°C) and maximum temperature of 85°F (30°C). Maintain constant ambient room temperature for 48 hours before, during and after installation, or until cured. Do not apply while ambient and temperatures are rising. Any other requirements as per the different product manufacturers.
- D. Erect suitable barriers and post legible signs at points of entry to prevent traffic and trades from entering the work area during application and cure period of the floor.
- E. Protection of finished floor from damage by subsequent trades shall be the responsibility of the General Contractor.
- F. Insure adequate ventilation and air flow.

**1.8 WARRANTY**

- A. Manufacturer's warranty covering the resinous flooring against defects in materials for one year from date of installation.
- B. Installer and General Contractor warranty for Five (5) years for the entire coating system composed of all the components from the three manufacturers.
- C. The Installer and General Contractor shall submit a maintenance recoating proposal to the County for recoating at the end of the 5 year warranty. The County will review and pay additional fees for this additional maintenance proposal.
- D. **The existing coating system was installed by Bradley Floors,  
[www.Bradleyfloors.com](http://www.Bradleyfloors.com)**

Part 2 Products

2.1 MANUFACTURER

- A. Manufacturer shall be certified under ISO 9001: 2008 All liquid materials, including primers, resins, curing agents, finish coats, and sealants are manufactured and tested under an ISO 9001:2008 registered quality system.
- B. Approved Manufacturer shall be
- .1 **Manufacturer: Sika Corporation, [www.usa.sika.com](http://www.usa.sika.com)**
  - .2 **Manufacturer: Polycoat Products, [www.polycoatusa.com](http://www.polycoatusa.com)**
  - .3 **Manufacturer: PRO REZ, [www.prorezcoating.com](http://www.prorezcoating.com)**
  - .4 **Or Approved equal by Architect.**  
**Equivalent materials of other manufacturers may be substituted only on approval of the Architect. Requests shall include the respective manufacturer's technical literature for each product giving the name, generic type, descriptive information, recommended dry film thickness (DFT), Material Safety Data Sheet (MSDS), and certified test reports showing results to equal performance criteria of products specified herein.**

2.2 SYSTEM

- A. System description:

1. Replace plywood decking that is damaged.
2. Grind the entire coated deck flooring and cove base, including the exterior deck floor area, and the scuppers
3. Repair defective areas patches with membrane Polycoat Products: PC-260 and epoxy fill with epoxy mortar: Sikafloor® 160 EpoRok.
4. Remove the existing ramp materials at the doors, and resloped with Epoxy Mortar: Sikafloor® 160 EpoRok.
5. Install One (1) coat 30 mil thick membrane on the entire floor and cove base, Membrane: Polycoat Products: PC-260.
6. Install another (1) One coat 20 mil thick on the entire floor and cove base: Membrane: Polycoat Products: PC-260 with decorative flakes ProRez Pro-Flakes.
7. Install a top Coat: Sikafloor® 315 Urethane with slip resistant finish for entire floor and cove base.
8. The scope of work also includes the exterior deck floor area overhang as shown on the drawings, and the scuppers.
9. The transition at the exterior door threshold shall be particularly considered to provide a weathertight installation. The resinous coating shall wrap down the deck vertical edge at the transition between the deck and the exterior ramp landing, with a gap between the deck and the exterior landing allowing the rain to drain to the exterior.

### 2.3 MATERIALS

- A. Epoxy Mortar: Sikafloor-160 EpoRok is a three-component, high solids epoxy floor resurfacer:
- .1 **Pull-off Strength (ASTM D4541): > 400 psi (2.7 MPa) with 100% concrete failure.**
  - .2 **Shore D Hardness (ASTM D2240): 78 - 82 at 7 days.**
  - .3 **Solid Content: ~ 100% (by volume) / ~ 100% (by weight).**
  - .4 **VOC Content (ASTM D2369): ≤ 50 g/L.**
  - .5 **Compressive Strength (ASTM C579): 7,250 psi (50 N/mm<sup>2</sup>) at 28 days.**
  - .6 **Flexural Strength (ASTM C580): 2,900 psi (20 N/mm<sup>2</sup>) at 28 days.**
- B. Membrane: Polycoat Products: PC-260, is a two component, fast setting, fast curing, solvent free, flexible, high performance, and high solid polyurethane elastomeric coating.
- .1 **Dry Film Thickness per coat 15 +/- 1 mils**
  - .2 **Shore D Hardness (ASTM D2240): 64 +/- Shore A**
  - .3 **Tear resistance, Die C, ASTM D-624 230 +/- 25 pli**



- .4 Split Tear, ASTM D-470 60 +/- 5 pli
- .5 Tensile strength ASTM D-412 1500 +/- 100 psi
- .6 Ultimate Elongation ASTM D-412 1000 +/- 100%
- .7 Solid Content ASTM D-2369 94 +/- 2% by weight
- .8 Solid Content ASTM D-2697 95 +/- 2% by volume
- .9 Viscosity at 75%  
Side A- 2500-3000 +/- 500 cps  
Side B 100 +/- 50 cps
- .10 VOC Content (ASTM D2369): ≤ 0.04 lb/gal (5 g/L).

C. Decorative Flakes Broadcast Resurfacing Systems, ProRez. Color blend as selected by Architect.

- .1 100% Solid material- Low Odor.
- .2 Highly Moisture Tolerance.
- .3 Chemical and Stain Resistant.
- .4 Colorfast Polymer flakes.
- .5 Varied Non-Slip textures.
- .6 UV Stable- Gloss or Satin finish.

D. Top Coat: Sikafloor 315 is a high solids, low VOC abrasion resistant, aliphatic polyurethane coating:

- .1 Pull-off Strength to Primed Concrete (ASTM D4541): > 400 psi (2.76 MPa) with 100% concrete failure.
- .2 Hardness (ASTM D 3363 Pencil): 2H to 3H concrete failure.
- .3 VOC Content (ASTM D2369): With Wear Aggregate ≤ 100 g/L, With Sikafloor Urethane Color Add Only ≤ 50 g/L.
- .4 Tensile Strength (ASTM D2370): 2,882 psi.
- .5 Elongation: 2.29.
- .6 Abrasion Resistance (ASTM D4060): 0.01 - 0.02 grams (CS-17 Wheel, 1000 gm load, 1000 cycles).
- .7 Coefficient Of Friction (ASTM D2047): 0.6 - 0.7.
- .8 Slip Resistance: Equivalent to ASTM D2047 Passes.

Part 3 Execution

3.1 EXAMINATION

- A. Examine surfaces to receive flooring system. Notify Architect/General Contractor/Owner/Owner's representative if surfaces are not acceptable. Do not begin surface preparation or application until unacceptable conditions have been corrected.
- B. Surface must be clean, sound and dry. Remove dust, laitance, grease, curing compounds bond inhibiting impregnations, waxes and any other contaminants. All projections, rough spots, etc. should be dressed off to achieve a level surface prior to the application.
- C. Substrate moisture:
  - .1 **Measure and confirm Substrate Moisture Content, Ambient Relative Humidity, Ambient and Surface Temperature and Dew Point.**
  - .2 **Confirm and record above values at least once every 3 hours during installation, or more frequently whenever conditions change (e.g. Ambient Temperature rise/fall, Relative Humidity increase/decrease, etc.).**
- D. Ensure floor substrate conforms to the minimum requirements of the flooring manufacturer.
- E. Replace plywood decking that is damaged.

3.2 SURFACE PREPARATION

- A. Prepare surface to receive flooring systems in accordance with manufacturer's written instructions.
- B. Remove dirt, oil, grease, wax, laitance, curing compounds, etc.
- C. Remove the existing ramp materials at the doors.
- D. Grind the entire coated deck flooring and coved base, including the exterior deck floor area, and the scuppers

3.3 APPLICATION

- A. Mix and apply material with strict adherence to manufacturer's written installation procedures and coverage rates.
- B. Follow Manufacturer's written recommendations on terminations and connections to walls, drains, doorways, columns and floor-to-floor transitions.
- C. Do not apply while ambient and substrate temperatures are rising.
- D. Patch defective areas with membrane Polycoat Products: PC-260 and epoxy fill with epoxy mortar: Sikafloor® 160 EpoRok.

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- E. Re-sloped ramp at doors with Epoxy Mortar: Sikafloor® 160 EpoRok.
- F. Apply resinous flooring with care to ensure that no laps, voids, or other marks or irregularities are visible, and with an appearance of uniform color, sheen and texture, all within limitations of materials and areas concerned.
- G. Install One (1) coat 30 mil thick membrane on the entire floor and cove base, Membrane: Polycoat Products: PC-260.
- H. Install another (1) One coat 20 mil thick on the entire floor and cove base: Membrane: Polycoat Products: PC-260 with decorative flakes ProRez Pro- Flakes.
- I. Install a top Coat: Sikafloor® 315 Urethane with slip resistant finish for entire floor and cove base.
- J. The scope of work includes the entire deck floor and cove base, and also the exterior overhang deck floor area as shown on the plans, and the scuppers. The transition at the exterior door threshold shall be particularly considered to provide a weathertight installation. The resinous coating shall wrap down the deck vertical edge at the transition between the deck and the exterior ramp landing, with a gap between the deck and the exterior landing allowing the rain to drain to the exterior.
- K. Match colors and textures of approved samples.

**3.4 CLEAN UP**

- A. Disposal of this product, solution and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.
- B. Empty containers should be taken to an approved waste handling site for recycling or disposal.

**3.5 PROTECTION**

- A. Freshly applied material should be protected from dampness, condensation and water for at least 72 hrs.
- B. Beware of air flow and changes in air flow. Introduction of dust, debris, and particles, etc. may result in surface imperfections and other defects.
- C. Follow manufacturer's written recommendation with respect to cure, wait time and return to service.

**END OF SECTION**

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and General provisions of Contract, including General and Supplementary Conditions and Division 1 Specifications Sections apply to work of this section.

1.2 DESCRIPTION OF WORK:

- A. Extent of painting work is indicated on drawings and schedules, and as herein specified.
- B. Work includes painting and finishing of interior and exterior exposed items and surfaces throughout Project, except as otherwise indicated.
  - 1. Surface preparation, priming and coats of paint specified are in addition to shop-priming and surface treatment specified under other sections of work.
- C. Paint as used herein means all coating systems materials, including primers, emulsions, enamels, stains, sealers and fillers, and other applied materials whether used as prime, intermediate or finish coats.
- D. Surfaces to be Painted: Except where natural finish of material is specifically noted as a surface not to be painted, paint exposed surfaces whether or not colors are designated in “schedules”. Where items or surfaces are not specifically mentioned, paint the same as similar adjacent materials or areas. If color or finish is not designated, Architect will select these from standard colors or finishes available.
- E. Following categories of work are not included as part of field-applied finish work.
  - 1. Pre-Finished Items: Unless otherwise indicated, do not include painting when factory-finishing or installer-finishing is specified for such items as (but not limited to) metal toilet enclosures, prefinished partition systems, acoustic materials, architectural woodwork and casework, and finished mechanical and electrical equipment, including light fixtures, switchgear and distribution cabinets.
  - 2. Concealed surfaces not to be painted included wall or ceiling surfaces in the following generally inaccessible areas: Foundation spaces; furred areas; utility tunnels; pipe spaces; duct shafts; elevator shafts.
  - 3. Finished metal surfaces not to be painted include: anodized aluminum; stainless steel; chromium plate; copper; bronze; brass.

4. Operating parts not to be painted include moving parts of operating equipment such as the following: valve and damper operators; linkages; sensing devices; motor and fan shafts.
5. Labels: Do not paint over Underwriter’s Laboratories, Factory Mutual or other code-required labels or equipment name, identification, performance rating, or nomenclature plates.

G. Related Sections: The following sections contain requirements that relate to this section:

1. Division 8 Section “Steel Doors and Frames” for shop priming steel doors and frames.

### 1.3 DEFINITIONS

- A. “Paint” includes coating systems materials, primers, emulsions, enamels, stains, sealers and fillers, and other applied materials whether used as prime, intermediate, or finish coats.

### 1.4 SUBMITTALS:

- A. Product Data: Submit manufacturer’s technical information including Paint Label analysis and application instructions for each material proposed for use.
- B. Samples: Prior to beginning work, Architect will define all for surfaces to be painted and request certain samples. Use representative colors when preparing samples for review. Submit samples for Architect’s review of color and texture only. Provide a listing of material and application for each coat of each finish sample.

### 1.5 DELIVERY AND STORAGE

- A. Deliver materials to job site in original, new and unopened packages and containers bearing manufacturer’s name and label, and following information:

Name or title of material.  
Federal Spec. number, if applicable  
Manufacturer’s stock number and date of manufacture  
Manufacturer’s name.  
Contents by volume, for major pigment and vehicle constituents.  
Thinning instructions.  
Application instructions.  
Color name and number.

- B. Store materials not in actual use in tightly covered containers. Maintain containers used in storage of paint in a clean condition, free of foreign materials and residue.
  - 1. Protect from freezing where necessary. Keep storage area neat and orderly. Remove oily rags and waste daily. Take all precautions to ensure that workmen and work areas are adequately protected from fire hazards and health hazards resulting from handling, mixing and application of paints.

1.6 JOB CONDITIONS

- A. Apply water-base paints only when temperature of surfaces to be painted and surrounding air temperatures are between 50 deg. F (10 deg. C) and 90 deg. F (32 deg. C), unless otherwise permitted by paint manufacturer's printed instructions.
- B. Apply solvent-thinned paints only when temperature of surfaces to be painted and surrounding air temperatures are between 45 deg. F (70 deg. C) and 95 deg. F (35 deg. C), unless otherwise permitted by paint manufacturer's printed instructions.
- C. Do not paint in snow, rain, fog or mist, or when relative humidity exceeds 85%, or to damp or wet surfaces, unless otherwise permitted by paint manufacturer's printed instructions.
  - 1. Painting may be continued during inclement weather if areas and surfaces to be painted are enclosed and heated within temperature limits specified by paint manufacturer during application and drying periods.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS:

- A. Available Manufacturers: Subject to compliance with requirements, utilize manufacturers offering products which comply with the drawings and specifications.

Sherwin Williams  
PPG Industries  
Or Approved Equal by Architect.

2.2 MATERIALS:

- A. Material Quality: Provide best quality grade of various types of coating as regularly manufactured by acceptable paint materials manufacturers. Materials not displaying

manufacturer's identification as a standard, best-grade product will not be acceptable. Materials containing less than 21% titanium dioxide will not be acceptable. All fillers must be pure vinyl.

1. Proprietary names used to designate color or materials are not intended to imply that products of named manufacturers are required to exclusion of equivalent products of other manufacturers.
2. Federal Specifications establish minimum acceptable quality for paint materials. Provide written certification from paint manufacturer that materials provided meet or exceed these minimums.
3. Manufacturer's products which comply with coating qualitative requirements of applicable Federal Specifications, yet differ in quantitative requirements, may be considered for use when acceptable to Architect. Furnish material data and manufacturer's certificate of performance to Architect for any proposed substitutions.
4. One Source Responsibility: It is the intent of these specifications that all paint products be furnished from one manufacturer. In the event that this is not possible, the Contractor will submit justification for differing sources of supply and will be responsible for any incompatibilities between products that may result.

B. Color Pigments: Pure, non-fading, applicable types to suit substrates and service indicated.

1. Lead content in pigment, if any, is limited to contain not more than 0.06% lead, as lead metal based on the total non-volatile (dry-film) of paint by weight.
2. This limitation is extended to interior surfaces and those exterior surfaces, such as stairs, decks, porches, railings, windows, and doors which are readily accessible to children under seven years of age.

### PART 3 - EXECUTION

#### 3.1 INSPECTION:

- A. Applicator must examine areas and conditions under which painting work is to be applied and notify Contractor in writing of conditions detrimental to proper and timely

completion of work. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to Applicator.

- B. Starting of painting work will be construed as Applicator's acceptance of surfaces and conditions within any particular area.
- C. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions otherwise detrimental to formation of a durable paint film.

**3.2 SURFACE PREPARATION:**

- A. General: Perform preparation and cleaning procedures in accordance with paint manufacturer's instructions and as herein specified, for each particular substrate condition.
  - 1. Provide barrier coats over incompatible primers or remove and reprime as required. Notify Architect in writing of any anticipated problems in using the specified coating systems with substrates primed by others.
  - 2. Remove hardware, hardware accessories, machined surfaces, plates, lighting fixtures, and similar items in place and not to be finish-painted, or provide surface-applied protection prior to surface preparation and painting operations. Remove, if necessary, for complete painting of items and adjacent surfaces. Following completion of painting of each space or area, reinstall removed items.
  - 3. Clean surfaces to be painted before applying paint or surface treatments. Remove oil and grease prior to mechanical cleaning. Program cleaning and painting so that contaminants from cleaning process will not fall onto wet, newly-painted surfaces.
  - 4. Determine alkalinity and moisture content of surfaces to be painted by performing appropriate tests. If surfaces are found to be sufficiently alkaline to cause blistering and burning of finish paint, correct this condition before application of paint. Do not paint over surfaces where moisture content exceeds that permitted in manufacturer's printed directions.
  - 5. Clean concrete floor surfaces scheduled to be painted with a commercial solution or muriatic acid, or other etching cleaner. Flush floor with clean water to neutralize acid, and allow to dry before painting.
- B. Previously coated surfaces:



1. Perform surface preparation and cleaning procedures in accordance with paint manufacturer's instructions and as herein specified. (Specifically for Sherwin Williams Paints refer to S-W 12 on page 3 of the Painting System catalog.)
  1. All surface contamination such as oil, grease loose paint, mill scale dirt, foreign matters, rust, mold, mildew, efflorescent, and sealers must be removed to assure sound bonding to the tightly adhering old paint. Glossy surfaces of old paint films must be clean and dull before repainting. Through washing with abrasive cleanser to clean and wash and dull in one operation, or, wash thoroughly and dull by sanding. Spot prime any bare areas with an appropriate primer.
  2. Check for compatibility by applying a test patch of the recommended coating system, covering at least 2 to 3 square feet. Allow to dry one week before testing adhesion per ASTM D3359. If the coating system is incompatible, complete removal is required per ASTM D4259.
- C. Ferrous Metals: Clean ferrous surfaces, which are not galvanized or shop-coated, of oil, grease, dirt, loose mill scale, rust and other foreign substances by solvent or mechanical cleaning.
- D. Touch-up shop-applied prime coats wherever damaged or bare, where required by other sections of these specifications. Clean and touch-up with same type shop primer.
- E. Galvanized Surfaces: Clean free of oil and surface contaminants with non-petroleum based solvent.

### 3.3 MATERIALS PREPARATION:

- A. Mix and prepare painting materials in accordance with manufacturer's directions.
- B. Maintain containers used in mixing and application of paint in a clean condition, free of foreign materials and residue.
- C. Stir materials before application to produce a mixture of uniform density, and stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using.

### 3.4 APPLICATION:

- A. General: Apply paint in accordance with manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied.
  1. Paint colors, surface treatments, and finishes, are indicated in "schedules" of the contract documents.

2. Provide finish coats which are compatible with prime paints used.
  3. Apply additional coats when undercoats, stains or other conditions show through final coat of paint, until paint film is on uniform finish, color and appearance. Give special attention to insure that surfaces, including edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
  4. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Paint surfaces behind permanently fixed equipment or furniture with prime coat only before final installation of equipment.
  5. Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, non-specular black paint.
  6. Paint back sides of access panels, and removable or hinges covers to match exposed surfaces.
  7. Finish exterior doors on tops, bottoms and side edges same as exterior faces, unless otherwise indicated.
  8. Sand lightly between each succeeding enamel or varnish coat.
  9. Omit first coat (primer) on metal surfaces which have been shop-primed and touch-up painted, unless otherwise indicated.
- B. Scheduling Painting: Apply first-coat material to surfaces that have been cleaned, pretreated or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
1. Allow sufficient time between successive coatings to permit proper drying. Do not recoat until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.
- C. Minimum Coating Thickness: Apply materials at not less than manufacturer's recommended spreading rate, to establish a total dry film thickness as indicated or, if not indicated, as recommended by coating manufacturer.
- D. Mechanical and Electrical Work: Painting of mechanical and electrical work is limited to those items exposed to mechanical equipment rooms, in occupied spaces, and as defined to be painted by the Architect.

- E. Prime Coats: Apply prime coat of material which is required to be painted or finished, and which has not been prime coated by others.
  - 1. Recoat primed and sealed surfaces where there is evidence of suction spots or unsealed areas in first coat, to assure a finish coat with no burn-through or other defects due to insufficient sealing.
- F. Stipple Enamel Finish: Roll and redistribute paint to an even and fine texture. Leave no evidence of rolling such as laps, irregularity in texture, skid marks, or other surface imperfections.
- G. Pigmented (Opaque) Finishes: Completely cover to provide an opaque, smooth surface of uniform finish, color, appearance and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness or other surface imperfections will not be acceptable.
- H. Completed Work: Match approved samples for color, texture and coverage. Remove, refinish or repaint work not in compliance with specified requirements.

**3.5 FIELD QUALITY CONTROL:**

- A. The right is reserved by Owner to invoke the following material testing procedure at any time, and any number of times during period of field painting:
- B. Engage services of an independent testing laboratory to sample paint being used. Samples of materials delivered to project site will be taken, identified and sealed, and certified in presence of Contractor.
- C. Testing laboratory will perform appropriate tests for any or all of following characteristics: Abrasion resistance, apparent reflectivity, flexibility, washability, absorption, accelerated weathering, dry opacity, accelerated yellowness, recoating, skinning, color retention, alkali resistance and quantitative materials analysis.
- D. If test results show that material being used does not comply with specified requirements, Contractor may be directed to stop painting work, and remove non-complying paint; pay for testing; repaint surfaces coated with rejected paint; remove rejected paint from previously painted surfaces if, upon repainting with specified paint, the two coatings are non-compatible.

**3.6 CLEAN-UP AND PROTECTION:**

- A. Clean-Up: During progress of work, remove from site discarded paint materials, rubbish, cans and rags at end of each work day.

- B. Upon completion of painting work, clean window glass and other paint spattered surfaces. Remove spattered paint by proper methods of washing and scraping, using care not to scratch or otherwise damage finished surfaces.
- C. Protection: Protect work of other trades, whether to be painted or not, against damage by painting and finishing work. Correct any damage by cleaning, repairing or replacing, and repainting, as acceptable to Architect.
  - 1. Provide “Wet Paint” signs as required to protect newly-painted finishes. Remove temporary protective wrappings provided by others for protection of their work, after completion of painting operations.
  - 2. At completion of work of other trades, touch-up and restore all damaged or defaced painted surfaces.

3.7 PAINT SCHEDULE:

General: Provide the following paint systems for the various substrates, as indicated.

**Basis of Design Sherwin Williams. . Refer to all SW product and MSDS pages for all additional surface preparation, application, safety-precaution and other recommendation before proceeding.**

3.8 EXTERIOR PAINT SCHEDULE:

- A. General: Provide the following Paint systems for the various substrates, as indicated:
    - 1. Galvanized Ferrous Metal:
      - A. Gloss Finish. Color: SW-0048 Bunglehouse Blue to match existing.
- Primer: S-W Pro Industrial ProCryl Universal Primer.  
First Coat: S-W DTM Acrylic Gloss.  
Second Coat: S-W DTM Acrylic Gloss.
- 2. Fiber Cement Siding, Panels, and trim:

Prefinished by cement board manufacturer. Refer to section 074600

Touch up as required. Coordinate with Siding Manufacturer.

3.9 INTERIOR PAINT SCHEDULE:

- A. General: Provide the following paint systems for the various substrates, as indicated. Colors will be provided by the Architect at a future date.
1. Gypsum Drywall Systems: Ceiling, Color : white, Egg Shell  
  
First Coat: S-W Pro-Mar 200 Latex Primer, Zero VOC  
Second Coat: S-W Harmony Acrylic Latex , Zero VOC,, Egg Shell Finish.  
Third Coat: S-W Pro- Harmony Acrylic Latex, Zero VOC,, Egg Shell Finish
  
  2. Painted Galvanized Ferrous Metal: Color: SW-0048 Bunglehouse Blue to match existing  
  
One Coat: DTM Acrylic Semigloss
  
  3. Fiber Cement Siding, Panels and Trim:  
  
Prefinished by cement board manufacturer. Refer to section 074600  
  
Touch up as required. Coordinate with Siding Manufacturer.

END OF SECTION

SECTION 12490 – VINYL SHEET WINDOW

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and General provisions of Contract, including General and Supplementary Conditions and Division 1 Specifications Sections apply to work of this section.

1.2 SUMMARY

A. Section includes:

1. Supply and Install twelve (12) clear vinyl sheet window units with snap on attachments to Azek or equal trim, around window opening. The window materials and gage shall match the existing zip windows. The metal shall be stainless steel or corrosion resistant.
2. Supply twelve (12) storage bags for the new twelve (12) vinyl sheet window units to be stored away during summer. The storage bag material shall be made with a durable fabric with the strap to be hung. Each storage bag shall be numbered.
3. New anchoring straps for the existing twelve zip vinyl sheet window units to be installed on the inside of the room when the windows are open.
4. Supply and installed 30 additional straps for future use, as described in #3.
5. The existing zip vinyl sheet window unit were fabricated by Custom Upholstery Center, 420 S New Road, Pleasantville.

1.3 SUBMITTALS:

- A. Shop Drawings: Indicate opening sizes, tolerances required, method of attachment, etc
- B. Product Data: Submit data indicating physical and dimensional characteristics, operating features, etc.
- C. Samples: Submit two samples, 12" x 12" size illustrating materials, finish, and color.
- D. Provide mock-up for :
  1. Clear vinyl sheet window units with snap on attachments to Azek or equal trim.

2. Storage bag for the new vinyl sheet window unit, including strap and numbering.
3. New anchoring straps for the existing twelve zip vinyl sheet window units to be installed on the inside of the

1.4 QUALIFICATIONS:

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum five years documented experience.

1.5 FIELD MEASUREMENTS

- A. Verify field measurements prior to fabrication.

1.6 COORDINATION

- A. Coordinate the Work of window installation and placement of Azek trim around existing openings.

**PART 2 – PRODUCTS**

- 2.1 Products for the new window shall match the materials and gage of the existing zip windows. The metal shall be stainless steel or corrosion resistant.

2.2 FABRICATION:

- A. Fabricate new windows to fit within existing openings, and to be snap on new Azek trim.
- B. Fabricate storage bags to be durable and to be able to be hung during the summer in the basement.

**PART 3 – EXECUTION**

3.1 EXAMINATION:

- A. Verify that openings are ready to receive the work.
- B. Ensure Azek trim are correctly placed.

3.2 INSTALLATION

- A. Install windows in place with snap on attachment.

- B. Provide clearance between the existing and the new window as required for a smooth operation.

3.3 ERECTION TOLERANCES

- A. 1/4 inch to vertical and horizontal.

3.4 ADJUSTING

- A. Adjust windows and attachment for smooth operation.

3.5 CLEANING

- A. Clean window surfaces just prior to occupancy.

END OF SECTION 12490



SECTION 15010 - BASIC MECHANICAL REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to work of this section.
- B. The General Conditions, Special Conditions, Supplementary Conditions, Division 1 Specification Sections, Conditions of Contract and other similar Contract Documents apply to and form a part of this Division.
- C. The applicable portions of the requirements described in this Sub-division 15 shall apply to all work included in the Mechanical and Electrical Documents.

1.2 SCOPE OF WORK

- A. The work shall include all mechanical and incidental electrical construction as shown on the Contract Drawings and as mentioned in this Division of the Specifications.
- B. The facility shall remain in use throughout construction. Contractor shall maintain all means of egress from facility and provide all temporary protection required to maintain the safety of the building's occupants.
- C. Work includes, but is not limited to, the following scope:
  - 1. Installation of all mechanical work indicated on the construction drawings.
  - 2. Contractor shall not interrupt operation of any existing heating, cooling and ventilation systems serving the facility.
  - 3. Contractor shall maintain full operation of the building's existing mechanical, electrical, plumbing and fire alarms systems serving all areas of the facility.
  - 4. Any shutdowns of mechanical, plumbing, electrical and fire alarm systems are to be performed only during periods when the building is not occupied. Contractor shall coordinate with the County all dates, times and durations of all shutdowns no less than two (2) weeks prior to the actual shutdown(s).
  - 5. Contractor shall be responsible to make all necessary permit applications, pay all permit fees and acquire all permits for specified mechanical work. Contractor shall be responsible to be properly licensed in the State of New Jersey to perform public work and be properly licensed to perform specified work as required by the local authorities having jurisdiction.
  - 6. Contractor shall furnish and install new mechanical equipment, controls, piping, devices, appurtenances, etc., required for the proper operation of new heating and air conditioning

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- systems as specified on the project's contract drawings and within the technical specifications.
7. Contractor shall coordinate with all other trades the installation of the new mechanical systems. Contractor shall perform all mechanical work necessary for a fully code compliant new heating and cooling system.
  8. Contractor shall coordinate with the Electrical Contractor as to the electrical requirements of all new mechanical systems. No electrified equipment shall be purchased until the Electrical Contractor has confirmed available power requirements.
  9. All bid drawings are diagrammatic and must be field verified by the Contractor prior to commencing any work.
  10. Contractor shall provide all necessary materials and services for installation of all new mechanical equipment, piping, devices, controls, appurtenances, etc., including, but not limited to, all necessary wall, roof and floor openings and penetrations. All wall, roof and floor openings and penetrations shall be properly sealed. Where openings or penetrations are through a fire rated assembly, as identified on the Architectural Drawings, the openings and penetrations shall be firesafed.
  11. Contractors shall provide all necessary materials and services for cutting and patching of walls, ceilings and floors disturbed as part of their work. All patched/repared walls, floors and ceilings shall be painted to match existing finishes.
  12. Prior to Bid, Contractor shall thoroughly inspect the project's site and include in the Contractor's bid and scope of work, all necessary relocations of interfering equipment, devices, piping, conduit, wiring, curbing, sidewalk, landscaping, etc., that are required to properly locate all new specified mechanical and electrical equipment, piping, conduit, wiring, devices, appurtenances, etc., in locations shown on Contract Drawings.
  13. Contractor shall provide all necessary material and services for installation of incidental electrical work required for the complete installation of the aforementioned mechanical equipment, devices, piping, systems, controls, etc.
  14. Contractor shall acquire all permits and pay all fees necessary to perform the specified work.
- D. Contractor shall include in their base bid amount a full twelve (12) months of maintenance services (which includes full labor and materials) on all new mechanical systems, with a three (3) month interval as maximum time-period between calls, as follows:
1. Provide 24-hour emergency service on breakdowns and malfunctions of new mechanical systems.
  2. Include all maintenance items as outlined in manufacturer's operating and maintenance data.
  3. Submit copy of service call work order or report and include description of work performed.
- E. Coordinate all work in this Division with all related trades.

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1.3 INTENT

- A. It is the intent of the Specifications and Drawings to call for finished work, tested and ready for operation.
- B. Any apparatus, appliance, material or work not shown on drawings but mentioned in the specifications, or vice versa, or any incidental accessories necessary to make the work complete in all respects and ready for operation shall be furnished, delivered and installed by the Contractor without additional expense to the Owner.

1.4 DEFINITIONS

- A. The term “Mechanical Contractor”, “HVAC Contractor”, “Prime Contractor” or “Contractor” when used in this Division refers to the contractor responsible for all Mechanical systems work under this Division.
- B. The term “provide” shall mean to furnish and install.
- C. The term “furnish” when used separately shall mean to obtain and deliver the item to job site for installation by Other Trades.

1.5 SINGULAR NUMBER

- A. A reference made to any item in the singular number shall apply equally to as many identical items as the work requires.

1.6 GUARANTEE

- A. General Warranty: The special warranty specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents. Submit a written warranty, executed by the manufacturer and signed by the Contractor, agreeing to replace components that fail in materials or workmanship, within the specified warranty period, for the following:
  - 1. Base Bid: Manufacturer’s full parts and labor warranty for all new mechanical and associated electrical components including, but not limited to equipment, devices, controls, appurtenances, etc., for not less than one (1) year, from date of Substantial Completion.
- B. Unless noted otherwise, standard warranty of manufacturer shall apply for replacement of parts after expiration of above period. Provide manufacturer’s replacement parts to the Owner, or his

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service agency as directed. Furnish to the Owner printed manufacturer's warranties, upon completion of project.

- C. Contractor shall arrange for a Manufacturer factory-trained and certified representative, without charge, to supervise startup of all new mechanical equipment, (i.e., outdoor heat pump unit and associated indoor ductless heating/cooling units, controls, etc.), and instruct the Owner's personnel on operation and maintenance of each new mechanical unit. Provide a minimum of one day for instruction of Owner's personnel. Manufacturer shall provide a minimum of three (3) copies of their operation and maintenance instructions in booklet form. Manufacturer shall certify in writing, installation and performance of all mechanical units are in full compliance with design intent and manufacturer's listed and submitted data.

1.7 VISIT TO SITE

- A. Prior to submission of bid, Contractor shall visit Site and become familiar with existing conditions. Bids as submitted, will be interpreted to include all costs and charges made necessary by existing conditions such as installation space requirements and interferences.
- B. Contractor shall verify, in field, the location and elevation of all underground services affected by this work before proceeding with construction. Notify Architect, Engineer and Owner immediately in the event the location of existing site utilities vary appreciable from those shown on drawings.

1.8 REGULATIONS

- A. Entire installation including materials, equipment and workmanship shall conform to all applicable laws, codes and regulations of local municipal, county, state and federal authorities, also National Fire Protection Association, Factory Mutual, Underwriters Laboratories, National Electrical Code and other regulatory bodies having jurisdiction over this class of work. Where applicable by local building codes, materials and equipment shall bear stamps or seals of Nationally Recognized Testing Laboratories or construction standards from ARI, ASME, AGA, FM, IEEE, NFPA, NEMA, NSF, UL, ETL and other similar industry regulating groups.
- B. Minimum requirements of Codes and Regulations do not relieve the Contractor from providing higher grade of materials and workmanship as may herein be specified or shown on drawings.
- C. All work shall be inspected, tested and approved by the proper authorities. Contractor shall obtain all permits, certificates and inspections and determine all required service connection charges. Owner shall pay all connection charges, permits, certificates and inspection fees. Contractor shall prepare and obtain approval of specific drawings that may be required by the proper authorities. Deliver certificates of approval to Architect, Engineer and Owner before request for final payment.

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- D. Pressure vessels shall conform to the latest applicable State and Local Codes and Regulations.
- E. All safety relief devices protecting pressure vessels shall conform to the latest applicable state, local and ASA-B9 codes.
- F. Energy Conservation Codes: It is the intent of this specification that all equipment and materials furnished meet the State Uniform Construction Code, International Mechanical Code, International Energy Conservation Code and ASHRAE 90.1 - 2013 as adopted in the State of New Jersey.
- G. Construction Safety: All work shall be done in accordance with the following Federal regulations:
  - 1. Williams-Steiger Occupational Safety and health Act of 1970, Public Law 91-596.
  - 2. Part 1910 – Occupation Safety and Health Standards, Chapter XVII of Title 29, Codes of Federal Regulations.
  - 3. Part 1518 – Safety and Health Regulations for Construction, Chapter XIII of Title 29, Codes of Federal Regulations.
- H. Fire Ratings:
  - 1. All material used anywhere in the work must have NFPA ratings as follows:
    - a. Flame Spread – Not over 25.
    - b. Smoke Developed – Not over 50.
    - c. Fuel Contributed – Not over 25.
  - 2. All materials shall be “Self Extinguishing”.
- I. The requirements of authorities shall be the minimum acceptable requirements for the work and nothing described in these specifications or indicated on the drawings shall be construed to permit work not conforming to the most stringent of the applicable codes and regulations.
- J. When drawings or specifications call for materials or construction of better quality or larger size than required by codes, laws, rules and regulations, the drawings and specifications shall take precedence.
- K. Should any changes to the work indicated on the drawings or described in the specifications be necessary so as to comply with the above requirements, immediately notify the Architect, Engineer and Owner.

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1.9 PROTECTION

- A. Effectively protect all material and equipment from dust, dirt, weather and damage until final acceptance as installed. Close all pipe, duct and equipment openings, during construction, with suitable temporary closures. Provide suitable protective covering for equipment, fixtures and material before, during and following installation. Provide new materials and equipment to replace similar damaged items without additional cost to the Owner.

1.10 COORDINATION

- A. Prior to bid, Contractor shall examine Architectural, Mechanical and Electrical Drawings for proper coordination of all trades and include in bid price all necessary work required for proper field coordination of all trades.
- B. Prior to any construction work, Contractor shall reexamine all Architectural, Mechanical and Electrical Drawings. The work of all other Sub-Contractors shall be carefully considered and the work of this Contractor and each his Sub-Contractors coordinated so that all parts of their work will be compatible with, and not interfere with the other trades.
- C. Review with the General Contractor and all other trades, locations of all equipment and materials so that all work may be installed in the most direct manner, and interferences are avoided between pipes, ducts, conduits, equipment, fixtures, devices, associated appurtenances and architectural and structural features.
- D. Contractor shall jointly prepare with all of the project's Subcontractors, Coordination Drawings which shall include all Mechanical and Electrical installation layouts overlaid onto the architectural plans which are to then be submitted to all other Trades for mark-up, comment and coordination. All Subcontractors shall submit, to the all other trades, all setting plans, templates, approved shop drawings, approved equipment layouts, approved electrical wiring and control diagrams, etc., to insure proper space and functional relationship to all other equipment and services. Upon completion of coordination drawings, Contractor shall submit these coordination drawings to the Architect and Engineer for review and approval.**
- E. Contractor shall call for all existing utility markouts located within the project's site, then jointly prepare with all of the project's Subcontractors site coordination drawings which include all new and existing underground site utilities including, but not limited to underground utility domestic water mains, utility sanitary sewer lines, utility electric, telephone and cable lines, electric site lighting wiring, manholes, surveillance camera electric cabling, etc. Upon completion of coordination drawings, Contractor shall submit these coordination drawings to the Architect and Engineer for review and approval.**
- F. Contractor shall prepare dimensioned mechanical and electrical piping, conduit, equipment and devices "Layout Drawings" in 1/4" scale showing all inserts, sleeves in floors, walls, roofs,**

**beams and columns as part of Contractor's coordination drawings. Drawings shall provide for proper alignment. Upon completion of coordination drawings, Contractor shall submit these coordination drawings to the Architect and Engineer for review and approval.**

- G. Coordinate with all trades, clear passages and code required clearances necessary to deliver, relocate, remove, install and erect equipment and materials.
  - H. Where there will not be sufficient clearance for passage following erection of confining enclosures, deliver, set and protect equipment and materials before erection of confining enclosures. All equipment and materials so confined shall be inspected and tested prior to delivery. Should equipment or materials fail to meet the requirements of the Specifications, replace equipment or materials and pay all costs, including costs for modifications of completed areas that are required to provide clear passage.
  - I. When interferences occur, prepare installation drawings in 1/4" scale of equipment and material in areas of interferences. Submit drawings to all other trades for their examination, comment, coordination and signed approval. Submit fully coordinated installation drawings to the Architect and Engineer for review before beginning any construction work. Meet as necessary with all other trades affected, coordinate work and correct interferences. Where interferences occur during construction because failure to coordinate work, rearrange work at no additional cost to the Owner.
  - J. **Upon completion and final coordination of Contractor's Coordination Drawings, Contractor shall submit final Coordination Drawings with all associated Layout Drawings to the Architect and Engineer for final approval. If the Contractor cannot resolve coordination conflicts with his/her Subcontractors, Contractor shall request a coordination meeting with Architect and Engineer.**
  - K. All modifications to the building, removal and relocation of equipment and materials that are required for clear passage and code required clearance of equipment shall be provided by the Contractor at no additional cost to the Owner. Contractor shall restore all disturbed building structures and surfaces, and reinstall and reconnect all equipment modified or disturbed by the work of this project.
  - L. Coordinate the procurement of specified materials and equipment being supplied by Sub-Contractors, manufacturers and vendors. Items when provided as part of the equipment, shall meet the requirements of these specifications.
- 1.11 DRAWINGS
- A. Accompanying architectural, mechanical and electrical drawings are a part of the Contract Documents and are intended to show approximate and relative locations of materials and

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equipment. Drawings shall not be scaled to determine exact positions and clearances. Ascertain all dimensions in the field.

- B. Because of diagrammatic layout and small scale of drawings, not all rises, drops, offsets and related specialties are indicated. Provide all such piping, fittings, valves and specialties required in such cases to insure a complete and properly operating installation in accordance with Codes and without extra cost to Owner.
- C. Examine all drawings and specifications pertaining to the work of all Other Trades. Contractor shall be responsible for installation and fitting into the building, without interference to the work of Other Trades, all materials and equipment provided under this Contract.
- D. When directed by the Architect, Engineer or Owner, the Contractor shall, without extra charge, make reasonable modifications in the layout as needed, to prevent conflict with the work of other trades or for proper execution of the work.
- E. Where variances occur between the drawings and the specifications or within either document itself, the item or arrangement of better quality and greater quantity shall be included in the Contract price. The Architect and Engineer will decide on the item and the manner in which work shall be installed.

**1.12 SUBMITTALS**

- A. The Contractor shall carefully prepare and review his schedule of submissions, determine the necessary lead time for preparing, submitting, checking, ordering and delivery of all materials and equipment for timely arrival. The Contractor shall be responsible for conformance with the overall construction schedule.
- B. Submittals will be checked for general compliance with specifications only. The Contractor shall be responsible for deviations from the drawings or specifications, and for errors or omissions of any sort in submittals.
- C. Submit a complete list of material and equipment proposed for the job, including manufacturer's names.
- D. Reference all listings to the specifications' article to which each is applicable.
- E. Submit on all materials and equipment, even if same is as specified or shown on the drawings.
- F. Include complete catalog information such as construction, ratings, insulation systems, etc., as applicable.
- G. Submit shop drawings in accordance with Division 1 of the project's Technical Specifications.



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- H. Include with each submission and for each item the following information:
1. Project name.
  2. Name of Contractor and/of Subcontractor making submission.
  3. Name of equipment being submitted. Identify by equipment number shown on drawing.
  4. The manufacturer's name for each piece of equipment.
  5. Complete performance data.
  6. Dimensions and operating weight of equipment.
  7. Materials and features of construction.
  8. All changes resulting from requests for information (RFI's) or owner approved change orders (CO's) or requests against allowance (RAA's) shall be referenced on submittals.
- I. As a minimum, submit shop drawings for the following:
1. Outdoor heat pump and associated indoor ductless units.
  2. Detailed refrigerant piping diagrams prepared by manufacturer including sizing, lengths and all related accessories. Including mode change units.
  3. Piping, fittings and refrigerant devices and appurtenances.
  4. Piping insulation and covers.
  5. Automatic temperature controls.
  6. Valves and Specialties.
  7. Automatic Temperature Controls.
  8. Supports.
  9. Piping, Fittings, Joining Materials and Appurtenances.
  10. Piping Layouts (3/8" scale).
  11. Access Panels.
- J. Refer to Division 1 Specification Sections for additional information.

1.13 SHOP DRAWINGS

- A. Before starting installation, submit for review all information, including manufacturer's drawings and literature in required numbers of copies showing complete physical and performance data for all materials and equipment.
- B. Prepare and submit for review "Layout Drawings" (minimum of 1/4" scale) of piping and equipment prior to installation.
- C. Catalogs, pamphlets, or other documents submitted to describe items on which approval is being requested, shall be specific and identification in catalog, pamphlet, etc. of item submitted shall be clearly made in red ink. Each component, and all optional equipment required for the project, shall be indicated. Data of a general nature will not be accepted. Drawings shall be corrected in red ink.

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- D. Prior to submitting for approval, contractor shall “mark-up” each copy of each shop drawing or data so as to “cross-reference” each item with its respective drawing item number and specification section number. Shop drawings or data submitted that are not adequately “marked-up” will be returned without review.
- E. Shop drawings of systems containing closely related items and components must be submitted as a single submission showing the interrelation of the components required for that system, for example: the grilles and registers with sheet metal drawings.
- F. Architect’s and Engineer’s review of shop drawings, and their corrections and comments made thereon, does not relieve the Contractor from compliance with drawings and specifications. Contractor shall be responsible for confirming and correlating all quantities and dimensions, selecting fabrication procedures and techniques of construction.
- G. Refer to Division 1 Specification Sections for additional information.

**1.14 AS-BUILT DRAWINGS**

- A. Prior to final payment, the Contractor shall submit “As-Built” drawings as herein described.
- B. Maintain during construction a “clean” record set of installation prints. Record in colored ink on these prints all deviations from the contract drawings in sizing, location and details of underground utilities, piping, ductwork, equipment, etc. All changes resulting from requests for information (RFI's) or owner approved change orders (RAA's) shall be referenced on "as-built" drawings. Submit as-built drawings to Architect and Engineer for review as part of project's close-out. Make correction following review and submit a complete set of "as-built" drawings, two (2) sets hard copy reproducible (1/8" =1'-0" scale minimum), and two (2) sets electronic files produced in PDF format on CD's to the Architect, Engineer and Owner upon project completion.
- C. Refer to Division 1 Specification Sections for additional information.

**1.15 SAMPLES**

- A. The Architect, Engineer or Owner may direct the Contractor to submit samples of items called for in the specifications such as control valves, louvers, grilles, registers, diffusers, etc. Samples of materials which the manufacturer will actually ship shall be properly labeled or identified. Samples shall be left at the construction site for review by the Architect, Engineer and Owner.
- B. Each sample must be labeled or securely tagged with the following minimum information:
  - 1. Identification of sample (i.e.: material, color, number, etc.).
  - 2. Reference to contract documents.
  - 3. Name of manufacturer.

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4. Name of project.
  5. Name of Contractor
  6. Date of submission
- C. A transmittal letter shall be sent to the Architect, Engineer and Owner indicating when, where and how the samples were submitted.
- D. Refer to Division 1 Specification Sections for additional information.

1.16 WORK RESPONSIBILITIES

- A. Examine the site and all mechanical, electrical and architectural drawings and accept such conditions and make allowance for them in preparing the bid. No extra charges will be considered for costs resulting from failure to comply with the above.
- B. The drawings indicate diagrammatically the desired locations or arrangement of piping runs, equipment, devices, appurtenances, etc., and are to be followed as closely as possible. Proper judgment must be exercised in executing the work so as to secure the best possible installation in the available space and to overcome local difficulties due to space limitations or interference with structural conditions. The Contractor is responsible for the correct placing of his work and the proper location and connection of his work in relation to the work of other trades.
- C. Locations shown on architectural and ceiling plans and/or wall elevations shall take precedence over mechanical and electrical plan locations, but where a major conflict is evident, notify the Architect, Engineer and Owner for instructions prior to commencing work on the same.
- D. In the event changes in the indicated locations or arrangements are necessary due to developed conditions in the building construction or rearrangement of furnishings or equipment, such changes shall be made without extra costs, providing the change is ordered before the piping and ductwork runs, etc. and the work directly connected to same is installed and no extra materials are required.
- E. All scaled and figured dimensions are approximate of typical equipment of the type and capacity indicated. Before proceeding with any work, carefully check and verify all dimensions, sizes, weights, etc. with the drawings to see that the equipment will fit into the spaces provided without violation of applicable codes.
- F. Where equipment is furnished by others, verify voltage characteristics, piping and ductwork connections, dimensions and the correct locations of this equipment before proceeding with the roughing-in of connections.

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- G. Should changes be necessary to the work indicated on the drawings or described in the specifications so as to comply with the above requirements, immediately notify the Architect, Engineer and Owner.
- H. Perform all work competent and skilled personnel. All work shall be of the highest quality consistent with the best practices of the trade.
- I. Replace or repair, without additional compensation, any work which, in the opinion of the Architect, Engineer or Owner, does not comply with these requirements.
- J. The Contractor shall be responsible for the safety and good condition of all materials and equipment until final acceptance by the Owner; for providing adequate and proper storage facilities during the progress of the work; for replacing all damaged and defective work before applying for final acceptance; for erecting and maintaining suitable barriers, protective devices, light and warning signs for the protection of the public and employees; and for all loss, damage or injury to persons or property resulting from any neglect of these responsibilities.
- K. The Contractor shall be responsible for all faults and deficiencies in his work during the guarantee period and shall repair, at no cost to the Owner, all such deficiencies that occur immediately upon notification by the Owner. All damage to other work there from, which may occur during the construction and guarantee period, shall be repaired at once, at no cost to the Owner.

1.17 MATERIALS, STANDARDS OF QUALITY AND SUBSTITUTIONS

- A. All materials and equipment shall be new and of standards specified herein.
- B. Equipment shall be standard catalog products of an established manufacturer, regularly produced and recommended for service required, in accordance with engineering data or other comprehensive literature made available to the public, and in effect at the time of the bids. Where two or more units of same class equipment are required, these units shall be products of a single manufacturer.
- C. All equipment shall be installed in strict accordance with manufacturer's instructions for type and capacity of each piece of equipment used. Each Contractor shall obtain these instructions which shall be considered part of these specifications. Type, capacity and application of equipment shall be suitable and must operate satisfactorily for the purpose intended and be so guaranteed by the manufacturer through the Contractor.
- D. Coordinate the procurement of specified materials, fixtures, devices and equipment being supplied by sub-contractors, manufacturers and vendors. Such items as thermometers, gages, motor starting equipment, vibration isolation devices and valves, when provided as part of the equipment, shall meet these specifications. Direct subcontractors, manufacturers and vendors to provide such items.

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- E. Equipment, fixtures, devices and systems of same type, such as starters, valves, pipe, pipe fittings, fans, pumps, controls, etc., shall be the product of one manufacturer unless they are part of a factory assembled equipment package.
  - F. Mechanical equipment shall be provided from a single source manufacturer. Air handling units and fan coil units shall be by the same manufacturer.
  - G. The manufacturer or figure number named in the specifications and/or listed in equipment schedules on the drawings, are the items that have been used as the basis for design. Systems have been designed on the basis of the equipment specified. When manufacturer's names and figure numbers are used, they shall be considered as the standard of grade and quality required. Materials and equipment of other manufacturers' may be used, if accepted, but they must be equal in all respects, capacity, quality, design and type. **Should equivalent items of other manufacturers be submitted by the Contractor, it shall be the Contractor's responsibility to provide and bear at no extra cost to Owner, all changes to the designed general construction, mechanical and electrical systems, that are required by the use of the substituted items, including cost of Architect's and Engineer's redesign efforts.**
  - H. When one manufacturer or figure number is used or words such as "or equal" and/or "equal to" are used with a manufacturer's name or figure number, the contractor may submit an equivalent substitute product for approval and shall show the prices of both the specified item and the substitute item. **Should equivalent items of other manufacturers be submitted by the Contractor, it shall be the Contractor's responsibility to provide and bear at no extra cost to Owner, all changes to the designed general construction, mechanical and electrical systems, that are required by the use of the substituted items, including cost of Architect's and Engineer's redesign efforts.** Architect's and Engineer's approval shall be final.
  - I. When two or more manufacturers or figure numbers are used for a given material or equipment, select the manufacturer from the manufacturers named.
  - J. Refer to Division 1 Specification Sections for additional information.
- 1.18 **PERFORMANCE OF EQUIPMENT, FIXTURES, DEVICES AND SYSTEMS**
- A. Equipment, fixtures, devices and systems shall perform properly and in accordance with the intent of the Contract Documents.
  - B. Equipment, fixtures, devices and systems shall be installed and tested in accordance with manufacturer's instructions for type and capacity, also in accordance with requirements of these specifications. Manufacturer's instructions shall be considered a part of these specifications.
  - C. Shop drawing submittals shall include manufacturer's complete physical and performance data. Performance shall be demonstrated "in-the-field" by the manufacturer.

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- D. Refer to Division 1 Specification Sections for additional information.

1.19 SEQUENCE OF WORK

- A. The sequence of work shall follow the project's phasing plan.
- B. The sequence in which work will be performed shall be prepared as a schedule by the Contractor and reviewed and approved by the Architect, Engineer and Owner. Contractor shall submit a complete project construction schedule for approval fourteen (14) days after notification to proceed. Schedule shall show delivery of equipment to the site, erection of equipment and pertinent work related to installation and when the equipment will be placed in operation.
- C. Refer to Division 1 Specification Sections for additional information.

1.20 WORK FORCE AND SUPERINTENDENCE

- A. Contractor shall, upon initiation of construction, keep a suitable force of men on the site at all times in order to provide all sleeves, inserts and provide all other materials as required for the satisfactory installation of the entire system.
- B. Contractor shall give his personal superintendence to the work or have a competent superintendent, satisfactory to the Architect, Engineer and Owner, on the work at all times during construction with authority to act for him. He shall provide an adequate organization for proper coordination and expediting of this work.

1.21 RUBBISH

- A. During the course of construction, all Contractors shall be responsible to remove from the premises all rubbish resulting from the work of the project. Contractors shall coordinate the continual cleanup of the project site with the Prime Contractor.
- B. At all times, keep the premises free from accumulations of waste materials and rubbish caused by agents and employees of the Contractor.
- C. At the completion of the work, remove from the site all rubbish in or about the building, in addition to tools, scaffolding and other specialties that were utilized or a result of Contractor's work.
- D. In the event of dispute of refusal to comply with the requirements of the above paragraphs, the Owner shall have the option of removing such rubbish from the premises, and back-charge the Contractor for doing such work.

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- E. The Contractor shall, on a daily basis, remove from the site all rubbish, debris and discarded materials resulting from Contractor's work.

1.22 CLEANING OF PIPING AND EQUIPMENT

- A. Thoroughly clean all piping, devices, equipment, appurtenances, etc., of dirt, scale, plaster, concrete, paint and other foreign matter.
- B. Clean pumps, motors, fans, and all other equipment, and remove labels and protective coverings, clean all grease and cuttings from stainless steel plated and polished trim.
- C. Wipe all pipe surfaces to be painted, lined or covered.
- D. Clean all strainers and other accessories that may collect foreign matter. Flush or blow-out all equipment and piping systems prior to charging piping and equipment..
- E. Replace/clean all filters in ductless indoor units that have been operated, for any reason, during construction. This replacement is in addition to any specified "spare" filters.

1.23 TEMPORARY SERVICES FOR CONSTRUCTION

- A. Refer to General Conditions, Divisions 1 and 15 of the Technical Specification Sections and Conditions of the Contract.

1.24 CUTTING AND PATCHING

- A. Subcontractors shall furnish General Contractor information such as size, position and arrangement of materials and equipment, so that new openings in floors, walls, roofs, beams, ceilings can be properly provided and coordinated as construction progresses.
- B. Cutting and patching for new equipment and materials will be provided by Contractor.
- C. Cutting shall be coordinated with Other Trades, done neatly and to minimize damage to all construction. Provide lintels where required.
- D. Cutting and patching shall be done by Trades normally specializing in installation of materials being patched. Paint all patched surfaces.
- E. Review all cutting and patching with Architect, Engineer and Owner before beginning work.
- F. Cutting openings in concrete slabs and walls shall be done neatly using core boring machines.

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1.25 FOUNDATIONS AND SUPPORTS

- A. Unless indicated otherwise, provide all structural supports required for equipment and materials provided under this Division. Provide isolation mountings for noisy or vibrating equipment. Submit shop drawings of foundation and pads for approval.
- B. All floor and grade mounted equipment shall be erected on minimum 4" high concrete pads extending a minimum of 6" beyond the complete floor area of the equipment, unless noted otherwise. All mechanical and electrical equipment, devices and ductwork must be installed at minimum at or above the New Jersey adopted FEMA flood elevations for the project site. Include New Jersey boarding requirements for final flood elevations.
- C. Concrete work, foundations, pads, shall include anchor bolts, and shall have sufficient size and mass to suit supported equipment. Foundations and pads shall be properly dwelled in with the floor construction, and shall have sloped bevels on all horizontal and vertical edges. Concrete shall be lightweight mix having a comprehensive strength of 5,000 PSI minimum at twenty-eight days. Placing of reinforcing steel and concrete shall be done according to recommendations of the American Concrete Institute and Concrete Reinforcing Steel Institute, and all materials shall conform to American Society for Testing and Materials Specifications (ASTM) applicable to this work.
- D. Structural steel supports shall include all beams, plates, angles, bearing plates and structural shapes of every description required to complete the steel work. Manual of construction by American Institute of Steel construction (AISC) shall be followed in design and construction. All structural steel shall conform to ASTM Specification A-36. All structural steel members shall have a shop coat of rust inhibitive paint.

1.26 STEEL SUPPORTS

- A. Unless indicated otherwise, provide all structural steel supports required for equipment, ductwork, piping and materials provided. Provide isolation mountings for noisy of vibrating equipment. Submit shop drawings for approval.
- B. Structural steel supports shall include all beams, plates, angles, bearing plates and structural shapes of every description required to complete the steel work. Manual of construction by American Institute of Steel Construction shall be followed in design and construction. All structural steel shall conform to American Society for Testing Materials Specification A-36. All structural steel members shall have a shop coat of rust inhibitive paint.



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1.27 CONCRETE WORK

- A. Unless noted otherwise, provide all concrete work for foundations, pads, supports, required for equipment and materials provided under this Division. Provide isolation mountings for all equipment that is either noisy or has rotating or vibrating components. Submit shop drawings for approval.
- B. Concrete work, foundations, pads, shall include anchor bolts, and shall have sufficient size and mass to suit supported equipment. Foundations and pads shall be properly dowelled in with floor construction, and shall have sloped bevels on all horizontal and vertical edges. Concrete shall be a lightweight mix having a compressive strength of 5000 PSI minimum at twenty-eight days. Placing of reinforcing steel and concrete shall be done according to recommendations of the American Concrete Institute and Concrete Reinforcing Steel Institute, and all materials shall conform to American Society for Testing Materials Specifications, applicable to this work.
- C. Form work shall be of sufficient strength to maintain desired shape during pouring of concrete and tight enough to prevent leakage of the grout through joints.

1.28 SCAFFOLDING

- A. Provide temporary scaffolding, ladders and other equipment required for installation of equipment and materials including protection features as required by codes and trade associations' recommendations.

1.29 FLASHING AND ROOF REPAIRS

- A. All flashing methods and materials shall attain a complete watertight installation.
- B. Riser sleeves for piping and conduits in membrane waterproofed floors shall have flashing clamps attached to membrane. Where possible, sleeves shall be provided with top and bottom steel pipe sleeves. Large sleeves shall be shop fabricated. Sleeves shall extend 2 inches above finished door. At each field fabricated mop receptor, where applicable, provide a four pound lead pan, turned up 6 inches on all sides and soldered watertight. Attach drain flashing clamp.

1.30 ACCESS PANELS

- A. Furnish access panels required for access to valves, traps, controls, dampers and other specialties requiring maintenance and service in ceilings.
- B. Panels shall have 16 gauge steel frame and 14 gage flush steel door having concealed hinge and screwdriver operated cam locks, all with factory prime finish.

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- C. Access panels shall be of sizes required for easy access to specialties, but in no case shall they be less than 18" x 18".
- D. Coordinate panel locations and sizes with Other Trades. Prior to installation, submit and review panel locations and sizes with Architect, Engineer and Owner.
- E. Panels shall be furnished to suit the surface into which installed.

1.31 WELDING

- A. All welding shall be done by qualified and certified welders in accordance with ASME Boiler Code - Section 9 or American Welding Society Code for Welding in Building Construction (AWS D1.0).
- B. Contractor shall secure all hot work permits as required for this project.
- C. The Contractor shall submit certified test records of each welder.
- D. Welding may be done by either the metal-arc or gas welding processes.
- E. The filler metal for welding steel piping shall conform to AWSW 6010 for metal arc welding and to specification GR 60 for gas welding. Filler metal shall be suitable for the metal welded.
- F. Welding shall not be done when the atmospheric temperature is less than 0 degrees F. when surfaces are wet, or during periods of high wind.
- G. Welds shall show a bright metallic luster after cleaning and shall have uniform contour. Except as necessary to correct defects, the surfaces shall not be dressed, smoothed, or finished for improving their appearance, unless so specified. Welds generally shall be free from gas pockets, oxides, slag inclusions, and surface porosity, except to the extent produced in passing qualification tests. The inside of the pipe shall be relatively free from globules of weld metal.

1.32 PAINTING

- A. All materials and equipment shall be protected from rust, corrosion and similar damage by either factory applied or field applied protective coatings. Clean and touch-up such protected surfaces that become scratched, marred or otherwise damaged and make surfaces ready for final painting.
- B. Finish painting of materials and equipment provided under this Division shall be the responsibility of this Division's Contractor.

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- C. In unfinished-occupied areas, such as Mechanical and Electrical Rooms, on the roof and wherever exposed to the weather, all ferrous metal pipe, hangers and mechanical equipment shall be rust-protected with the manufacturer's prime coat and an extreme seacoast final coating. All exposed ferrous metal and canvas jackets shall receive two coats of paint in addition to prime coat, using heat resistant paint for high temperature pipe. Aluminum, galvanized and cuprous metals and plastic coated insulation shall not be painted.
- D. In unfinished unoccupied areas such as duct shafts, chases all ferrous metal, pipe, hangers and equipment except cast-iron pipe shall be rust protected with the manufacturer's coating or a prime coat. Aluminum, galvanized and cuprous metals and insulation shall not be painted.
- E. Do not paint over nameplates of equipment.

1.33 IDENTIFICATION

- A. Identify all concealed and exposed equipment, devices, ducts, piping and associated appurtenances with legibly stenciled lettering, applied, after finish painting where applicable, in color to contrast with basic color.
- B. Identify piping adjacent to valves and then at maximum 20-foot intervals. Indicate flow direction with arrows. Lettering shall be minimum 1/3 pipe diameter, but not less than 1/2-inch high.
- C. All major equipment, including air handling units, outdoor heat pump units, indoor ductless units, etc., shall be identified by the equipment numbers shown on drawings, or by the Owner's numbering system, if so directed. Include the type of service, or the name of area served. Lettering shall be minimum 1-inch high. Do not stencil surfaces exposed in public areas.
- D. Identify each piece of motor control equipment, remote pushbuttons, and switches and other electrical equipment with laminated, engraved, white core, black finished plastic nameplates having minimum 1/4-inch size lettering. Laminated nameplates shall consist of two black plastic sheets with one white plastic sheet bonded to and in-between the black. Engrave letters in black sheet, down to depth of white sheet.
- E. Identify all remote controllers, such as on-off, high-low, occupied-unoccupied switches and other devices regularly operated by Owner's personnel with nameplates as specified above.
- F. Provide for each valve, except those immediately adjacent to apparatus where use of valve is obvious, a 2-inch diameter non-ferrous metal or color coded plastic tag with figures and pipe identification stamped or engraved into tag. Tags shall be fastened with non-ferrous "S" hooks. Number each valve and provide two valve charts, framed behind glass, listing each valve, its location and data on what it controls.
- G. Submit list of titles and data for Architect's and Engineer's review before beginning work.

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1.34 OPERATING AND MAINTENANCE MANUALS

- A. At the completion of the project, deliver to the Architect and Engineer for transmittal to the Owner, three (3) complete sets of instruction manuals, for each piece of mechanical and incidental electrical equipment, fixture, device, controls, valves and all specialty items.
- B. Each instruction manual shall consist of data supplied by the manufacturer giving complete information on the following:
  - 1. Installation procedure.
  - 2. Operating instructions.
  - 3. Maintenance instructions.
  - 4. Detailed parts lists.
  - 5. Recommended spare parts.
  - 6. Address and telephone numbers of nearest supply house.
  - 7. Address and telephone number of manufacturer's representative.
- C. Each set of instruction manuals shall be bound in an 8 ½" x 11" hard cover, 3-ring binder. The binders shall be assembled using tabs to separate each equipment item. An index sheet shall be inserted in the front of the binder, listing every item included with the manual.

1.35 OPERATING AND MAINTENANCE INSTRUCTION

- A. After all tests, startup, balancing and adjustments have been successfully made, instruct the representatives of the Owner in all details of operation of all mechanical equipment, devices and systems. Provide competent instruction for a minimum of one (1) day, which shall not include time required for testing, adjusting, startup and balancing.
- B. Instruction in all details of operation of all equipment shall be recorded by means of videotaping.

1.36 ELECTRICAL EQUIPMENT

- A. Contractor shall furnish all his equipment complete with motor, controllers, capacitor, starting equipment and control transformers, except where specifically listed differently on the Contract Drawings.
- B. Unless otherwise noted, electric motors shall be premium grade, open, drip proof, induction type rated for continuous duty at 15% overload with 40 degrees C. rise. Single phase motors shall be capacitor start, induction run.
- C. Manufacturer's certified technician shall check the equipment for its conformance to the specifications, for proper installation and shall run the system in all modes of operation to

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ascertain that the unit will function properly. All necessary adjustment shall be made to insure trouble-free service.

- D. After completion of the startup procedure, Manufacturer shall certify, in writing, that the equipment is installed in accordance with his requirements and is operating in accordance with the intent of the specifications. Final payment will not be made until this requirement is completed.

**PART 2 - PRODUCTS**

(Not Used)

**PART 3 - EXECUTION**

(Not Used)

END OF SECTION 15010

SECTION 15051 - COMMON WORK RESULTS FOR HVAC

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
  - 1. Piping materials and installation instructions common to most piping systems.
  - 2. Dielectric fittings.
  - 3. Mechanical sleeve seals.
  - 4. Sleeves.
  - 5. Escutcheons.
  - 6. Grout.
  - 7. Equipment installation requirements common to equipment sections.
  - 8. Painting and finishing.
  - 9. Concrete bases.
  - 10. Supports and anchorages.

1.3 DEFINITIONS

- A. Finished Spaces: Spaces other than mechanical and electrical equipment rooms, furred spaces, pipe and duct chases, unheated spaces immediately below roof, spaces above ceilings, unexcavated spaces, crawlspaces, and tunnels.
- B. Exposed, Interior Installations: Exposed to view indoors. Examples include finished occupied spaces and mechanical equipment rooms.
- C. Exposed, Exterior Installations: Exposed to view outdoors or subject to outdoor ambient temperatures and weather conditions. Examples include rooftop locations.
- D. Concealed, Interior Installations: Concealed from view and protected from physical contact by building occupants. Examples include above ceilings and chases.
- E. Concealed, Exterior Installations: Concealed from view and protected from weather conditions and physical contact by building occupants but subject to outdoor ambient temperatures. Examples include installations within unheated shelters.

1.4 SUBMITTALS

- A. Product Data: For the following:
  - 1. Dielectric fittings.

2. Mechanical sleeve seals.
3. Escutcheons.
4. Statement of Refrigerant Recovery: Signed by refrigerant recovery technical responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

#### 1.5 QUALITY ASSURANCE

- A. Steel Support Welding: Qualify processes and operators according to AWS D1.1, "Structural Welding Code--Steel."
- B. Steel Pipe Welding: Qualify processes and operators according to ASME Boiler and Pressure Vessel Code: Section IX, "Welding and Brazing Qualifications."
  1. Comply with provisions in ASME B31 Series, "Code for Pressure Piping."
  2. Certify that each welder has passed AWS qualification tests for welding processes involved and that certification is current.
- C. Electrical Characteristics for HVAC Equipment: Equipment of higher electrical characteristics may be furnished provided such proposed equipment is approved in writing and connecting electrical services, circuit breakers, and conduit sizes are appropriately modified. If minimum energy ratings or efficiencies are specified, equipment shall comply with requirements.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver pipes and tubes with factory-applied end caps. Maintain end caps through shipping, storage, and handling to prevent pipe end damage and to prevent entrance of dirt, debris, and moisture.
- B. Store plastic pipes protected from direct sunlight. Support to prevent sagging and bending.

#### 1.7 COORDINATION

- A. Arrange for pipe spaces, chases, slots, and openings in building structure during progress of construction, to allow for HVAC installations.
- B. Coordinate installation of required supporting devices and set sleeves in poured-in-place concrete and other structural components as they are constructed.
- C. Coordinate requirements for access panels and doors for HVAC items requiring access that are concealed behind finished surfaces.

1.8 PROJECT CONDITIONS

- A. Hazardous Materials: Hazardous materials are present in buildings and structures to be demolished in the form of asbestos insulation. A report on the presence of hazardous materials is on file for review and use. Examine report to become aware of locations where hazardous materials are present.
  - 1. Hazardous material remediation is being handled by the Owner as part of a concurrent project.

PART 2 - PRODUCTS

2.1 PIPE, TUBE, AND FITTINGS

- A. Refer to Project Drawing Notes for pipe, tube, and fitting materials and joining methods.
- B. Pipe Threads: ASME B1.20.1 for factory-threaded pipe and pipe fittings.

2.2 JOINING MATERIALS

- A. Refer to Project Drawing Notes for special joining materials not listed below.
- B. Pipe-Flange Gasket Materials: Suitable for chemical and thermal conditions of piping system contents.
  - 1. ASME B16.21, nonmetallic, flat, asbestos-free, 1/8-inch (3.2-mm) maximum thickness unless thickness or specific material is indicated.
    - a. Full-Face Type: For flat-face, Class 125, cast-iron and cast-bronze flanges.
    - b. Narrow-Face Type: For raised-face, Class 250, cast-iron and steel flanges.
  - 2. AWWA C110, rubber, flat face, 1/8 inch (3.2 mm) thick, unless otherwise indicated; and full-face or ring type, unless otherwise indicated.
- C. Flange Bolts and Nuts: ASME B18.2.1, carbon steel, unless otherwise indicated.
- D. Solder Filler Metals: ASTM B 32, lead-free alloys. Include water-flushable flux according to ASTM B 813.
- E. Brazing Filler Metals: AWS A5.8, BCuP Series, copper-phosphorus alloys for general-duty brazing, unless otherwise indicated; and AWS A5.8, BAg1, silver alloy for refrigerant piping, unless otherwise indicated.
- F. Welding Filler Metals: Comply with AWS D10.12 for welding materials appropriate for wall thickness and chemical analysis of steel pipe being welded.

2.3 DIELECTRIC FITTINGS



- A. Description: Combination fitting of copper alloy and ferrous materials with threaded, solder-joint, plain, or weld-neck end connections that match piping system materials.
- B. Insulating Material: Suitable for system fluid, pressure, and temperature.
- C. Dielectric Unions: Factory-fabricated, union assembly, for **250-psig (1725-kPa)** minimum working pressure at **180 deg F (82 deg C)**.
- D. Dielectric Flanges: Factory-fabricated, companion-flange assembly, for **150- or 300-psig (1035- or 2070-kPa)** minimum working pressure as required to suit system pressures.
- E. Dielectric-Flange Kits: Companion-flange assembly for field assembly. Include flanges, full-face- or ring-type neoprene or phenolic gasket, phenolic or polyethylene bolt sleeves, phenolic washers, and steel backing washers.
  - 1. Separate companion flanges and steel bolts and nuts shall have **150- or 300-psig (1035- or 2070-kPa)** minimum working pressure where required to suit system pressures.
- F. Dielectric Couplings: Galvanized-steel coupling with inert and noncorrosive, thermoplastic lining; threaded ends; and **300-psig (2070-kPa)** minimum working pressure at **225 deg F (107 deg C)**.

#### 2.4 MECHANICAL SLEEVE SEALS

- A. Description: Modular sealing element unit, designed for field assembly, to fill annular space between pipe and sleeve.

#### 2.5 SLEEVES

- A. Steel Pipe: ASTM A 53, Type E, Grade B, Schedule 40, galvanized, plain ends.
- B. Cast Iron: Cast or fabricated "wall pipe" equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop, unless otherwise indicated.

#### 2.6 ESCUTCHEONS

- A. Description: Manufactured wall and ceiling escutcheons and floor plates, with an ID to closely fit around pipe, tube, and insulation of insulated piping and an OD that completely covers opening.
- B. One-Piece, Deep-Pattern Type: Deep-drawn, box-shaped brass with polished chrome-plated finish.
- C. One-Piece, Cast-Brass Type: With set screw.
  - 1. Finish: Polished chrome-plated.
- D. One-Piece, Stamped-Steel Type: With set screw or spring clips and chrome-plated finish.
- E. Split-Plate, Stamped-Steel Type: With concealed hinge, set screw or spring clips, and chrome-plated finish.

## 2.7 GROUT

- A. Description: ASTM C 1107, Grade B, nonshrink and nonmetallic, dry hydraulic-cement grout.
  - 1. Characteristics: Post-hardening, volume-adjusting, nonstaining, noncorrosive, nongaseous, and recommended for interior and exterior applications.
  - 2. Design Mix: **5000-psi (34.5-MPa)**, 28-day compressive strength.
  - 3. Packaging: Premixed and factory packaged.

## PART 3 - EXECUTION

### 3.1 PIPING SYSTEMS - COMMON REQUIREMENTS

- A. Install piping according to the following requirements and Project Drawing Notes specifying piping systems.
- B. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems. Indicated locations and arrangements were used to size pipe and calculate friction loss, expansion, pump sizing, and other design considerations. Install piping as indicated unless deviations to layout are approved on Coordination Drawings.
- C. Install piping in concealed locations, unless otherwise indicated and except in equipment rooms and service areas.
- D. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise.
- E. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal.
- F. Install piping to permit valve servicing.
- G. Install piping at indicated slopes.
- H. Install piping free of sags and bends.
- I. Install fittings for changes in direction and branch connections.
- J. Install piping to allow application of insulation.
- K. Select system components with pressure rating equal to or greater than system operating pressure.
- L. Install escutcheons for penetrations of walls, ceilings, and floors according to the following:
  - 1. New Piping:
    - a. Piping with Fitting or Sleeve Protruding from Wall: One-piece, deep-pattern type.
    - b. Chrome-Plated Piping: One-piece, cast-brass type with polished chrome-plated finish.
    - c. Insulated Piping: One-piece, stamped-steel type with spring clips.
    - d. Bare Piping at Wall and Floor Penetrations in Finished Spaces: One-piece, cast-brass type with polished chrome-plated finish.

- e. Bare Piping at Wall and Floor Penetrations in Finished Spaces: One-piece, stamped-steel type.
  - f. Bare Piping at Ceiling Penetrations in Finished Spaces: One-piece or split-casting, cast-brass type with polished chrome-plated finish.
- M. Install sleeves for pipes passing through concrete and masonry walls and concrete floor and roof slabs.
- N. Aboveground, Exterior-Wall Pipe Penetrations: Seal penetrations using sleeves and mechanical sleeve seals. Select sleeve size to allow for **1-inch** annular clear space between pipe and sleeve for installing mechanical sleeve seals.
- 1. Install steel pipe for sleeves smaller than **6 inches** in diameter.
  - 2. Install cast-iron "wall pipes" for sleeves **6 inches** and larger in diameter.
  - 3. Mechanical Sleeve Seal Installation: Select type and number of sealing elements required for pipe material and size. Position pipe in center of sleeve. Assemble mechanical sleeve seals and install in annular space between pipe and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.
- O. Underground, Exterior-Wall Pipe Penetrations: Install cast-iron "wall pipes" for sleeves. Seal pipe penetrations using mechanical sleeve seals. Select sleeve size to allow for **1-inch** annular clear space between pipe and sleeve for installing mechanical sleeve seals.
- 1. Mechanical Sleeve Seal Installation: Select type and number of sealing elements required for pipe material and size. Position pipe in center of sleeve. Assemble mechanical sleeve seals and install in annular space between pipe and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.
- P. Verify final equipment locations for roughing-in.
- Q. Refer to equipment specifications in other Sections of these Specifications for roughing-in requirements.
- 3.2 PIPING JOINT CONSTRUCTION
- A. Join pipe and fittings according to the following requirements and Project Drawing Notes specifying piping systems.
  - B. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.
  - C. Remove scale, slag, dirt, and debris from inside and outside of pipe and fittings before assembly.
  - D. Soldered Joints: Apply ASTM B 813, water-flushable flux, unless otherwise indicated, to tube end. Construct joints according to ASTM B 828 or CDA's "Copper Tube Handbook," using lead-free solder alloy complying with ASTM B 32.
  - E. Brazed Joints: Construct joints according to AWS's "Braze Handbook," "Pipe and Tube" Chapter, using copper-phosphorus brazing filler metal complying with AWS A5.8.

- F. Threaded Joints: Thread pipe with tapered pipe threads according to ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to remove burrs and restore full ID. Join pipe fittings and valves as follows:
  - 1. Apply appropriate tape or thread compound to external pipe threads unless dry seal threading is specified.
  - 2. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged. Do not use pipe sections that have cracked or open welds.
- G. Welded Joints: Construct joints according to AWS D10.12, using qualified processes and welding operators according to Part 1 "Quality Assurance" Article.
- H. Flanged Joints: Select appropriate gasket material, size, type, and thickness for service application. Install gasket concentrically positioned. Use suitable lubricants on bolt threads.

### 3.3 PIPING CONNECTIONS

- A. Make connections according to the following, unless otherwise indicated:
  - 1. Install unions, in piping **NPS 2** and smaller, adjacent to each valve and at final connection to each piece of equipment.
  - 2. Install flanges, in piping **NPS 2-1/2** and larger, adjacent to flanged valves and at final connection to each piece of equipment.
  - 3. Wet Piping Systems: Install dielectric coupling and nipple fittings to connect piping materials of dissimilar metals.

### 3.4 EQUIPMENT INSTALLATION - COMMON REQUIREMENTS

- A. Install equipment to allow maximum possible headroom unless specific mounting heights are not indicated.
- B. Install equipment level and plumb, parallel and perpendicular to other building systems and components in exposed interior spaces, unless otherwise indicated.
- C. Install HVAC equipment to facilitate service, maintenance, and repair or replacement of components. Connect equipment for ease of disconnecting, with minimum interference to other installations. Extend grease fittings to accessible locations.
- D. Install equipment to allow right of way for piping installed at required slope.

### 3.5 CONCRETE BASES

- A. Concrete Bases: Anchor equipment to concrete base according to equipment manufacturer's written instructions and according to seismic codes at Project.
  - 1. Construct concrete bases of dimensions indicated, but not less than **4 inches** larger in both directions than supported unit.
  - 2. Install dowel rods to connect concrete base to concrete floor. Unless otherwise indicated, install dowel rods on **18-inch** centers around the full perimeter of the base.

3. Install epoxy-coated anchor bolts for supported equipment that extend through concrete base, and anchor into structural concrete floor.
4. Place and secure anchorage devices. Use supported equipment manufacturer's setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
5. Install anchor bolts to elevations required for proper attachment to supported equipment.
6. Install anchor bolts according to anchor-bolt manufacturer's written instructions.
7. Use 5000-psi, 28-day compressive-strength concrete and reinforcements.

3.6 ERECTION OF METAL SUPPORTS AND ANCHORAGES

- A. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor HVAC materials and equipment.
- B. Field Welding: Comply with AWS D1.1.

3.7 GROUTING

- A. Mix and install grout for HVAC equipment base bearing surfaces, pump and other equipment base plates, and anchors.
- B. Clean surfaces that will come into contact with grout.
- C. Provide forms as required for placement of grout.
- D. Avoid air entrapment during placement of grout.
- E. Place grout, completely filling equipment bases.
- F. Place grout on concrete bases and provide smooth bearing surface for equipment.
- G. Place grout around anchors.
- H. Cure placed grout.

END OF SECTION 15051

SECTION 15300 - REFRIGERANT PIPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
  - 1. Refrigerant pipes and fittings.
  - 2. Refrigerant piping valves and specialties.
  - 3. Refrigerants.

1.3 SUBMITTALS

- A. Product Data: For each type of valve and refrigerant piping specialty.
  - 1. Include pressure drop, based on manufacturer's test data, for the following:
    - a. Thermostatic expansion valves.
    - b. Solenoid valves.
    - c. Hot-gas bypass valves.
    - d. Filter dryers.
    - e. Strainers.
    - f. Pressure-regulating valves.
- B. Shop Drawings:
  - 1. Show layout of refrigerant piping and specialties, including pipe, tube, and fitting sizes; flow capacities; valve arrangements and locations; slopes of horizontal runs; oil traps; double risers; wall and floor penetrations; and equipment connection details.
  - 2. Show piping size and piping layout, including oil traps, double risers, specialties, and pipe and tube sizes to accommodate, as a minimum, equipment provided, elevation difference between compressor and evaporator, and length of piping to ensure proper operation and compliance with warranties of connected equipment.
  - 3. Show interface and spatial relationships between piping and equipment.
  - 4. Shop Drawing Scale: 1/4 inch equal 1 foot.
- C. Welding certificates.
- D. Field quality-control reports.

- E. Operation and Maintenance Data: For refrigerant valves and piping specialties to include in maintenance manuals.

#### 1.4 QUALITY ASSURANCE

- A. Welding Qualifications: Qualify procedures and personnel according to 2010 ASME Boiler and Pressure Vessel Code: Section IX, "Welding and Brazing Qualifications."
- B. Comply with ASHRAE 15, "Safety Code for Refrigeration Systems."
- C. Comply with ASME B31.5, "Refrigeration Piping and Heat Transfer Components."

#### 1.5 PRODUCT STORAGE AND HANDLING

- A. Store piping with end caps in place to ensure that piping interior and exterior are clean when installed.

### PART 2 - PRODUCTS

#### 2.1 PERFORMANCE REQUIREMENTS

- A. Line Test Pressure for Refrigerant R-410A:
  - 1. Suction Lines for Heat-Pump Applications: 535 psig.
  - 2. Hot-Gas and Liquid Lines: 535 psig.

#### 2.2 COPPER TUBE AND FITTINGS

- A. Copper Tube: ASTM B 88, L or ASTM B 280, Type ACR.
- B. Wrought-Copper Fittings: ASME B16.22.
- C. Wrought-Copper Unions: ASME B16.22.
- D. Solder Filler Metals: ASTM B 32. Use 95-5 tin antimony or alloy HB solder to join copper socket fittings on copper pipe.
- E. Brazing Filler Metals: AWS A5.8/A5.8M.
- F. Flexible Connectors:
  - 1. Body: Tin-bronze bellows with woven, flexible, tinned-bronze-wire-reinforced protective jacket.
  - 2. End Connections: Socket ends.

3. Offset Performance: Capable of minimum **3/4-inch** misalignment in minimum **7-inch-** long assembly.
4. Working Pressure Rating: Factory test at minimum **500 psig.**
5. Maximum Operating Temperature: **250 deg F.**

## 2.3 VALVES AND SPECIALTIES

### A. Diaphragm Packless Valves:

1. Body and Bonnet: Forged brass or cast bronze; globe design with straight-through or angle pattern.
2. Diaphragm: Phosphor bronze and stainless steel with stainless-steel spring.
3. Operator: Rising stem and hand wheel.
4. Seat: Nylon.
5. End Connections: Socket, union, or flanged.
6. Working Pressure Rating: **500 psig.**
7. Maximum Operating Temperature: **275 deg F.**

### B. Packed-Angle Valves:

1. Body and Bonnet: Forged brass or cast bronze.
2. Packing: Molded stem, back seating, and replaceable under pressure.
3. Operator: Rising stem.
4. Seat: Nonrotating, self-aligning polytetrafluoroethylene.
5. Seal Cap: Forged-brass or valox hex cap.
6. End Connections: Socket, union, threaded, or flanged.
7. Working Pressure Rating: **500 psig.**
8. Maximum Operating Temperature: **275 deg F.**

### C. Check Valves:

1. Body: Ductile iron, forged brass, or cast bronze; globe pattern.
2. Bonnet: Bolted ductile iron, forged brass, or cast bronze; or brass hex plug.
3. Piston: Removable polytetrafluoroethylene seat.
4. Closing Spring: Stainless steel.
5. Manual Opening Stem: Seal cap, plated-steel stem, and graphite seal.
6. End Connections: Socket, union, threaded, or flanged.
7. Maximum Opening Pressure: **0.50 psig.**
8. Working Pressure Rating: **500 psig.**
9. Maximum Operating Temperature: **275 deg F.**

### D. Solenoid Valves: Comply with AHRI 760 and UL 429; listed and labeled by a National Recognized Testing Laboratory (NRTL).

1. Body and Bonnet: Plated steel.
2. Solenoid Tube, Plunger, Closing Spring, and Seat Orifice: Stainless steel.
3. Seat: Polytetrafluoroethylene.
4. End Connections: Threaded.



5. Electrical: Molded, watertight coil in NEMA 250 enclosure of type required by location with **1/2-inch** conduit adapter, and electronic coil.
  6. Working Pressure Rating: **400 psig**.
  7. Maximum Operating Temperature: **240 deg F**.
- E. Safety Relief Valves: Comply with 2010 ASME Boiler and Pressure Vessel Code; listed and labeled by an NRTL.
1. Body and Bonnet: Ductile iron and steel, with neoprene O-ring seal.
  2. Piston, Closing Spring, and Seat Insert: Stainless steel.
  3. Seat: Polytetrafluoroethylene.
  4. End Connections: Threaded.
  5. Working Pressure Rating: **400 psig**.
  6. Maximum Operating Temperature: **240 deg F**.
- F. Thermostatic Expansion Valves: Comply with AHRI 750.
1. Body, Bonnet, and Seal Cap: Forged brass or steel.
  2. Diaphragm, Piston, Closing Spring, and Seat Insert: Stainless steel.
  3. Packing and Gaskets: Non-asbestos.
  4. Capillary and Bulb: Copper tubing filled with refrigerant charge.
  5. Suction Temperature: **40 deg F**.
  6. Superheat: Adjustable.
  7. Reverse-flow option (for heat-pump applications).
  8. End Connections: Socket, flare, or threaded union.
  9. Working Pressure Rating: **700 psig**.
- G. Hot-Gas Bypass Valves: Comply with UL 429; listed and labeled by an NRTL.
1. Body, Bonnet, and Seal Cap: Ductile iron or steel.
  2. Diaphragm, Piston, Closing Spring, and Seat Insert: Stainless steel.
  3. Packing and Gaskets: Non-asbestos.
  4. Solenoid Tube, Plunger, Closing Spring, and Seat Orifice: Stainless steel.
  5. Seat: Polytetrafluoroethylene.
  6. Electrical: Molded, watertight coil in NEMA 250 enclosure of type required by location with **1/2-inch** conduit adapter and electronic coil.
  7. End Connections: Socket.
  8. Throttling Range: Maximum **5 psig**.
  9. Working Pressure Rating: **500 psig**.
  10. Maximum Operating Temperature: **240 deg F**.
- H. Straight-Type Strainers:
1. Body: Welded steel with corrosion-resistant coating.
  2. Screen: 100-mesh stainless steel.
  3. End Connections: Socket or flare.
  4. Working Pressure Rating: **500 psig**.
  5. Maximum Operating Temperature: **275 deg F**.

I. Angle-Type Strainers:

1. Body: Forged brass or cast bronze.
2. Drain Plug: Brass hex plug.
3. Screen: 100-mesh monel.
4. End Connections: Socket or flare.
5. Working Pressure Rating: 500 psig.
6. Maximum Operating Temperature: 275 deg F.

J. Moisture/Liquid Indicators:

1. Body: Forged brass.
2. Window: Replaceable, clear, fused glass window with indicating element protected by filter screen.
3. Indicator: Color coded to show moisture content in parts per million (ppm).
4. Minimum Moisture Indicator Sensitivity: Indicate moisture above 60 ppm.
5. End Connections: Socket or flare.
6. Working Pressure Rating: 500 psig.
7. Maximum Operating Temperature: 240 deg F.

K. Replaceable-Core Filter Dryers: Comply with AHRI 730.

1. Body and Cover: Painted-steel shell with ductile-iron cover, stainless-steel screws, and neoprene gaskets.
2. Filter Media: 10 micron, pleated with integral end rings; stainless-steel support.
3. Desiccant Media: Activated alumina.
4. Designed for reverse flow (for heat-pump applications).
5. End Connections: Socket.
6. Access Ports: NPS 1/4 connections at entering and leaving sides for pressure differential measurement.
7. Maximum Pressure Loss: 2 psig.
8. Working Pressure Rating: 500 psig.
9. Maximum Operating Temperature: 240 deg F.

L. Receivers: Comply with AHRI 495.

Comply with UL 207; listed and labeled by an NRTL.

1. Body: Welded steel with corrosion-resistant coating.
2. Tappings: Inlet, outlet, liquid level indicator, and safety relief valve.
3. End Connections: Socket or threaded.
4. Working Pressure Rating: 500 psig.
5. Maximum Operating Temperature: 275 deg F.

M. Liquid Accumulators: Comply with AHRI 495.

1. Body: Welded steel with corrosion-resistant coating.
2. End Connections: Socket or threaded.
3. Working Pressure Rating: 500 psig.
4. Maximum Operating Temperature: 275 deg F.

2.4 REFRIGERANTS

- A. ASHRAE 34, R-410A: Pentafluoroethane/Difluoromethane.

PART 3 - EXECUTION

3.1 PIPING APPLICATIONS FOR REFRIGERANT R-410A

- A. Suction, Hot-Gas and Liquid Lines: See specifications shown on project's Mechanical Drawings.
- B. Safety-Relief-Valve Discharge Piping: Copper, Type ACR or Type L, annealed- or drawn-temper tubing and wrought-copper fittings with brazed or soldered joints.

3.2 VALVE AND SPECIALTY APPLICATIONS

- A. Install diaphragm packless or packed-angle valves in suction and discharge lines of compressor as recommended by compressor manufacturer.
- B. Install service valves for gage taps at inlet and outlet of hot-gas bypass valves and strainers if they are not an integral part of valves and strainers.
- C. Install a check valve at the compressor discharge and a liquid accumulator at the compressor suction connection.
- D. Except as otherwise indicated, install diaphragm packless or packed-angle valves on inlet and outlet side of filter dryers.
- E. Install a full-size, three-valve bypass around filter dryers.
- F. Install solenoid valves upstream from each expansion valve and hot-gas bypass valve. Install solenoid valves in horizontal lines with coil at top.
- G. Install thermostatic expansion valves as close as possible to distributors on evaporators.
  - 1. Install valve so diaphragm case is warmer than bulb.
  - 2. Secure bulb to clean, straight, horizontal section of suction line using two bulb straps. Do not mount bulb in a trap or at bottom of the line.
  - 3. If external equalizer lines are required, make connection where it will reflect suction-line pressure at bulb location.
- H. Install safety relief valves where required by ASME Boiler and Pressure Vessel Code. Pipe safety-relief-valve discharge line to outside according to ASHRAE 15.
- I. Install moisture/liquid indicators in liquid line at the inlet of the thermostatic expansion valve or at the inlet of the evaporator coil capillary tube.

- J. Install strainers upstream from and adjacent to the following unless they are furnished as an integral assembly for the device being protected:
  - 1. Solenoid valves.
  - 2. Thermostatic expansion valves.
  - 3. Hot-gas bypass valves.
  - 4. Compressor.
- K. Install filter dryers in liquid line between compressor and thermostatic expansion valve, and in the suction line at the compressor, unless recommended otherwise by compressor manufacturer.
- L. Install receivers sized to accommodate pump-down charge.
- M. Install flexible connectors at compressors.

### 3.3 PIPING INSTALLATION

- A. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems; indicated locations and arrangements were used to size pipe and calculate friction loss, expansion, pump sizing, and other design considerations. Install piping as indicated unless deviations to layout are approved on Shop Drawings.
- B. Install refrigerant piping according to ASHRAE 15.
- C. Install piping in concealed locations unless otherwise indicated and except in equipment rooms and service areas.
- D. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise.
- E. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal.
- F. Install piping adjacent to machines to allow service and maintenance.
- G. Install piping free of sags and bends.
- H. Install fittings for changes in direction and branch connections.
- I. Select system components with pressure rating equal to or greater than system operating pressure.
- J. Install piping as short and direct as possible, with a minimum number of joints, elbows, and fittings.
- K. Arrange piping to allow inspection and service of refrigeration equipment. Install valves and specialties in accessible locations to allow for service and inspection. Install access doors or panels if valves or equipment requiring maintenance is concealed behind finished surfaces.

- L. Install refrigerant piping in protective conduit where installed belowground.
- M. Install refrigerant piping in rigid or flexible conduit in locations where exposed to mechanical injury.
- N. Slope refrigerant piping as follows:
  - 1. Install horizontal hot-gas discharge piping with a uniform slope downward away from compressor.
  - 2. Install horizontal suction lines with a uniform slope downward to compressor.
  - 3. Install traps and double risers to entrain oil in vertical runs.
  - 4. Liquid lines may be installed level.
- O. When brazing or soldering, remove solenoid-valve coils and sight glasses; also remove valve stems, seats, and packing, and accessible internal parts of refrigerant specialties. Do not apply heat near expansion-valve bulb.
- P. Before installation of steel refrigerant piping, clean pipe and fittings using the following procedures:
  - 1. Shot blast the interior of piping.
  - 2. Remove coarse particles of dirt and dust by drawing a clean, lintless cloth through tubing by means of a wire or electrician's tape.
  - 3. Draw a clean, lintless cloth saturated with trichloroethylene through the tube or pipe. Continue this procedure until cloth is not discolored by dirt.
  - 4. Draw a clean, lintless cloth, saturated with compressor oil, squeezed dry, through the tube or pipe to remove remaining lint. Inspect tube or pipe visually for remaining dirt and lint.
  - 5. Finally, draw a clean, dry, lintless cloth through the tube or pipe.
  - 6. Safety-relief-valve discharge piping is not required to be cleaned but is required to be open to allow unrestricted flow.
- Q. Install piping with adequate clearance between pipe and adjacent walls and hangers or between pipes for insulation installation.

### 3.4 PIPE JOINT CONSTRUCTION

- A. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.
- B. Remove scale, slag, dirt, and debris from inside and outside of pipe and fittings before assembly.
- C. Fill pipe and fittings with an inert gas (nitrogen or carbon dioxide), during brazing or welding, to prevent scale formation.
- D. Soldered Joints: Construct joints according to ASTM B 828 or CDA's "Copper Tube Handbook."

- E. Brazed Joints: Construct joints according to AWS's "Brazing Handbook," Chapter "Pipe and Tube."
  - 1. Use Type BCuP (copper-phosphorus) alloy for joining copper socket fittings with copper pipe.
  - 2. Use Type BAg (cadmium-free silver) alloy for joining copper with bronze or steel.
- F. Welded Joints: Construct joints according to AWS D10.12M/D10.12.
- G. Flanged Joints: Select appropriate gasket material, size, type, and thickness for service application. Install gasket concentrically positioned. Use suitable lubricants on bolt threads.

### 3.5 HANGERS AND SUPPORTS

- A. Install the following pipe attachments:
  - 1. Adjustable steel clevis hangers for individual horizontal runs less than 20 feet long.
  - 2. Roller hangers and spring hangers for individual horizontal runs 20 feet or longer.
  - 3. Pipe Roller: MSS SP-58, Type 44 for multiple horizontal piping 20 feet or longer, supported on a trapeze.
  - 4. Spring hangers to support vertical runs.
  - 5. Copper-clad hangers and supports for hangers and supports in direct contact with copper pipe.
- B. Install hangers for copper tubing with the following maximum spacing and minimum rod diameters:
  - 1. NPS 1/2: Maximum span, 60 inches; minimum rod, 1/4 inch.
  - 2. NPS 5/8: Maximum span, 60 inches; minimum rod, 1/4 inch.
  - 3. NPS 1: Maximum span, 72 inches; minimum rod, 1/4 inch.
  - 4. NPS 1-1/4: Maximum span, 96 inches; minimum rod, 3/8 inch.
  - 5. NPS 1-1/2: Maximum span, 96 inches; minimum rod, 3/8 inch.
  - 6. NPS 2: Maximum span, 96 inches; minimum rod, 3/8 inch.
- C. Support multifloor vertical runs at least at each floor.

### 3.6 FIELD QUALITY CONTROL

- A. Perform the following tests and inspections:
  - 1. Comply with ASME B31.5, Chapter VI.
  - 2. Test refrigerant piping, specialties, and receivers. Isolate compressor, condenser, evaporator, and safety devices from test pressure if they are not rated above the test pressure.

3. Test high- and low-pressure side piping of each system separately at not less than the pressures indicated in "Performance Requirements" Article.
  - a. Fill system with nitrogen to the required test pressure.
  - b. System shall maintain test pressure at the manifold gage throughout duration of test.
  - c. Test joints and fittings with electronic leak detector or by brushing a small amount of soap and glycerin solution over joints.
  - d. Remake leaking joints using new materials, and retest until satisfactory results are achieved.

B. Prepare test and inspection reports.

### 3.7 SYSTEM CHARGING

A. Charge system using the following procedures:

1. Install core in filter dryers after leak test but before evacuation.
2. Evacuate entire refrigerant system with a vacuum pump to **500 micrometers**. If vacuum holds for 12 hours, system is ready for charging.
3. Break vacuum with refrigerant gas, allowing pressure to build up to **2 psig**.
4. Charge system with a new filter-dryer core in charging line.

### 3.8 ADJUSTING

A. Adjust thermostatic expansion valve to obtain proper evaporator superheat.

B. Adjust high- and low-pressure switch settings to avoid short cycling in response to fluctuating suction pressure.

C. Adjust set-point temperature of air-conditioning or chilled-water controllers to the system design temperature.

D. Perform the following adjustments before operating the refrigeration system, according to manufacturer's written instructions:

1. Open shutoff valves in condenser water circuit.
2. Verify that compressor oil level is correct.
3. Open compressor suction and discharge valves.
4. Open refrigerant valves except bypass valves that are used for other purposes.
5. Check open compressor-motor alignment and verify lubrication for motors and bearings.

E. Replace core of replaceable filter dryer after system has been adjusted and after design flow rates and pressures are established.

END OF SECTION 15300

SECTION 15827 - VARIABLE REFRIGERANT FLOW SYSTEM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SYSTEM DESCRIPTION

- A. The system shall consist of hyper-heat simultaneous heating and cooling outdoor units, digital controllers, indoor fan coil units, and DDC (Direct Digital Controls) for control of the variable refrigerant flow (VRF) system and equipment per the project plans and specifications. Each group of indoor units shall be capable of operating in any mode independently of other indoor units or groups.
- B. VRF System shall be capable of changing mode (cooling to heating, heating to cooling) with no interruption to system operation. To ensure owner comfort, each group of indoor units shall be independently controlled and capable of changing mode automatically when zone temperature strays 1.8 degrees F from set point for ten (10) minutes. The sum of connected capacity of all indoor air handlers shall range from 50% to 150% of outdoor rated capacity.
- C. The basis of design system is a 2-pipe system. If an alternate manufacturer is selected, any additional material, cost, and labor to install additional refrigerant lines, branch controllers, fittings, or other required components shall be incurred by the installing contractor. The installing contractor shall be responsible for additional costs incurred by other contractors and subcontractors as a result of installing an alternate manufacturer's system. The installing contractor must provide complete drawings and documentation identifying all differences between the alternate manufacturer and the basis of design system, subject to engineer's and architect's approval. All costs associated with reviewing and approving these drawings and documentation shall be incurred by the installing contractor.
- D. The heat pump system shall consist of a single outdoor condensing unit, four (4) indoor unit, and two (2) hard-wired wall-mounted controllers each provided with locking lexon covers.
- E. The outdoor condensing heat pump unit shall be a horizontal discharge, 240V, 3Ph, 60Hz unit. The indoor evaporator units shall be 240V, 1Ph, 60HZ wall-mounted (high-wall) unit.
- F. The variable capacity, heat pump heat recovery air conditioning system shall be a complete system of one manufacturer.



1.3 SUBMITTALS

- A. Product Data: For each type of product indicated. Include rated capacities, operating characteristics, and furnished specialties and accessories. Include performance data in terms of capacities, outlet velocities, static pressures, sound power characteristics, motor requirements, and electrical characteristics.
- B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
  - 1. Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
  - 2. Wiring Diagrams: For power, signal, and control wiring.
- C. Samples for Initial Selection: For units with factory-applied color finishes.
- D. Field quality-control reports.
- E. Warranty: Sample of special warranty.
- F. Operation and Maintenance Data: For variable refrigerant flow system units to include in emergency, operation, and maintenance manuals.
- G. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  - 1. Filters: Three (3) for each indoor unit.

1.4 QUALITY ASSURANCE

- A. The units shall be listed by Electrical Testing Laboratories (ETL) and bear the ETL label.
- B. All wiring shall be in accordance with the National Electrical Code (N.E.C.).
- C. All units must meet or exceed the ASHRAE 90.1 efficiency requirements for VRF systems. Efficiency shall be published in accordance with the Air-Conditioning, Heating, and Refrigeration Institute (AHRI) Standards 340/360, 1230 and ISO Standard 13256-1.
- D. The units shall be manufactured in a facility registered to ISO 9001 and ISO14001 which is a set of standards applying to environmental protection set by the International Standard Organization (ISO).
- E. A full charge of R-410A for the condensing unit only shall be provided in the outdoor heat pump unit. Additional refrigerant is required based on lengths of system liquid refrigerant lines.
- F. Coordinate sizes and locations of concrete bases with actual equipment provided. Cast anchor-bolt inserts into bases.

- G. Coordinate sizes and locations of roof curbs, equipment supports, and roof penetrations with actual equipment provided.
- H. Manufacturer shall have a minimum of ten years of VRF experience in the U.S. market and must have a minimum of ten (10) installed heat recovery VRF systems within 100 miles of the project site. Alternate manufacturers must provide a reference list of ten (10) installed heat recovery systems within 100 miles of the project site, including owner contact information.
- I. The VRF system shall be installed by a contractor with extensive VRF installation and service training. The mandatory contractor service and install training must be performed by the manufacturer prior to submittal approval. Training must be a minimum of 3 days at a manufacturer's approved training facility with equipment present. The contractor shall submit a copy of successful training certification in compliance with these requirements. All travel and training expenses are the responsibility of the contractor.
- J. Manufacturer must provide controls integration training to the temperature controls subcontractor. Training must be a minimum of 1 day at a manufacturer's approved training facility with equipment present. All travel and training expenses are the responsibility of the installing contractor.
- K. Manufacturer must provide startup assistance, controls integration assistance, and a minimum of eight hours of owner's training.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Unit shall be stored and handled according to the manufacturer's recommendation.

1.6 WARRANTY

- A. General Warranty: The special warranty specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents. Submit a written warranty, executed by the manufacturer and signed by the Contractor, agreeing to replace components that fail in materials or workmanship, within the specified warranty period, for the following:
  - 1. Base Bid: Manufacturer's full parts and labor warranty for all new outdoor heat pump unit, indoor evaporator units, controls, piping and associated appurtenances for not less than one (1) year, from date of Substantial Completion as determined by Owner.

- B. Extended Special Warranties: Provide Manufacturer's extended warranty (full parts and labor), for heat pump compressors and drive assembly, refrigerant charge, controllers and fans for not less than five (5) years starting from date of Substantial Completion as determined by Owner.
  - 1. Extended five (5) year warranties for parts and labor include, but are not limited to the following for both the indoor unit and outdoor condensing unit:
    - a. Complete compressor and drive assembly, including refrigerant and oil charge.
    - b. All fans and fan motors.
    - c. All controllers and all control devices and wiring.
    - d. Outdoor heat pump unit's coils.
    - e. Loss of refrigerant charge for any reason.

#### 1.7 EXTRA MATERIALS

- A. Contractor shall provide to Owner the following extra materials:
  - 1. Three (3) sets of replacement return air electro-static, washable filters for each indoor unit.

### PART 2 - PRODUCTS

#### 2.1 OUTDOOR UNITS

- A. General:
  - 1. The outdoor units shall be used specifically with VRF components. The outdoor units shall be equipped with multiple circuit boards that interface to the VRF controls system and shall perform all functions necessary for operation.
  - 2. The outdoor unit shall have a powder coated finish. The outdoor unit shall be completely factory assembled, piped and wired. Each unit shall be run tested at the factory.
  - 3. Both refrigerant lines from the outdoor unit to indoor units shall be insulated.
  - 4. The outdoor unit shall have an accumulator.
  - 5. The outdoor unit shall have a high-pressure safety switch, fuse, over-current protection and crank case heating device.
  - 6. The outdoor unit shall be capable of operating in outside ambient temperatures between 14°F to 115°F in cooling mode without additional low ambient controls or devices.
  - 7. For heating in outdoor conditions between -5°F ~ 5°F a field provided base pan heater shall be provided to prevent ice accumulation in the bottom of the outdoor unit.
  - 8. The control circuit between the indoor units, and the outdoor unit shall be 0.5VDC - 7VDC completed using stranded, annealed copper conductor, two-core, 16 AWG, shielded cable to provide total integration of the system.

B. Unit Cabinet:

1. The chassis shall be fabricated of galvanized steel, bonderized and finished with a powder coated baked enamel.

C. Fan:

1. The outdoor unit shall be furnished with one direct drive, variable speed propeller type fan.
2. All fan motors shall be BLDC type.
3. The fan motor shall have inherent protection, have permanently lubricated bearings, and be completely variable speed.
4. The fan motor shall be mounted for quiet operation.
5. The fan shall be provided with a raised guard to prevent contact with moving parts.
6. The outdoor unit shall have horizontal discharge airflow.

D. Refrigerant:

1. The outdoor heat pump unit shall require R410A refrigerant.
2. The outdoor heat pump unit shall come charged for system line set lengths up to 25 feet. Additional refrigerant is required if the system line set length is over 25 feet.
3. The condensing unit shall contain a single EEV (electronic expansion valves) with 480 positions each to control refrigerant flow to the indoor unit.

E. Coil:

1. The outdoor coils shall be flat fin, aluminum, micro channel. The flat fin, aluminum, micro channel condenser coil shall show no unusual signs of corrosion development to 960 hours (ASTM G85 Annex A3).
2. Aluminum coil fins shall be coated with a hydrophilic/protective coating to reduce corrosion and promote moisture shedding. The aluminum fin with copper tub coils shall show no unusual signs of corrosion development to 2,000 hours (ASTM-B117).
3. The coil shall be protected with an integral guard.
4. Refrigerant flow from the outdoor unit shall be controlled by means of a capacity modulation capable, inverter driven, twin BLDC rotary compressor.

F. Compressor:

1. The compressor shall be an inverter driven, DC voltage, BLDC rotary compressor made by Samsung.
2. Crankcase heating shall be factory mounted in/on the compressor.
3. The outdoor unit compressor shall have a variable modulation technology to modulate capacity. The capacity shall be completely variable.
4. The compressor shall be equipped with an internal thermal overload.
5. The compressor shall be mounted to avoid the transmission of vibration.

G. Electrical:

1. The outdoor unit electrical power shall be 240 volts, 3 phase, 60 hertz.
2. The outdoor unit shall be controlled by integral microprocessors.
3. The control circuit between the indoor units and the outdoor unit shall be 0.5VDC - 7VDC completed using stranded, annealed copper conductor, 16 AWG, shielded, two-core cable to provide total integration of the system.

2.2 WALL-MOUNTED INDOOR UNIT

A. General:

1. The indoor unit shall be wall-mounted type with a slim silhouette. The indoor unit shall ship with a wireless controller as standard.

B. Indoor Unit:

1. The indoor unit shall be factory assembled, wired and run tested. Contained within the unit shall be all factory wiring, piping, control circuit board and fan motor.
2. An electronic modulating linear expansion valves is located inside the outdoor heat pump unit for refrigerant control.
3. The unit shall have a self-diagnostic function, 3-minute time delay mechanism, and an auto restart function.
4. The system shall have a "Smart Install" operation mode to ensure system readiness after installation.
5. Indoor unit and refrigerant pipes shall be charged with dehydrated nitrogen gas before shipment from the factory.
6. The indoor unit shall have a 2-step cooling function that will run in turbo-mode initially then reduce capacity and operate in Dry mode once set point has been reached.
7. The indoor unit shall have a fast comfort option to operate the system at a fixed, high capacity for thirty (30) minutes enabled with the wireless controller.
8. The indoor unit shall have a night time sleep mode to reduce system noise and provide optimal sleep conditions enabled with the wireless controller.
9. The indoor unit shall have a single-user function enabled with the wireless controller to reduce the maximum system capacity during mild conditions.
10. The indoor unit shall have a single event, ON/OFF timer setting enabled at the wireless controller.
11. The indoor unit high voltage terminals shall have a thermal fuse to prevent overheating due to loose connections of damaged components.

C. Unit Cabinet:

1. The casing shall be UL94 V0 with a gloss white finish.
2. Multi directional drain and refrigerant piping offering four (4) directions for refrigerant piping and four (4) directions for draining shall be standard.
3. Drain hose shall be on the right-hand side of the drain pan (when facing the front) as standard with optional left-hand side connection.

4. There shall be a separate galvanized steel mounting plate which secures the unit firmly to the wall.
5. The indoor unit shall have easy-access pipe and drain connections via access panel on front of unit for easier installation and service allowing maintenance without pulling the unit out from the wall thus preventing property damage.
6. Two digit, 7-segment display on front of unit, behind louver, shall provide unit operation, temperature, and error status.

D. Fan:

1. The indoor fan assembly shall be a cross-flow fan direct driven by a single motor.
2. The indoor fan shall be statically and dynamically balanced to run on a motor with permanently lubricated bearings.
3. A manual adjustable guide vane shall provide the ability to change the airflow from side to side (left to right).
4. A motorized air sweep louver shall provide an automatic change in airflow by directing the air up and down to provide uniform air distribution.
5. The motorized supply air louver shall be hinged from the top reducing restriction and air noise.
6. The indoor unit cabinet shall have a triangular shape allowing for a larger fan and supply air outlet providing superior air throw at lower sound levels.
7. The indoor fan shall consist of the following various speeds: (UL) - Low – Mid – High - Turbo.

E. Filter:

1. Return air shall be filtered by means of an easily removable, electro-static, washable filter.
2. The indoor unit air filter shall be on top of the unit and accessible without opening a panel or door providing simple access for the end-user.

F. Coil:

1. The indoor coil shall be of nonferrous construction with Slit fins on copper tubing.
2. The tubing shall have inner grooves for high efficiency heat exchange.
3. Aluminum coil fins shall be coated with a hydrophilic/protective coating to reduce corrosion and promote moisture shedding.
4. All tube joints shall be brazed with phos-copper or silver alloy.
5. The coils shall be pressure tested at the factory.
6. A condensate pan and drain shall be provided under the coil.
7. Both refrigerant lines to the indoor unit shall be insulated.

G. Electrical:

1. The unit electrical power shall be 240 volts, 1-phase, 60 hertz supplied independently from the outdoor heat pump unit.
2. The indoor unit PCB contains a time-lag fuse.

3. The control circuit between the indoor units, and the outdoor unit shall be 0.5VDC - 7VDC completed using stranded, annealed copper conductor, two-core, 16 AWG, shielded cable to provide total integration of the system.

H. Premium wired controller kit:

1. Controller kit shall consist of a wall-mounted wired controller, a wire harness, and a sub-PCB.
2. Provide lexon locking cover for each wall-mounted controller.
3. Connection: Can control up to 16 Samsung indoor units (defined and controlled as one group). Sub-PCB shall install inside the indoor unit.
4. Controller dimensions: 4 5/8" x 4 7/8" in size and white in color.
5. Easy indoor unit control:
  - a. Indoor unit operation ON/OFF
  - b. Indoor unit operation mode, set temperature, air flow direction, fan speed
  - c. Quiet and sleep modes
  - d. Error display
  - e. Filter replacement alarm display and reset
  - f. Single indoor unit control or multiple unit control (maximum 16 units)
  - g. Upper/lower temperature setting
  - h. Automatic operation stop function
  - i. Daily/weekly operating schedule setting
6. Other Premium Controller features
  - a. Different button permission levels
  - b. Partial button lock option (on/off, selection, temperature setting, fan speed, and schedule setting buttons can be locked individually)
  - c. Backlight
  - d. Daylight savings clock advance option
  - e. Temperature limit setting option
  - f. Real-time clock function; current time/day display function
  - g. Built-in room temperature sensor
  - h. Indoor unit operation state display
  - i. Service mode support (indoor unit cycle data monitoring, option code monitoring and setting, and dip switch state monitoring)
  - j. Specifications
  - k. wire connection
  - l. DC 12V (V1/V2) power supplied by indoor unit
  - m. RS485 communication (F3/F4)
  - n. Can sense temperature via internal sensor, temperature sensor inside the air handler, or use the average temperature between controller and air indoor unit sensors
  - o. The Premium Controller shall require no addressing.
  - p. The Premium Controller shall connect using four-wire (2 wires for power supply and the other two for communication), untwisted, shielded. The Premium Controller shall require cross-over wiring for grouping across indoor units.
  - q. 16AWG shielded cable is necessary for proper operation

**PART 3 - EXECUTION**

**3.1 INSTALLATION**

- A. Install all indoor and outdoor units level and plumb.
- B. Install evaporator-fan components using manufacturer's standard mounting devices securely fastened to building structure.
- C. Equipment Mounting:
  - 1. Install ground-mounted, compressor-heat pump components on cast-in-place concrete equipment base. Outdoor concrete base shall be installed high enough to meet the area's flood elevation requirements.
- D. Charge system with Refrigerant after leak testing, and in accordance with Manufacturer's Installation Instructions.
- E. Connect services to the unit where called for, in complete accordance with the Manufacturer's Installation Instructions. Furnish Division 16 with wiring diagrams and electrical data to permit power wiring connections to the unit. Provide control wiring serving indoor units' associated outdoor heat pump unit.
- F. Manufacturer shall provide start-up assistance and owner training.
- G. Both refrigerant lines from the outdoor unit to the indoor unit shall be individually insulated.

**3.2 CONNECTIONS**

- A. Piping installation shall meet the VRF system manufacturer's requirements. Drawings only indicate general arrangement of piping, fittings, and specialties. Contractor shall provide all necessary piping, fittings and specialties required by VRF system manufacturer.
- B. Where piping is installed adjacent to unit, allow space for service and maintenance of unit.

**3.3 FIELD QUALITY CONTROL**

- A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections.
- B. Perform tests and inspections.
  - 1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.



- C. Tests and Inspections:
  - 1. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.
  - 2. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation.
  - 3. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- D. Remove and replace malfunctioning units and retest as specified above.
- E. Prepare test and inspection reports.

3.4 STARTUP SERVICE

- A. Engage a factory-authorized service representative to perform startup service.
  - 1. Complete installation and startup checks according to manufacturer's written instructions.

3.5 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain units.

END OF SECTION 15827

SECTION 16010 – ELECTRICAL GENERAL REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to work of this section.
- B. The General Conditions, Special Conditions, Supplementary Conditions, Division 1 Specification Sections, Conditions of Contract and other similar Contract Documents apply to and form a part of this Division.
- C. The applicable portions of the requirements described in this Sub-division 16 shall apply to all work included in the Electrical Documents.

1.2 SCOPE OF WORK

- A. Coordinate all work in this Division with all related trades.
- B. Furnish all materials, equipment, devices, supplies, transportation and labor, and perform all work necessary in the installation of all electrical work, complete and in operating condition.
- C. Examine all drawings and specifications and determine work to be performed by the electrical contractor and other trades. Provide the type and quantity of electrical materials, devices and equipment necessary to complete this work and place all systems in proper operation, tested and ready for use.
- D. Work Included: In general, the electrical work shall consist of, but not be limited to, the following:
  - 1. All electrical work identified on project's electrical bid drawings and technical specifications.
  - 2. Incidental items not indicated on the bid drawings nor mentioned in the bid technical specifications that belong to the work described or are required to provide a complete system as though called out here in every detail.
  - 3. Contractor shall acquire all permits and pay all fees as may be necessary to perform the specified work.
- E. Line voltage electrical work related to the mechanical trades shall be included under the Electrical Section of the Work. Coordinate all required line voltage work with the Mechanical Contractor.

- F. Work Related to other Electrically Operated Equipment.
1. Provide all electrical line voltage work required to provide electrical service and connection of electrically operated and/or controlled equipment, devices and systems furnished by other trades and specified in other trade sections of work. Examine all drawings and specifications and manufacturer's wiring diagrams and recommendations of other trades, particularly, but not limited to, equipment provided in the general construction, mechanical and plumbing contracts.
- G. Work includes, but is not limited to, the following scope:
1. During all periods of County occupancy, Contractor shall maintain full operation of the facility's electrical, mechanical, plumbing and fire alarm systems.
  2. Any shutdowns of mechanical, plumbing, electrical and fire alarm systems are to be performed only during periods when the building is not occupied. Contractor shall coordinate with the County all dates, times and durations of all shutdowns no less than two (2) weeks prior to the actual shutdown(s).
  3. Installation of all electrical work indicated on the construction drawings.
  4. Contractor shall provide all materials and services necessary to power and energize all new mechanical equipment and systems. All resulting wall, roof and floor openings and penetrations shall be properly sealed and firesafed.
  5. Contractor shall furnish and install new receptacles, wiring, devices, etc., as specified on Contract Drawings and in Technical Specifications.
  6. Contractors shall not interrupt operation of any existing heating, cooling and ventilation systems serving the facility.
  7. Contractors shall maintain full operation of the building's existing electrical, plumbing and fire alarms systems serving all areas of the facility.
  8. Contractor shall be responsible to make all necessary permit applications, pay all permit fees and acquire all permits for specified electrical work. Contractor shall be responsible to be properly licensed in the State of New Jersey to perform public work and be properly licensed to perform specified work as required by the local authorities having jurisdiction.
  9. Mechanical Contractor shall furnish and install new mechanical equipment, controls, piping, devices, appurtenances, etc., required for the proper operation of new heating and air conditioning systems as specified on the project's contract drawings and within the technical specifications.
  10. Contractor shall coordinate with all other trades the installation of the new mechanical systems. Contractor shall perform all electrical work necessary for a fully code compliant new heating and cooling system.
  11. Electrical Contractor shall coordinate with the Mechanical Contractor as to the electrical requirements of all new mechanical systems. No electrified equipment shall be purchased until the Electrical Contractor has confirmed available power requirements.
  12. All bid drawings are diagrammatic and must be field verified by the Contractor prior to commencing any work.

13. Contractor shall provide all necessary materials and services for installation of all new electrical equipment, wiring, devices, controls, appurtenances, etc., including, but not limited to, all necessary wall, roof and floor openings and penetrations. All wall, roof and floor openings and penetrations shall be properly sealed. Where openings or penetrations are through a fire rated assembly, as identified on the Architectural Drawings, the openings and penetrations shall be firesafed.
14. Contractors shall provide all necessary materials and services for cutting and patching of walls, ceilings and floors disturbed as part of their work. All patched/repared walls, floors and ceilings shall be painted to match existing finishes.
15. Prior to Bid, Contractor shall thoroughly inspect the project's site and include in the Contractor's bid and scope of work, all necessary relocations of interfering equipment, devices, piping, conduit, wiring, curbing, sidewalk, landscaping, etc., that are required to properly locate all new specified mechanical and electrical equipment, piping, devices, appurtenances, etc., in locations shown on Contract Drawings.
16. Contractor shall provide all necessary material and services for installation of incidental electrical work required for the complete installation of the aforementioned mechanical equipment, devices, piping, systems, etc.
17. Contractor shall acquire all permits and pay all fees necessary to perform the specified work.
18. Contractors shall include in their bid amount a warranty of one (1) year from date of Substantial Completion for complete labor and materials for all of the project's new electrical equipment, devices and systems.

1.3 INTENT

- A. It is the intent of the Specifications and Drawings to call for finished work, tested and ready for operation.
- B. Any apparatus, appliance, material or work not shown on drawings but mentioned in the specifications, or vice versa, or any incidental accessories necessary to make the work complete in all respects and ready for operation shall be furnished, delivered and installed by the Contractor without additional expense to the Owner.

1.4 VISIT TO SITE

- A. Prior to submission of bid, visit Site and become familiar with existing conditions. Bids as submitted will be interpreted to include all costs and charges made necessary by existing conditions such as installation space requirements and interferences.
- B. Contractor shall verify, in the field, the location and elevation of all underground services affected by this work before proceeding with construction. Notify Engineer and Architect immediately in the event the location of existing utilities vary appreciable from those shown on drawings.

1.5 LEGAL REQUIREMENTS AND STANDARDS

- A. In addition to the Division 1 Specification Sections and Drawings, comply with the latest adopted rules of the following:
  - 1. National Electric Code as adopted by New Jersey.
  - 2. New Jersey State Uniform Construction Code.
  - 3. Local codes, laws, ordinances, rules and regulations of authorities having jurisdictions.
  - 4. OSHA.
  - 5. International Building Code as adopted by New Jersey.
- B. The requirements of authorities shall be the minimum acceptable requirements for the work and nothing described in these specifications or indicated on the drawings shall be construed to permit work not conforming to the most stringent of the applicable codes and regulations.
- C. When the drawings or specifications call for materials or construction of better quality or larger size than required by codes, laws, rules and regulations, the drawings and specifications shall take precedence.
- D. Should any changes to work indicated on the drawings or described in the specifications be necessary so as to comply with the above requirements, immediately notify the Engineer and Architect.

1.6 GUARANTEE

- A. Except as may be specified under other sections in the specifications, guarantee all new equipment, devices, systems, etc., for a period of one (1) year from date of project Substantial Completion as determined by the Owner and Architect, against defective workmanship and material and improper installation. Upon notification of failure, correct deficiency immediately, and without cost to the Owner. Warranty shall include all necessary labor and materials.
- B. Unless noted otherwise, standard warranty of manufacturer shall apply for replacement of parts after expiration of above period. Provide manufacturer's replacement parts to the Owner, or his service agency as directed. Furnish to the Owner printed manufacturer's warranties, upon completion of project.

1.7 PERMITS AND INSPECTIONS

- A. Obtain and pay for all permits and inspections required by all legal authorities and agencies having jurisdiction for the work. This shall be a part of the work of the Contractor performing the work requiring the permit. The certificates of all such permits and inspections shall be delivered to the Owner.

1.8 COORDINATION

- A. Prior to bid, Contractor shall examine Architectural, Mechanical and Electrical Drawings for proper coordination of all trades and include in bid price all necessary work required for proper field coordination of all trades.
- B. Prior to any construction work, Contractor shall reexamine all available Architectural, Mechanical and Electrical Drawings. The work of all other Sub-Contractors shall be carefully considered, and the work of this Contractor and each of his Sub-Contractors coordinated so that all parts of their work will be compatible with and not interfere with the other trades.
- C. Review with the General Contractor and all other trades, locations of all equipment and materials so that all work may be installed in the most direct manner and interferences are avoided between pipes, ducts, conduits, equipment, fixtures, devices, associated appurtenances and architectural and structural features.
- D. Contractors shall jointly prepare Coordination Drawings which include all mechanical and electrical installation layouts to be submitted to Engineer, Architect and all other Trades for mark-up, comment and coordination. Contractors shall submit, to the Architect and Engineer, and all other trades, all setting plans, templates, approved shop drawings, approved equipment layouts, approved electrical and control wiring diagrams, etc., to insure proper space and functional relationship to all other equipment and services.
- E. Prepare dimensioned conduit and equipment "Layout Drawings" in 1/4" scale showing all inserts, sleeves in floors, walls, roofs, beams and columns as part of Contractor's coordination drawings. Drawings shall provide for proper alignment.
- F. Coordinate with all trades, clear passages and code required clearances necessary to deliver, relocate, remove, install and erect equipment and materials.
- G. Where there will not be sufficient clearance for passage following erection of confining enclosures, deliver, set and protect equipment and materials before erection of confining enclosures. All equipment and materials so confined shall be inspected and tested prior to delivery. Should equipment or materials fail to meet the requirements of the Specifications, replace equipment or materials and pay all costs, including costs for modifications of completed areas that are required to provide clear passage.
- H. When interferences occur, prepare installation drawings in 1/4" scale of equipment and material in areas of interferences. Submit drawings to all other trades for their examination, comment, coordination and signed approval. Submit fully coordinated installation drawings to the Engineer and Architect for review before beginning any construction work. Meet as necessary with all other trades affected, coordinate work and correct interferences. Where interferences occur during construction because failure to coordinate work, rearrange work at no additional cost to the Owner.

- I. All modifications to the building, removal and relocation of equipment and materials that are required for clear passage and code required clearance of equipment shall be provided in accordance with Subparagraph G above. Restoration of disturbed building structures and surfaces, and reinstallation and reconnection of equipment shall be provided in accordance with Subparagraph G above.
- J. Coordinate the procurement of specified materials and equipment being supplied by Sub-Contractors, manufacturers and vendors. Such items as controls, thermometers, gages, motor starting equipment, vibration isolation devices, valves, etc., when provided as part of the equipment, shall meet the requirements of these specifications.

1.9 PROTECTION

- A. Effectively protect all material and equipment from dust, dirt, weather and damage until final acceptance as installed. Close all conduit, device, lighting and equipment openings, during construction, with suitable temporary closures. Provide suitable protective covering for equipment and material before, during and following installation. Provide new materials and equipment to replace similar damaged items without additional cost to the Owner.

1.10 DRAWINGS

- A. Accompanying electrical drawings are a part of the Contract Documents and are intended to show approximate and relative locations of materials, devices and equipment. Drawings shall not be scaled to determine exact positions and clearances. Ascertain all dimensions in the field.
- B. Because of diagrammatic layout and small scale of drawings, not all conduit and cable rises, drops, offsets and related specialties are indicated. Provide all such conduit, cables, fittings and specialties required in such cases to insure a complete and properly operating installation in accordance with Codes and without extra cost to Owner.
- C. Examine all drawings and specifications pertaining to the work of all Other Trades. Be responsible for installation and fitting into the building, without interference to the work of Other Trades, all materials and equipment provided under this Contract.
- D. When directed by the Engineer or Architect, the Contractor shall, without extra charge, make reasonable modifications in the layout as needed, to prevent conflict with the work of other trades or for proper execution of the work.
- E. Where variances occur between the drawings and the specifications or within either document itself, the item or arrangement of better quality and greater quantity shall be included in the Contract price. The Engineer and Architect will decide on the item and the manner in which work shall be installed.

1.11 SUBMITTALS

- A. The Contractor shall carefully prepare and review his schedule of submissions, determine the necessary lead time for preparing, submitting, checking, ordering and delivery of all materials and equipment for timely arrival. The Contractor shall be responsible for conformance with the overall construction schedule.
- B. Submittals will be checked for general compliance with specifications only. The Contractor shall be responsible for deviations from the drawings or specifications, and for errors or omissions of any sort in submittals.
- C. Submit a complete list of material and equipment proposed for the job, including manufacturer's names.
- D. Reference all listings to the specifications' article to which each is applicable.
- E. Submit on all materials and equipment, even if same is as specified or shown on the drawings.
- F. Include complete catalog information such as construction, ratings, insulation systems, etc.
- G. Include with each submission and for each item the following information:
  - 1. Project name.
  - 2. Name of Contractor and/of Subcontractor making submission.
  - 3. Name of equipment, fixture, device, etc., being submitted. Identify by identification number shown on drawing.
  - 4. The manufacturer's name for each piece of equipment, fixture, device, etc.
  - 5. Complete performance data including voltage.
  - 6. Materials and features of construction.
  - 7. All changes resulting from requests for information (RFI's) or owner approved change orders (CO's) or requests against allowance (RAA's) shall be referenced on submittals.
- H. As a minimum, submit shop drawings for the following:
  - 1. Receptacles and Covers.
  - 2. Switches and Covers.
  - 3. Circuit Breakers.
  - 4. Line & Low Voltage Wiring and Conduit.
  - 5. Starters and Disconnect Switches.
- I. Refer to Division 1 Specification Sections for additional information.

1.12 MATERIALS, STANDARDS OF QUALITY AND SUBSTITUTIONS

- A. All materials and equipment shall be new and of standards specified herein.



- B. Equipment shall be standard catalog products of an established manufacturer, regularly produced and recommended for service required, in accordance with engineering data or other comprehensive literature made available to the public, and in effect at the time of the bids. Where two or more units of same class equipment are required, these units shall be products of a single manufacturer.
- C. All equipment shall be installed in strict accordance with manufacturer's instructions for type and capacity of each piece of equipment used. Each Contractor shall obtain these instructions which shall be considered part of these specifications. Type, capacity and application of equipment shall be suitable and must operate satisfactorily for the purpose intended and be so guaranteed by the manufacturer through the Contractor.
- D. Coordinate the procurement of specified materials, fixtures, devices and equipment being supplied by sub-contractors, manufacturers and vendors.
- E. Equipment, fixtures, devices and systems of same type, such as starters, panels, distribution boards, circuit breakers, disconnect switches, fuses, etc., shall be the product of one manufacturer unless they are part of a factory assembled equipment package.
- F. Electrical distribution equipment shall be provided from a single source manufacturer and be compatible with the existing equipment.
- G. The manufacturer or figure number named in the specifications and/or listed in equipment schedules on the drawings, are the items that have been used as the basis for design. Systems have been designed on the basis of the equipment specified. When manufacturer's names and figure numbers are used, they shall be considered as the standard of grade and quality required. Materials and equipment of other manufacturers' may be used, if accepted, but they must be equal in all respects, capacity, quality, design and type. **Should equivalent items of other manufacturers be submitted by the Contractor, it shall be the Contractor's responsibility to provide and bear at no extra cost to Owner, all changes to the designed general construction, structural, heating, ventilating and air conditioning, plumbing and electrical systems, that are required by the use of the substituted items, including cost of Architect's and Engineer's redesign efforts.**

1.13 PERFORMANCE OF EQUIPMENT, FIXTURES, DEVICES AND SYSTEMS

- A. Equipment, fixtures, devices and systems shall perform properly and in accordance with the intent of the Contract Documents.
- B. Equipment, fixtures, devices and systems shall be installed and tested in accordance with manufacturer's instructions for type and capacity, also in accordance with requirements of these specifications. Manufacturer's instructions shall be considered a part of these specifications.
- C. Shop drawing submittal shall include manufacturer's complete physical and performance data. Performance shall be demonstrated "in-the-field" by the manufacturer.

1.14 AS-BUILT DRAWINGS

- A. Prior to final payment, the Contractor shall submit “As-Built” drawings as herein described.
- B. Maintain during construction a “clean” record set of installation prints. Record in colored ink on these prints all deviations from the contract drawings in sizing, location and details of underground utilities, piping, ductwork, equipment, etc. Submit as-built drawings to Architect and Engineer for review as part of project’s close-out. All changes resulting from requests for information (RFI’s) or owner approved change orders (RAA’s) shall be referenced on "as-built" drawings. Make correction following review and submit a complete set of "as-built" drawings, two (2) sets hard copy reproducible (1/8" =1'-0" scale minimum), and two (2) sets electronic files produced in PDF format on CD’s to the Architect and Owner upon project completion.

1.15 WORK RESPONSIBILITIES

- A. Examine the site and review all architectural, mechanical, electrical, and all other project drawings and accept such conditions and make allowance for them in preparing the bid. No extra charges will be considered for costs resulting from failure to comply with the above.
- B. The drawings indicate diagrammatically the desired locations or arrangement of conduit runs, outlets, equipment, devices, panels, etc. and are to be followed as closely as possible. Proper judgment must be exercised in executing the work so as to secure the best possible installation in the available space and to overcome local difficulties due to space limitations or interference with structural conditions. The Contractor is responsible for the correct placing of his work and the proper location and connection of his work in relation to the work of other trades.
- C. In the event changes in the indicted locations or arrangements are necessary due to developed conditions in the building construction or rearrangement of furnishings or equipment, such changes shall be made without extra costs, providing the change is ordered before the conduit runs, etc., and the work directly connected to same is installed.
- D. All scaled and figured dimensions are approximate of typical equipment of the type, class and capacity indicated. Before proceeding with any work, carefully check and verify all dimensions, sizes, etc. with the drawings to see that the equipment will fit into the spaces provided without violation of applicable codes.
- E. Where equipment is furnished by others, verify voltage characteristics and dimensions and the correct locations of this equipment before proceeding with the roughing-in of connections.
- F. Should any changes to the work indicated on the drawings or described in the specifications be necessary in order to comply with the above requirements, notify the Engineer and Architect immediately and cease work on all parts of the Contract which are affected until approval for any required modifications to the construction has been obtained from the Engineer and Architect.
- G. Perform all work competent and skilled personnel.
- H. All work shall be of the highest quality consistent with the best practices of the trade.

- I. Replace or repair, without additional compensation, any work which, in the opinion of the Engineer or Architect, does not comply with these requirements.
- J. The Contractor shall be responsible for the safety and good condition of all materials and equipment until final acceptance by the Owner; for providing adequate and proper storage facilities during the progress of the work; for replacing all damaged and defective work before applying for final acceptance; for erecting and maintaining suitable barriers, protective devices, light and warning signs for the protection of the public and employees; and for all loss, damage or injury to persons or property resulting from any neglect of these responsibilities.
- K. The Contractor shall be responsible for all faults and deficiencies in his work during the guarantee period and shall repair, at no cost to the Owner, all such deficiencies that occur immediately upon notification by the Owner. All damage to other work there from, which may occur during the construction and guarantee period, shall be repaired at once, at no cost to the Owner.

1.16 INTERPRETATION

- A. All requests for interpretation of plans and specifications must be made by the Contractor through the Architect. Any such requests made by equipment manufacturer or suppliers will be referred to the Contractor.

1.17 INSPECTION AND ACCEPTANCE PROCEDURE

- A. The Architect shall submit inspection reports periodically during the construction phase detailing contract deficiencies. The Contractor is responsible for making all corrections immediately to avoid delaying other trades. Final acceptances of the project will not be made until all items have been corrected.

1.18 WORK FORCE AND SUPERINTENDENCE

- A. Contractor shall, upon initiation of construction, keep a suitable force of men on the site at all times in order to provide all sleeves, inserts and provide all other materials as required for the satisfactory installation of the entire system.
- B. Contractor shall give his personal superintendence to the work or have a competent superintendent, satisfactory to the Engineer, Architect and the Owner, on the work at all times during construction with authority to act for him. He shall provide an adequate organization for proper coordination and expediting of this work.

1.19 RUBBISH

- A. During the course of construction, all Contractors shall be responsible to remove from the premises all rubbish resulting from the work of the project. Contractors shall coordinate the continual cleanup of the project site with the project's Prime Contractor.

- B. At all times, keep the premises free from accumulations of waste materials and rubbish caused by agents and employees of the Contractor.
- C. At the completion of the work, remove from the site all rubbish in or about the building, in addition to tools, scaffolding and other specialties that were utilized or a result of Contractor's work.
- D. In the event of dispute of refusal to comply with the requirements of the above paragraphs, the Owner shall have the option of removing such rubbish from the premises, and back-charge the Contractor for doing such work.
- E. The Contractor shall, on a daily basis, remove from the site all rubbish, debris and discarded materials resulting from Contractor's work.

1.20 TEMPORARY SERVICES FOR CONSTRUCTION

- A. The Electrical contractor shall conform to Article 400 of the 2014 edition of the National Electrical Code regarding flexible cords and cables for the selection of feeder cable for temporary construction power. The cable shall be extra hard usage, type "W" cable, copper conductor, thermoset insulation.
- B. Installation and protection of temporary wiring shall be in accordance with Article 590 of the 2014 National Electrical Code.
- C. All temporary wiring and power sources shall be coordinated with Owner, prior to installation.

1.21 CONTINUITY OF EXISTING SYSTEMS AND SERVICES

- A. All work shall be performed at such time and manner that will least interfere with the operation and occupancy of the facility's unaffected areas. Provisions shall be made to permit Owner's use of all existing systems except during the facility's scheduled construction shut-downs as coordinated with the Architect and Owner. Provide temporary facilities to secure these conditions and remove temporary facilities when permanent work has been placed into service.
- B. Until the scheduled partial construction shut-down of the involved areas, all existing electrical systems shall be continuously maintained and fully operational.
- C. Fully coordinate and schedule with Owner, Architect and all Other Trades, all work involving shut-down and interruption of existing systems and services. Coordinate and schedule all other required system shutdowns with Architect, Owner and all Other Trades a minimum of two (2) weeks in advance of any shutdown.
- D. Provide temporary facilities as necessary to secure all existing electrical systems. Remove temporary facilities when permanent work has been placed into service.

- E. Fully coordinate and schedule with Architect, Owner and all Other Trades, all work involving limited shut-downs and interruption of existing electrical systems and services. Coordinate and schedule all other required system shutdowns with Architect, Owner and all Other Trades a minimum of two (2) weeks in advance of the shutdown.
- F. Shutdowns of existing services required for the installation of new systems or alter existing, shall be performed during hours when the affected areas of the facility are not being used by the Owner or during the scheduled partial construction shut-down of the involved areas. All costs for performing this work shall be borne by each Contractor without “extra” costs to the Owner.
- G. Existing systems and services that are temporarily disconnected, but are to remain in use, shall be permanently reconnected and returned to their proper operation in a timely manner.
- H. Fully coordinate with Architect, Owner and Other Trades to insure complete continuity of all systems and services.

1.23 ALTERATIONS TO EXISTING SYSTEMS

- A. It is the intent that all existing conduit, light fixtures, electrical equipment, devices and other equipment, devices and materials that interfere with the altered existing building arrangements and proposed new systems, be removed, relocated, rerouted and abandoned. The Contract Drawings, generally, indicate locations of major items of existing equipment.
- B. Prior to bid, Contractor must survey and verify locations and physical sizes of all existing items and determine whether relocation or rerouting will be required. If relocation or rerouting is required, including all that of all related accessories, specialties and other minor items, each Contractor shall include all necessary work as part of his contract and it shall be done at NO additional cost to the Owner.
- C. Should a Contractor require removal, relocation or rerouting of another Trade’s work that is not indicated on Contract Drawings, the Contractor requiring such work shall be responsible for that work and pay all required costs.
- D. Work shall be performed by mechanics skilled in particular trade involved, that is, plumbing work shall be performed by plumbers, electrical work shall be performed by electricians, mechanical work shall be performed by steam fitters and sheet metal mechanics, etc.
- E. Existing concealed and exposed electrical equipment, devices, materials, wiring and conduit and appurtenances that are now abandoned under existing arrangements shall be removed.
- F. Existing exposed and concealed equipment, devices, wiring and conduit, materials and appurtenances that will become abandoned due to new work, shall be removed.
- G. Existing concealed equipment, devices, wiring and conduit, materials and appurtenances that are to remain, but become exposed due to new work, shall be relocated and reconnected as directed by Architect, Engineer or Owner.

- H. Unless indicated otherwise, all electrical systems, wiring and conduit, equipment, devices, etc., that are identified to be permanently deactivated and disconnected, (including those “buried” within structure, such as within walls and under floors on grade), must be demolished and removed from the site by the Contractor.
- I. Where excavation for new work is disturbing support of existing underground Mechanical, Plumbing, Electrical and Other Trades materials, equipment and structures, provide new and suitable concrete, steel and brick supports as required. Review supports and supporting methods with Architect and Engineer before beginning work.
- J. Removed equipment and materials not desired by Owner shall become property of Contractor and shall be promptly removed from site. Equipment and materials desired by Owner shall be delivered by Contractor to an on-site storage location designated by Owner. Prior to demolition, review and coordinate with Architect, Engineer and Owner, the disposition of all equipment and materials to be removed.
- K. All work involving alterations to existing systems, equipment and materials shall be reviewed with Architect and Engineer before beginning work.

#### 1.24 ACCESS PANELS

- A. Furnish access panels required for access to junction boxes and any other electrical specialties requiring maintenance and service in ceilings, walls or floors.
- B. Panels shall have 16-gauge steel frame and a 14-gauge flush steel door having concealed hinge and screwdriver operated cam locks, all with factory prime finish.
- C. Panels shall be of sizes required for access to specialties, but in no case shall they be less than 18”x18”.
- D. Coordinate panel locations and sizes with Other Trades. Prior to installation, submit and review panel locations and sizes with Architect and Engineer.
- E. Panels shall be furnished to suit the surface into which installed.

#### 1.25 IDENTIFICATION

- A. Identify all concealed and exposed equipment, conduit and wiring with legibly stenciled lettering, applied, after finish painting where applicable, in color to contrast with basic color.
- B. All major electrical equipment, including switchboards, panels, disconnect switches, etc., shall be identified by the identification numbers shown on drawings, or by the Owner’s numbering system, if so directed. Lettering shall be minimum 1-inch high. Do not stencil surfaces exposed in public areas.
- C. Label associated circuit number and panel number on covers of all electrical disconnect switches, receptacles and junction boxes.

- D. Submit list of titles and data for Engineer's and Architect's review before beginning work.

1.26 OPERATING AND MAINTENANCE MANUALS

- A. At the completion of the project, deliver to the Architect for transmittal to the Owner, three (3) complete sets of instruction manuals, for each piece of electrical equipment, device, panels, switchboard, fixture, device, etc., and all specialty items.
- B. Each instruction manual shall consist of data supplied by the manufacturer giving complete information on the following:
  - 1. Installation procedure.
  - 2. Operating instructions.
  - 3. Maintenance instructions.
  - 4. Detailed parts lists.
  - 5. Recommended spare parts.
  - 6. Address and telephone numbers of nearest supply house.
  - 7. Address and telephone number of manufacturer's representative.
- C. Each set of instruction manuals shall be bound in an 8 ½" x 11" hard cover, 3-ring binder. The binders shall be assembled using tabs to separate each equipment item. An index sheet shall be inserted in the front of the binder, listing every item included with the manual.

1.27 OPERATING AND MAINTENANCE INSTRUCTION

- A. After all tests, startups, adjustments and certifications have been successfully made, instruct the representatives of the Owner in all details of the operations of all electrical equipment, devices, systems and appurtenances. Provide competent instruction for a minimum of one (1) day, which shall not include time required for testing, adjusting, startup and certification.
- B. Instruction in all details of operation of all equipment shall be recorded by means of video taping.

1.28 ELECTRICAL EQUIPMENT

- A. Contractor shall furnish all equipment complete with motor, controllers, capacitor, starting equipment and control transformers, except where specifically listed otherwise on the Contract Drawings.
- B. Unless otherwise noted, electric motors shall be open, drip proof, induction type rated for continuous duty at 15% overload with 40 degrees C. rise. Single phase motors shall be capacitor start, induction run.
- C. Manufacturer's certified technician shall check the electrical equipment and systems for their conformance to the specifications, for proper installation and shall run the system in all modes of operation to ascertain that they will function properly. All necessary adjustment shall be made to insure trouble-free service.

- D. After completion of startup procedure, Manufacturer shall certify, in writing, that the electrical equipment and systems is installed in accordance with his requirements and is operating in accordance with the intent of the specifications. Final payment will not be made until this requirement is completed.

## 1.22 FOUNDATIONS AND SUPPORTS

- A. Unless indicated otherwise, provide all concrete foundations and pads, structural steel and concrete supports required for equipment and materials provided under this Division. Provide isolation mountings for noisy or vibrating equipment. Submit shop drawings of foundation and pads for approval.
- B. All floor and grade mounted electrical, mechanical and plumbing equipment shall be erected on minimum 4" high concrete pads over the complete floor area of the equipment, unless noted otherwise. All mechanical and electrical equipment and devices must be installed, at minimum, at or above the New Jersey adopted flood plain elevation for the project site.
- C. Concrete work, foundations, pads, shall include anchor bolts, and shall have sufficient size and mass to suit supported equipment. Foundations and pads shall be properly doweled in with the floor construction and shall have sloped bevels on all horizontal and vertical edges. Concrete shall be lightweight mix having a comprehensive strength of 5,000 PSI minimum at twenty-eight days. Placing of reinforcing steel and concrete shall be done according to recommendations of the American Concrete Institute and Concrete Reinforcing Steel Institute, and all materials shall conform to American Society for Testing and Materials Specifications (ASTM) applicable to this work.
- D. Structural steel supports shall include all beams, plates, angles, bearing plates and structural shapes of every description required to complete the steel work. Manual of construction by American Institute of Steel construction (AISC) shall be followed in design and construction. All structural steel shall conform to ASTM Specification A-36. All structural steel members shall have a shop coat of rust inhibitive paint.

## PART 2 - PRODUCTS

### 2.1 SELECTION OF MATERIALS AND EQUIPMENT

- A. Specified materials, equipment, devices, systems, etc., shall be selected within the operating capacities indicated on contract documents. In the absence of specific criteria, conservative commercial practice, in the opinion of the Engineer and Architect, will apply.
- B. All materials and equipment shall comply with all applicable standards and requirements of:
  - 1. National Electrical Manufacturers Association (NEMA).
  - 2. American National Standards Institution (ANSI).
  - 3. Underwriters laboratories, Inc. (UL).
  - 4. Institute of Electrical and Electronics Engineers (IEEE).



- C. Items of a similar application shall be of the same manufacturer.
- D. The label of listing by Underwriters Laboratories, Inc. shall appear on all materials and equipment for which standards have been established by that agency.
- E. Where local or other authorities have jurisdiction, have established label or approval requirements, furnish all materials and equipment with either the required labels affixed, or the necessary written approval.
- F. The equipment plans are designed around standard products of one or more of the manufacture's listed as being acceptable for the product involved. Where one or more manufacturer is listed as being acceptable for a product, each manufacturer listed for that product shall be considered as "equal" and acceptable.
- G. All materials to be free of asbestos and urea formaldehyde.

### PART 3 - EXECUTION

#### 3.1 SLEEVES AND ELECTRICAL PENETRATIONS

- A. Cutting or drilling in any structural member is prohibited without written approval of the Architect and Engineer.
- B. Location of Sleeves: Wherever conduits pass through concrete walls or suspended slabs, furnish and install sleeves of ample size to permit installation of conduit. Sleeves shall be installed prior to pouring of concrete and shall have ends flush with the wall or extend two (2") inches above floor surfaces. Verify location with the Architect and Engineer.
- C. Where sleeves pierce unrated slabs or walls separating machine room areas from or other quiet areas, the sleeves shall be packed with fiberglass insulation to prevent noise transfer.
- D. Where raceways for electrical power, telephone or signal cables penetrate FIRE RATED walls, floors, partitions or slabs, fill and seal all such penetrations with a one-part intumescent caulk/putty sealant creating a fire stop equal to or exceeding fire rating of partition being penetrated. Fire sealant shall have ability to prevent spread of flame, smoke and water throughout the penetration and shall pass three (3) hour test, UL Test ASTM E814 and UL 1479. Fire sealant shall be 3M CP25 caulk and putty 303, installed in accordance with manufacturer's written instructions. Avoid all voids when arranging cables in penetration by using non-flammable fiber damming material wedged between cables.
- E. Type of sleeves: Steel pipe or galvanized sheet metal is acceptable.
- F. Finish Around Sleeves: Rough edges shall be finished smooth. Space between conduit and sleeves, where conduit passes through exterior walls and walls of existing structures shall be sealed to permit movement of conduit but prevent entrance of water.

- G. Space between conduit and sleeves, where conduit passes through interior walls and slabs, shall be sealed with an approved sealing compound that is fireproof and will remain pliable.
- H. Where faulty installation of sleeves, etc. occurs, the Electrical Contractor shall make all necessary changes and repairs, at no cost to the Owner, to the satisfaction of the Architect, Engineer and Owner.
- I. Where openings requested by the Electrical Contractor are left unused in floors/walls under other contracts, such openings shall be filled in to match the adjoining work by Electrical Contractor.
- J. All additional openings required and not requested while the work proceeds shall be cut as a part of the work of the appropriate trade and be paid for by the Electrical Contractor.
- K. Contractor shall patch, seal and fire safe all existing and new wire and conduit penetrations of all corridor walls.

### 3.2 CUTTING AND PATCHING

- A. Prior to performing work, the Electrical Contractor shall verify all openings indicated on the drawings. Should the work of this Division require it, Contractor shall furnish new instructions as to his requirements for these openings, subject to the Architect's and Engineer's approval. All additional cutting, patching and reinforcement of the construction of the building, (subject to the Architect's and Engineer's approval), shall be performed under the section of the specifications covering the particular materials, but the cost shall be an obligation of this section of the work.
- B. The Contractor shall provide and pay for the addition of all structural steel required for the support or bracing of all work furnished and installed.
- C. Subcontractors shall furnish Prime Contractor information such as size, position and arrangement of materials and equipment, so that new openings in floors, walls, roofs, beams, ceilings can be properly provided and coordinated as construction progresses.
- D. Cutting and patching for new equipment and materials in existing construction will be provided by Contractor.
- E. Cutting shall be coordinated with Other Trades, done neatly and to minimize damage to all construction. Provide lintels where required.
- F. Cutting and patching shall be done by Trades normally specializing in installation of materials being patched. Paint all patched surfaces to match existing.
- G. Review all cutting and patching with Architect, Engineer and Owner before beginning work.
- H. Cutting openings in existing concrete slabs and walls shall be done neatly using core boring machines.

3.3 CLEANING AND PAINTING

- A. Conduit and equipment to be Installed: Clean conduit and equipment thoroughly to remove plaster, splattered paint, cement and dirt, on both exterior and interior.
- B. Conduit and Equipment to be Painted: Clean all conduit and equipment exposed to view in completed structure by removing plaster and dirt. Remove grease, oil and similar material from conduit and equipment by wiping with clean rags and suitable solvents in preparation for paint.
- C. All items with Factory Finish: Remove cement, plaster, grease and oil, and leave all surfaces, including cracks and corners, clean and polished. Touch up any scratched or bare spots to match finish.
- D. All electrical apparatus and equipment in equipment rooms shall be provided with a factory finish cost. All panels in public spaces, corridors, etc., shall be provided with a factory prime coat.
- E. Site Cleaning: Remove from site all packing cartons, scrap materials, and other rubbish relating to electrical installation.

3.4 TESTS

- A. Prior to energizing any motors, measure the service voltage for phase balance, and report immediately to the Engineer and Architect if unbalance exceeds one (1%) percent from mean.
- B. Upon completion of the work and adjustment of all equipment, conduct an operating test for approval at such time as the Engineer or Architect directs. Conduct the test in the presence of an authorized representative of the Engineer or Architect. Demonstrate all systems and equipment to operate, in accordance with all requirements of the contract documents, and to be free from all electrical and mechanical defects.
- C. All systems shall be free from short circuits and grounds, and shall show insulation between phase conductors and ground not less than the requirements of the National Electrical Code. Test all circuits for proper neutral connections.
- D. Complete all tests prior to final inspection of the project.
- E. Preliminary Operations: Should the Owner require any portion of the systems or equipment to be operated prior to the final schedule dates for completion and acceptance of the work, the Contractor shall consent. Such operation shall be under the direct supervision of, and at the expense of the Contractor, and shall not be construed as an acceptance of any of the work by the Owner.

END OF SECTION 16010

SECTION 16051 - COMMON WORK RESULTS FOR ELECTRICAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
  - 1. Electrical equipment coordination and installation.
  - 2. Sleeves for raceways and cables.
  - 3. Sleeve seals.
  - 4. Grout.
  - 5. Common electrical installation requirements.

1.3 DEFINITIONS

- A. EPDM: Ethylene-propylene-diene terpolymer rubber.
- B. NBR: Acrylonitrile-butadiene rubber.

1.4 SUBMITTALS

- A. Product Data: For sleeve seals.

1.5 COORDINATION

- A. Coordinate arrangement, mounting, and support of electrical equipment:
  - 1. To allow maximum possible headroom unless specific mounting heights that reduce headroom are indicated.
  - 2. To provide for ease of disconnecting the equipment with minimum interference to other installations.
  - 3. To allow right of way for piping and conduit installed at required slope.
  - 4. Confirm connecting raceways, cables, wireways, cable trays, and busways will be clear of obstructions and of the working and access space of other equipment.

- B. Coordinate installation of required supporting devices and set sleeves in cast-in-place concrete, masonry walls, and other structural components as they are constructed.
- C. Coordinate location of access panels and doors for electrical items that are behind finished surfaces or otherwise concealed.
- D. Coordinate sleeve selection and application with selection and application of firestopping.

## PART 2 - PRODUCTS

### 2.1 SLEEVES FOR RACEWAYS AND CABLES

- A. Steel Pipe Sleeves: ASTM A 53/A 53M, Type E, Grade B, Schedule 40, galvanized steel, plain ends.
- B. Cast-Iron Pipe Sleeves: Cast or fabricated "wall pipe," equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop, unless otherwise indicated.
- C. Sleeves for Rectangular Openings: Galvanized sheet steel.
  - 1. Minimum Metal Thickness:
    - a. For sleeve cross-section rectangle perimeter less than 50 inches and no side more than 16 inches, thickness shall be 0.052 inch.
    - b. For sleeve cross-section rectangle perimeter equal to, or more than, 50 inches and 1 or more sides equal to, or more than, 16 inches, thickness shall be 0.138 inch.

### 2.2 SLEEVE SEALS

- A. Description: Modular sealing device, designed for field assembly, to fill annular space between sleeve and raceway or cable.
  - 1. Sealing Elements: EPDM or NBR interlocking links shaped to fit surface of cable or conduit. Include type and number required for material and size of raceway or cable.
  - 2. Pressure Plates: Stainless Steel: Include two for each sealing element.
  - 3. Connecting Bolts and Nuts: Stainless steel of length required to secure pressure plates to sealing elements. Include one for each sealing element.

2.3 GROUT

- A. Nonmetallic, Shrinkage-Resistant Grout: ASTM C 1107, factory-packaged, nonmetallic aggregate grout, noncorrosive, nonstaining, mixed with water to consistency suitable for application and a 30-minute working time.

PART 3 - EXECUTION

3.1 COMMON REQUIREMENTS FOR ELECTRICAL INSTALLATION

- A. Comply with NECA 1.
- B. Measure indicated mounting heights to bottom of unit for suspended items and to center of unit for wall-mounting items.
- C. Headroom Maintenance: If mounting heights or other location criteria are not indicated, arrange and install components and equipment to provide maximum possible headroom consistent with these requirements.
- D. Equipment: Install to facilitate service, maintenance, and repair or replacement of components of both electrical equipment and other nearby installations. Connect in such a way as to facilitate future disconnecting with minimum interference with other items in the vicinity.
- E. Right of Way: Give to piping systems installed at a required slope.

3.2 SLEEVE INSTALLATION FOR ELECTRICAL PENETRATIONS

- A. Electrical penetrations occur when raceways, cables, wireways, cable trays, or busways penetrate concrete slabs, concrete or masonry walls, or fire-rated floor and wall assemblies.
- B. Concrete Slabs and Walls: Install sleeves for penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection of slabs and walls.
- C. Use pipe sleeves unless penetration arrangement requires rectangular sleeved opening.
- D. Fire-Rated Assemblies: Install sleeves for penetrations of fire-rated floor and wall assemblies unless openings compatible with firestop system used are fabricated during construction of floor or wall.
- E. Cut sleeves to length for mounting flush with both surfaces of walls.
- F. Extend sleeves installed in floors 2-inches above finished floor level.

- G. Size pipe sleeves to provide 1/4" annular clear space between sleeve and raceway or cable, unless indicated otherwise.
- H. Seal space outside of sleeves with grout for penetrations of concrete and masonry
  - 1. Promptly pack grout solidly between sleeve and wall so no voids remain. Tool exposed surfaces smooth; protect grout while curing.
- I. Interior Penetrations of Non-Fire-Rated Walls and Floors: Seal annular space between sleeve and raceway or cable, using joint sealant appropriate for size, depth, and location of joint.
- J. Fire-Rated-Assembly Penetrations: Maintain indicated fire rating of walls, partitions, ceilings, and floors at raceway and cable penetrations. Install sleeves and seal raceway and cable penetration sleeves with firestop materials.
- K. Roof-Penetration Sleeves: Seal penetration of individual raceways and cables with flexible boot-type flashing units applied in coordination with roofing work.
- L. Aboveground, Exterior-Wall Penetrations: Seal penetrations using cast-iron pipe sleeves and mechanical sleeve seals. Select sleeve size to allow for 1-inch annular clear space between pipe and sleeve for installing mechanical sleeve seals.
- M. Underground, Exterior-Wall Penetrations: Install cast-iron pipe sleeves. Size sleeves to allow for 1-inch annular clear space between raceway or cable and sleeve for installing mechanical sleeve seals.

### 3.3 SLEEVE-SEAL INSTALLATION

- A. Install to seal exterior wall penetrations.
- B. Use type and number of sealing elements recommended by manufacturer for raceway or cable material and size. Position raceway or cable in center of sleeve. Assemble mechanical sleeve seals and install in annular space between raceway or cable and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

### 3.4 FIRESTOPPING

- A. Apply firestopping to penetrations of fire-rated floor and wall assemblies for electrical installations to restore original fire-resistance rating of assembly.

END OF SECTION 16051

# **CONTRACT DOCUMENTS**



**SAMPLE CONTRACT**

**THIS AGREEMENT** made this \_\_\_\_\_ day of \_\_\_\_\_, 20xx, between the COUNTY OF ATLANTIC a body corporate and politic of the State of New Jersey with offices located at 1333 Atlantic Avenue, Atlantic City, NJ 08401 (the “County” hereinafter), and \_\_\_\_\_ with offices located at \_\_\_\_\_, hereinafter referred to as “Contractor”.

**WITNESSETH:**

**WHEREAS**, the County desires to engage the services of the Contractor to provide all goods and services necessary to perform the Work described in more detail in the County’s Invitation to Bid/RFP (Exhibit A) attached herewith; and

**WHEREAS**, the Contractor has represented that it is qualified by training and experience to perform the required services in the manner and on the terms and conditions set forth herein.

**WHEREAS**, execution of this contract has been authorized by the Board of Chosen Freeholders of Atlantic County pursuant to Atlantic County Resolution # \_\_\_\_\_ on \_\_\_\_\_

**NOW, THEREFORE**, in consideration of the mutual covenants and promises contained herein, the parties hereto agree as follows:

**1. SCOPE OF SERVICES AND CONTRACT DOCUMENTS.**

The Contractor shall provide to the County the following services:

**2. CONSIDERATION.**

A. In accordance with the authorization for this Contract granted by Atlantic County Board of Chosen Freeholders Resolution # \_\_\_\_\_ adopted on \_\_\_\_\_, the Contractor shall be compensated in an amount not to exceed \$ \_\_\_\_\_ in full consideration for performance of the Project, in accordance with the requirements of the Contract Documents.

B. The time and rate of compensation shall be as set forth in the County Invitation to Bid /RFP (Exhibit A) and the Contractor’s Proposal, (Exhibit B), for all materials and services satisfactorily provided hereunder, subject to all of the terms, conditions and requirements of the Contract Documents. The Price stated in the Contract Documents constitutes the total compensation (subject to adjustments explicitly authorized by the Contract Documents) payable to Contractor for performing all of the duties, responsibilities and obligations assigned to or undertaken by Contractor and shall be performed at the Contractor’s expense, without change in the Contract Price.

C. Even if the Agreement calls for the provision of services on an hourly rate or other unit price basis or if the Agreement allows for payment of specified reimbursable expenses, Contractor understands that Contractor shall not be entitled to payment for any level of services rendered in excess of the maximum compensation specified in 2.A unless additional compensation is expressly authorized by the County.

D. Any changes to the maximum compensation or scope of work specified or otherwise required by the Contract Documents shall only be effective if such additional compensation or modification is expressly authorized by an amendatory resolution duly adopted by the Atlantic County Board of Chosen Freeholders.

E. Any claim by Contractor for an adjustment in the Contract Price shall be based on written notice delivered by Contractor promptly (but in no event later than seven days) after the start of the occurrence or event giving rise to the claim and stating the general nature of the claim. Contractor shall provide complete supporting data with respect to the claim, including all claims for equitable adjustment, not later than thirty (30) days after the start of such occurrence. All claims for adjustment in the Contract Price shall be determined by the County, in the event that the County and Contractor cannot otherwise agree on the amount involved. No claim of any kind for an adjustment in the Contract Price will be valid if it is not submitted in accordance with this procedure, and Contractor waives all rights to recovery for any claim as to which this procedure is not followed.

F. It is the exclusive right of the County to determine that services have been performed in a proper and satisfactory manner in accordance with the terms and conditions set forth herein prior to approval and payment of invoice submitted by Contractor.

G. Payment shall be made only upon submission by the Contractor of the required executed standard County invoice, a bill on Contractor's letterhead and any other documents deemed necessary by the County.

H. Contractor agrees to maintain financial records, books and documents plus any evidence necessary to reflect all direct and indirect costs incurred during this Agreement in an auditable format. Contractor agrees to keep complete and accurate records with respect to the computation of all billing, including receipts for any reimbursable expenses and time records for all persons billed on an hourly rate basis. The Contractor also agrees to submit all documents and records necessary to assure compliance and completion of this Agreement. Contractor agrees that all financial records required to be kept be made available for inspection during normal business hours by representatives of the County. Said records shall be kept for a minimum of five (5) years after expiration of the Contract Term.

### **3. TERM.**

A. Upon its authorization and execution this Agreement shall be effective for the term commencing \_\_\_\_\_ to \_\_\_\_\_.

**B. The Contractor acknowledges it shall complete the performance of services under this Agreement in accordance with the time limits specified in the Contract Documents.**

C. The County Executive or his designee may extend the time for completion specified by Article III (B). Such extensions shall only be effective if in writing and shall not extend the Agreement term beyond the term specified in the authorizing resolution. In the event that the time for completion is extended, all of the original terms and conditions will remain in effect for the extended period.

D. The County Executive may terminate this Agreement at any time, as a consequence of a default by the Contractor, or, to the extent permitted or required by law, for the convenience of the County, by giving written Notice of Termination sent to the Contractor in the address set forth in Article IX. In the event of termination of this Agreement, the Contractor shall furnish to the County such reports or documents that the County may require based upon work completed under the provisions of this Agreement. The Contractor shall be compensated in the amount determined by the County Executive to be commensurate with the work performed at the time of termination and upon acceptance of said payment Contractor shall have no further rights against the County.

### **4. TIME OF THE ESSENCE.**

All time limits for the performance and completion of Work, as stated in the Contract Documents, are of the essence of this Contract. Expeditious performance and completion of this Contract are essential for the express purpose of enabling the County to maintain in public service an important transportation facility, in accordance with a predetermined program of funding and construction. The Contractor shall begin the Work promptly on the date of commencement and he shall carry the Work forward expeditiously with adequate forces and shall achieve completion at the earliest possible date within the Contract Time.

## **5. CONTRACTOR'S WORKFORCE.**

The Contractor hereby agrees that it shall provide the necessary workforce to accomplish the Project as set forth in the Contract Documents, and if necessary, to increase said workforce to complete the Project within the time schedule and performance requirements set forth in the Contract Documents.. The Contractor shall furnish all materials, tools, equipment, transportation, supervision, and perform all labor and services necessary and incidental to the satisfactory completion of the Work in a proper workmanlike manner within the time stipulated as set forth in the specifications.

## **6. CONTRACT DOCUMENTS.**

The County Invitation to Bid/RFP (Exhibit A) and the Contractor's Proposal (Exhibit B) along with all attachments herewith are incorporated by reference and comprise the "Contract Documents". In the event of any dispute or inconsistency, the documents shall have the following priority:

A. The requirements, terms and conditions set forth in the Invitation to Bid/RFP, including the terms of this Contract, including Appendix I and II attached herewith.

B. The Contractor's Proposal (Exhibit B).

In addition to the Exhibits and submissions listed above, the Appendices to the Contract Documents shall additionally constitute integral parts of this Contract and are hereby incorporated herein in their entirety:

## **7. RELIANCE UPON DRAWINGS, PLANS, AND OTHER INFORMATION PROVIDED BY THE COUNTY.**

All information provided by the County to the Contractor is only offered to show conditions that are believed to exist, but it is not intended to be inferred that the conditions as shown thereon constitute a true and accurate representation by or on behalf of the County that such conditions actually exist. The Contractor shall be solely responsible to inspect the job site prior to commencement of the Work, and shall accept full responsibility for any loss sustained by it as a result of any variances between the conditions as shown in drawings and plans, if any, and any other information provided by the County to the Contractor and the actual conditions revealed during the progress of the Work or otherwise.

## **8. PERFORMANCE BOND.**

Upon execution of this agreement, and in no event later than 20 days after award of a contract by the County, the Contractor shall provide a Performance Bond in an amount equal to the proposed costs of all materials and installation work required to perform the Work, as set forth in the Contract Documents, in a form acceptable to the County, by company that is duly authorized to issue such obligations in New Jersey. The obligations imposed upon the Contractor by this contract shall be obligations in addition to all other terms, covenants and conditions of said Bond to the same effect as though they had been incorporated in said Bond. This Bond shall remain in effect at least until one year after the date when final payment becomes due, except as provided otherwise by Laws or Regulations. All Bonds signed by an agent must be accompanied by appropriate power of attorney and surety disclosure statements

If the surety on any Bond furnished by Contractor is declared a bankrupt or becomes insolvent or its right to do business is terminated or suspended in the State of New Jersey or otherwise ceases to meet the requirements of the Contract Documents, Contractor shall within ten days thereafter substitute another Bond and surety, both of which must be acceptable to the County.

## **9. WARRANTIES**

Without limitation upon any other warranty, representation warranty or duty imposed upon or made by the Contractor in the Contract Documents, the Contract hereby warrants:

A. that this Contractor has not been solicited or secured, directly or indirectly, in a manner contrary to the laws of the State of New Jersey and that said laws have not been violated and shall not be violated as they relate to the procurement or the performance of this Contract by any conduct, including the paying or giving of any fee, commission, compensation, gift, gratuity or consideration of any kind, directly or indirectly, to any County, employee, officer or officials.

B. that the Contractor, for itself and its subcontractors, is qualified by training and experience to perform the services in accordance with all of the terms, conditions and requirements of the Contract Documents .

C. that the Contractor is ready, willing and able to perform all services in the timeframe and as required by this Contract, and that he and/or his subcontractors performing the work presently hold in good standing any and all necessary licenses for the lawful performance of the Project within the State of New Jersey.

## **10. WARRANTY AGAINST DEFECTS.**

In addition to any other warranty, the Contractor further agrees to extend to the County a one year warranty against defects in material and workmanship of the materials and equipment herein provided to the County, which shall commence upon expiration of the Contact Term.

## **11. CONTINUITY OF COUNTY OPERATIONS AND SERVICES.**

The Contractor shall perform all of its work required by the Contract Documents in a manner that shall not interfere with or disrupt routine operations and services that occur or are provided at County Facilities, and shall conduct is work in a manner that shall preserve continuity of all County operations and services that may be affected by the Contractor's operations, unless such interference is approved by the County, in advance and in writing in accordance with the Contract Documents.

## **12. COMPLETION AND ACCEPTANCE OF INSTALLATION WORK.**

The Work to be performed by the Contractor shall be deemed complete when all of the following have been satisfied by the Contractor to the County:

A. The Work has been satisfactorily completed in all respects as required by the Contract Documents;

B. The Contractor has, to the County's satisfaction, executed and delivered to the County or its designated representative all documents, permits, certificates, proofs of compliance and any other documents the County deems mandatory to assure compliance with this RFP.

## **13. DEFECTIVE OR UNAUTHORIZED WORK.**

All Work and materials which do not conform to the requirements of the Contract Documents, whether the result of poor workmanship, use of defective materials, damage through carelessness or any other cause, shall be considered as Defective Work.

**14. REMOVAL AND CORRECTION OF DEFECTIVE OR UNAUTHORIZED WORK.** Any

Defective or Unauthorized Work performed by the Contractor, regardless of whether observed before or after completion of the Work and whether or not fabricated, installed or completed, shall be removed immediately and replaced by the Contractor with Work and materials which shall conform to the specifications, or shall be otherwise corrected and remedied in an acceptable manner authorized by the County or its designee. The Contractor shall bear all costs of correcting, removing or replacing such defective or unauthorized Work, including compensation to the County for the County's additional costs made necessary thereby.

If, within one (1) year after the date of completion of the Work or designated portion thereof, or within such longer period of time as may be prescribed by law or by the terms of any applicable warranty required by the Contract Documents, any of the Work is found to be defective or not in accordance with the Contract Documents, the Contractor shall correct it promptly after receipt of a written notice from the County to do so unless the County has previously given the Contractor a specific written acceptance of such defective or non-conforming work. This obligation shall survive termination or expiration of the Contract.

Upon failure of the Contractor to immediately correct, remove or replace defective, non-conforming or other unauthorized work, or to immediately comply with any order of the County made under the provisions of this Section, the County shall have authority to cause such defective, non-conforming or other unauthorized work to be corrected or removed and replaced, and the costs thereof, as well as those incurred in storing any rejected materials, shall be deducted from any monies due or to become due the Contractor. If the payments then or thereafter due the Contractor are not sufficient to cover such costs, the Contractor shall pay the different to the County. The County reserves the right, should Defective or Unauthorized Work or materials used by or on the part of the Contractor be discovered, either before or after the Project has been accepted, or even after Final Payment has been made, to claim and recover by process of law such sums as may be sufficient to correct, remove or replace the Defective or Unauthorized Work or materials.

**15. PUBLIC CONVENIENCE AND SAFETY.**

The safety, protection and convenience of the public and adjacent residents are of primary importance and shall be provided for by the Contractor in an adequate and satisfactory manner.

A. Precautions shall be exercised at all times for the protection of persons and property. The safety provisions of applicable laws, rules and regulations, building and construction codes, shall be observed. Machinery, equipment and other hazards of any character shall be guarded in accordance with the safety provisions of the current "Manual of Accident Prevention in Construction," published by the Associated General Contractors of America, to the extent that such provisions are not inconsistent with applicable Federal, State and local laws and regulations.

B. If any operation, practice or condition during the course of the Work is unsafe or is deemed by the County to be unsafe, the Contractor shall immediately take corrective action. Where any operation, practice or condition endangers persons or property, it shall be immediately discontinued by the Contractor and adequate remedial action taken before the affected part of the Work is resumed.

**16. COUNTY NOT RESPONSIBLE FOR CONTROL OF CONTRACTORS, FOR CONSTRUCTION MEANS AND METHODS.**

The County shall not be responsible for and shall not have control or charge of construction means, methods, techniques, sequences or procedures, or the safety precautions and programs in connection with the Work, and the County shall not be responsible for the Contractor's failure to carry out the Work in accordance with the

Contract Documents. Further, the County shall not be responsible in any way for the acts or omissions of the Contractor, and any Subcontractors, or any of their agents or employees, or any other persons performing any of the Work.

### **17. INDEPENDENT CONTRACTOR.**

The Contractor shall be deemed and considered an Independent Contractor in respect to the Work covered by this Contract, and shall assume all responsibility and expense for the Work, for risks and casualties of every description arising out of erection equipment, and shall bear the name and seal of a registered Professional Engineer responsible for the design thereof.

### **18. CONTRACTOR'S DUTY TO PERFORM.**

The Contractor's obligation to perform and complete the Work shall be absolute. None of the following will constitute an acceptance of Work or any portion thereof that is not in accordance with the Contract Documents, or as a waiver or release of Contractor's obligation to perform the Work and provide Services in accordance with the Contract Documents: observations made by the County, recommendation of any progress or final payment by the County, any determination that work is substantially completed or any payment by County to Contractor under the Contract Documents; any Use of or reliance upon the Work or Services any part thereof by the County, any acceptance by the County any failure to do so, any review and approval of a Shop Drawing, sample, submittal, substitution, or the issuance of a notice of acceptability, any inspection, test or approval by others, or any correction of defective Work by the County, any limitations of any Subcontractor's or Supplier's warranty, or similar actions or omissions by the County.

### **19. INDEMNIFICATION.**

A. Contractor agrees to protect, defend, indemnify and save harmless the County and its officers, directors, employees, agents, and other Proposers of each and any of them from and against all claims, costs, losses and damages (including but not limited to all fees and charges of engineers, architects, attorneys and other professionals and all court or arbitration or other dispute resolution costs) arising out of resulting from any and all losses, claims, actions, costs, expenses, judgment, subrogation or other expenses by reason of any real or alleged injury or damage to the person or property of others arising out of or incidental to the performance of the terms of this contract.

B. If it becomes necessary for the Contractor, either as principal or by agent or employee, to enter upon the premises or property of the County, in order to perform any portion of the Work, the Contractor hereby covenants and agrees to take, use, provide and make all proper, necessary and sufficient precautions, safeguards and protections against the occurrence of happenings of any accidents, injuries, damages or hurt to any person or property during the progress of the work herein covered, and to be responsible for, and to the indemnify and save harmless the County from the payment of all sums of money by reason of all, or any, such accidents, injuries, damages or claims that may happen or occur upon or about such Work and all fines, penalties and loss incurred for or by reason of the violation of any municipal or County ordinance, regulations, or the laws of the State, or the United States, while the said Work is in progress.

C. The Contractor shall indemnify and save harmless the County against any and all claims for royalty, patent infringements or suits for information thereon which may be involved in the manufacture or use of the item to be furnished herein.

D. All representations, indemnifications, warranties and guarantees made in, required by or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract

Documents, will survive final payment, completion and acceptance of the Work and Services and termination or completion of this Contract.

## **20. ASSIGNMENT OR SUBLET OF CONTRACT.**

The Contractor shall be the party solely and fully responsible to the County for the performance of all requirements of the Contract documents, at all times and in all respects. The Contractor shall not sell, transfer, assign, subcontract or otherwise dispose of his obligations to the County, or of any payment or payments which may accrue hereunder, without first securing written approval of the County, which shall be based upon the Contractor's written request for such approval accompanied by the Contractor's submission of proof, to the County's satisfaction, that the proposed assignment, subcontract or other transfer shall not result in an impairment or reduction in services provided to the County, and that the assignee, purchaser, successor or subcontractor meets or exceeds all requirements and qualifications set forth in the Contract Documents. No assignment or subcontract will be effective or deemed permitted without the prior written consent of the County as set forth herein. If a subcontract or other assignment is authorized by the County, the assignee or subcontractor shall enter into an agreement affirming that it shall be bound by all of the terms, conditions and requirements set forth in the Contract Documents.

## **21. DEFAULT.**

Default by the Contractor shall include the following:

- A. Failure by the Contractor to begin work under the Contract within the time specified in the Notice to Proceed, or otherwise according to the Contract;
- B. Failure by the contractor to perform the Work with sufficient workmen, equipment or materials to insure completion of the Work in accordance with the Contract;
- C. Violation by the Contractor of any of the conditions or covenants of the Contract, the Documents, or any order of the County authorized therein, and failure to execute the same in good faith or in accordance with the terms thereof;
- D. Unnecessary, unreasonable or negligent delay by the Contractor in performance of the Contract;
- E. Abandonment or discontinuation by the Contractor of performance of the Work without approval of the County, or failure to resume Work which has been discontinued within a reasonable time after notice to do so;
- F. Failure or refusal by the Contractor to remove materials or perform anew any Work rejected as defective or unsatisfactory;
- G. Failure by the Contractor to complete the Work within the time specified in the Contract, or within the extended time as otherwise provided according to the Contract;
- H. Insolvency or bankruptcy of the Contractor, or commission by him of any act of insolvency or bankruptcy;
- I. Failure by the Contractor to protect, repair or make good any damage or injury to property;
- J. Failure by the Contractor, for any cause whatsoever, to carry on the Work in an acceptable manner;
- K. Conviction of any principal of Contractor of any crime under the laws of the State of New Jersey which, if committed by a public official, would disqualify that person from public employment;
- L. Failure of Contractor to pay its subcontractors and/or suppliers, or any governmental authority any sums that are legally due and owing that are related to provision of goods or services related to this project.
- M. Assignment or subcontracting of the work or any part thereof or any monies due hereunder that is not authorized as set forth in this Contract.

- N. If the Contractor becomes in Default and fails, refuses or is otherwise unable to cure such default within a time frame that ensures continuous and uninterrupted provisions of the Work as set forth in the Contract Documents, or shall otherwise fail to comply with any of the terms, conditions, provisions or stipulations of this Contract according to the intent and meaning thereof, then the County shall be permitted to pursue any or all remedies that may be available at law or in equity, including but not limited to an action for specific performance, termination of the contract, or any action for damages arising from the Contractor's default.

Should the County fail to make any payment when such payment is due in accordance with the Contract Documents, or otherwise fail to perform any material duty or obligation imposed upon the County by the Contract Documents, the Contractor shall be permitted to proceed with all remedies that may be available at law or in equity, provided that Contractor shall first provide the County with written notice of the circumstances that are alleged to constitute a default and a 30 day opportunity to cure.

The commencement of one or more remedy shall not preclude the County from pursuit of any other available remedy.

## **21. CONTINUING THE WORK.**

During the pendency of any dispute or disagreement, the Contractor shall carry on the Work and adhere to the progress schedule, and shall not abandon, slow down or terminate its work. Work shall not be delayed or postponed pending resolution of any disputes or disagreements, unless this Agreement is Terminated or such deviation from the Work or Work Schedule is directed by the County.

## **22. LIQUIDATED DAMAGES.**

All amounts set forth in the Contract Documents as liquidated damages shall be a per day charge for every calendar day that the Contractor is in default in completing the Work or any designated portion thereof in excess of the number of days prescribed. The daily sums herein contracted to be paid by the Contractor to the County for any default or delay in the completion of this Work or portions of Services are stipulated to be not a penalty, but rather, liquidated compensation for damages which the County will suffer by reason of such default, loss of use of property, interest on monies borrowed, increased administrative and engineering costs, and other tangible and intangible losses.

The County may deduct the sum of liquidated damages from any monies due or that become due the Contractor under the Contract. If such monies are insufficient, the Contractor or his surety or sureties shall pay to the County any deficiency in such monies within thirty (30) calendar days. Assessment of Liquidated Damages are not intended and shall not be an exclusive, and are in addition to any other rights and remedies provided by law or under this Contract.

## **23. FORCE MAJEURE.**

Neither the County nor Contractor shall be held responsible for delays or default caused by fire, flood, riot, acts of God or war where such cause was beyond, respectively, County's or Contractor's reasonable control. Contractor shall make all reasonable efforts to remove or eliminate such a cause of delay or default and shall, upon the cessation of the cause, diligently pursue performance of its obligations under this Contract. The party asserting that its default or delay is excusable due to a Force Majeure event shall have the burden to demonstrate how such event caused the delay or default, and shall further demonstrate that no reasonable alternatives were available to mitigate or avoid the default or delay.



**24. ADDRESS FOR NOTICE.**

The address given below shall be the address of the representatives parties to which all notices and reports required by this Agreement shall be sent by mail:

To the County of Atlantic:  
County Executive  
1333 Atlantic Avenue  
County Office Building  
Atlantic City, NJ 08401  
Copy to County Counsel  
1333 Atlantic Avenue  
County Office Building  
Atlantic City, NJ 08401

To the Contractor:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Any notice or statement by any party shall be deemed to be sufficiently given when sent by prepaid certified mail return receipt requested, to any party at its address set forth hereinabove. This address shall remain in effect unless another address is substituted by written notice.

**IN WITNESS WHEREOF**, the parties have set their hand and seal effective as of the date forth above.

**ATTEST**

**COUNTY OF ATLANTIC**

\_\_\_\_\_  
SONYA G. HARRIS, Clerk  
Board of Chosen Freeholders

\_\_\_\_\_  
DENNIS LEVINSON  
County Executive  
Approved as to form on behalf of  
Atlantic County

\_\_\_\_\_  
JAMES F. FERGUSON  
County Counsel

**ATTEST:**

**CONTRACTOR:**

\_\_\_\_\_  
Corporate Officer  
applicable

\_\_\_\_\_

## APPENDIX I

### **MANDATORY EQUAL EMPLOYMENT OPPORTUNITY LANGUAGE N.J.S.A. 10:5-31 et seq. (P.L. 1975, C. 127) N.J.A.C. 17:27**

#### **CONSTRUCTION CONTRACTS**

During the performance of this contract, the contractor agrees as follows:

The contractor or subcontractor, where applicable, will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Except with respect to affectional or sexual orientation and gender identity or expression, the contractor will ensure that equal employment opportunity is afforded to such applicants in recruitment and employment, and that employees are treated during employment, without regard to their age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Such equal employment opportunity shall include, but not be limited to the following: employment, up-grading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Public Agency Compliance Officer setting forth provisions of this nondiscrimination clause.

The contractor or subcontractor, where applicable will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex.

The contractor or subcontractor will send to each labor union, with which it has a collective bargaining agreement, a notice, to be provided by the agency contracting officer, advising the labor union or workers' representative of the contractor's commitments under this act and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

The contractor or subcontractor, where applicable, agrees to comply with any regulations promulgated by the Treasurer, pursuant to N.J.S.A. 10:5-31 et seq., as amended and supplemented from time to time and the Americans with Disabilities Act.

When hiring or scheduling workers in each construction trade, the contractor or subcontractor agrees to make good faith efforts to employ minority and women workers in each construction trade consistent with the targeted employment goal prescribed by N.J.A.C. 17:27-7.2; provided, however, that the Division may, in its discretion, exempt a contractor or subcontractor from compliance with the good faith procedures prescribed by the following provisions, A, B and C, as long as the Division is satisfied that the contractor or subcontractor is employing workers provided by a union which provides evidence, in accordance with standards prescribed by the Division, that its percentage of active "card carrying" members who are minority and women workers is equal to or greater than the targeted employment goal established in accordance with N.J.A.C. 17:27-7.2. The contractor or subcontractor agrees that a good faith effort shall include compliance with the following procedures:

(A) If the contractor or subcontractor has a referral agreement or arrangement with a union for a construction trade, the contractor or subcontractor shall, within three business days of the contract award, seek assurances from the union that it will cooperate with the contractor or subcontractor as it fulfills its affirmative

action obligations under this contract and in accordance with the rules promulgated by the Treasurer pursuant to N.J.S.A. 10:5-31 et. seq., as supplemented and amended from time to time and the Americans with Disabilities Act. If the contractor or subcontractor is unable to obtain said assurances from the construction trade union at least five business days prior to the commencement of construction work, the contractor or subcontractor agrees to afford equal employment opportunities minority and women workers directly, consistent with this chapter. If the contractor's or subcontractor's prior experience with a construction trade union, regardless of whether the union has provided said assurances, indicates a significant possibility that the trade union will not refer sufficient minority and women workers consistent with affording equal employment opportunities as specified in this chapter, the contractor or subcontractor agrees to be prepared to provide such opportunities to minority and women workers directly, consistent with this chapter, by complying with the hiring or scheduling procedures prescribed under (B) below; and the contractor or subcontractor further agrees to take said action immediately if it determines that the union is not referring minority and women workers consistent with the equal employment opportunity goals set forth in this chapter.

(B) If good faith efforts to meet targeted employment goals have not or cannot be met for each construction trade by adhering to the procedures of (A) above, or if the contractor does not have a referral agreement or arrangement with a union for a construction trade, the contractor or subcontractor agrees to take the following actions:

(1) To notify the public agency compliance officer, the Division, and minority and women referral organizations listed by the Division pursuant to N.J.A.C. 17:27-5.3, of its workforce needs, and request referral of minority and women workers;

(2) To notify any minority and women workers who have been listed with it as awaiting available vacancies;

(3) Prior to commencement of work, to request that the local construction trade union refer minority and women workers to fill job openings, provided the contractor or subcontractor has a referral agreement or arrangement with a union for the construction trade;

(4) To leave standing requests for additional referral to minority and women workers with the local construction trade union, provided the contractor or subcontractor has a referral agreement or arrangement with a union for the construction trade, the State Training and Employment Service and other approved referral sources in the area;

(5) If it is necessary to lay off some of the workers in a given trade on the construction site, layoffs shall be conducted in compliance with the equal employment opportunity and non-discrimination standards set forth in this regulation, as well as with applicable Federal and State court decisions;

(6) To adhere to the following procedure when minority and women workers apply or are referred to the contractor or subcontractor:

(i) The contractor or subcontractor shall interview the referred minority or women worker.

(ii) If said individuals have never previously received any document or certification signifying a level of qualification lower than that required in order to perform the work of the construction trade, the contractor or subcontractor shall in good faith determine the qualifications of such individuals. The contractor or subcontractor shall hire or schedule those individuals who satisfy appropriate qualification standards in conformity with the equal employment opportunity and non-discrimination principles set forth in this chapter. However, a contractor or subcontractor shall determine that the individual at least possesses the requisite skills, and experience recognized by a union, apprentice program or a referral agency, provided the referral agency is acceptable to the Division. If necessary, the contractor or subcontractor shall hire or schedule minority and

women workers who qualify as trainees pursuant to these rules. All of the requirements, however, are limited by the provisions of (C) below.

(iii) The name of any interested women or minority individual shall be maintained on a waiting list, and shall be considered for employment as described in (i) above, whenever vacancies occur. At the request of the Division, the contractor or subcontractor shall provide evidence of its good faith efforts to employ women and minorities from the list to fill vacancies.

(iv) If, for any reason, said contractor or subcontractor determines that a minority individual or a woman is not qualified or if the individual qualifies as an advanced trainee or apprentice, the contractor or subcontractor shall inform the individual in writing of the reasons for the determination, maintain a copy of the determination in its files, and send a copy to the public agency compliance officer and to the Division.

(7) To keep a complete and accurate record of all requests made for the referral of workers in any trade covered by the contract, on forms made available by the Division and submitted promptly to the Division upon request.

(C) The contractor or subcontractor agrees that nothing contained in (B) above shall preclude the contractor or subcontractor from complying with the union hiring hall or apprenticeship policies in any applicable collective bargaining agreement or union hiring hall arrangement, and, where required by custom or agreement, it shall send journeymen and trainees to the union for referral, or to the apprenticeship program for admission, pursuant to such agreement or arrangement. However, where the practices of a union or apprenticeship program will result in the exclusion of minorities and women or the failure to refer minorities and women consistent with the targeted county employment goal, the contractor or subcontractor shall consider for employment persons referred pursuant to (B) above without regard to such agreement or arrangement; provided further, however, that the contractor or subcontractor shall not be required to employ women and minority advanced trainees and trainees in numbers which result in the employment of advanced trainees and trainees as a percentage of the total workforce for the construction trade, which percentage significantly exceeds the apprentice to journey worker ratio specified in the applicable collective bargaining agreement, or in the absence of a collective bargaining agreement, exceeds the ratio established by practice in the area for said construction trade. Also, the contractor or subcontractor agrees that, in implementing the procedures of (B) above, it shall, where applicable, employ minority and women workers residing within the geographical jurisdiction of the union.

After notification of award, but prior to signing a construction contract, the contractor shall submit to the public agency compliance officer and the Division an initial project workforce report (Form AA 201) electronically provided to the public agency by the Division, through its website, for distribution to and completion by the contractor, in accordance with N.J.A.C. 17:27-7. The contractor also agrees to submit a copy of the Monthly Project Workforce Report once a month thereafter for the duration of this contract to the Division and to the public agency compliance officer.

The contractor agrees to cooperate with the public agency in the payment of budgeted funds, as is necessary, for on-the-job and/or off-the-job programs for outreach and training of minorities and women.

(D) The contractor and its subcontractors shall furnish such reports or other documents to the Division of Public Contracts Equal Employment Opportunity Compliance as may be requested by the Division from time to time in order to carry out the purposes of these regulations, and public agencies shall furnish such information as may be requested by the Division of Public Contracts Equal Employment Opportunity Compliance for conducting a compliance investigation pursuant to **Subchapter 10 of the Administrative Code (NJAC 17:27)**.

## APPENDIX 2

### INSURANCE REQUIREMENTS

#### A. GENERAL REQUIREMENTS

1. The Contractor shall provide and pay for insurance coverage of such type and in such amounts as will completely protect the Contractor and the County, its elected officials, officers, agents, servants, employees and assigns against any and all risks of loss (including costs of defense) or liability arising out of this contract.

2. The insurance shall be furnished by insurance companies with and "A-VII" (Excellent) or better Rating as published in the most recent editions of Best Insurance Key Rating and shall be authorized to conduct business in the State of New Jersey. Certificates showing insurance companies with A.M. Best rates which have been reduced below the County Required "A:VII" WILL NOT BE ACCEPTED.

3. Prior to submitting a Certificate of Insurance to the County, prospective bidders are advised to check with their insurance agent to assure that the Insurance Company shown on their certificate has a proper spread of risk, soundness of reinsurance, quality of assets, adequacy of loss reserves and experience of management which qualifies it to receive the "A-VII" (Excellent) or better Rating.

4. It is recognized that in some instances that insurance may be acceptable which is underwritten by an insurance company that is not reported in the BEST GUIDE, or the coverage is extended under a self insured program. This insurance, or self insurance, must be in conformity with the rules and regulations of the Commissioner of Insurance of the State of New Jersey. Any insurance or self insurance of this type is subject to the review and acceptance by the County Counsel. Furthermore written proof of acceptability by the Office of the Commissioner of Insurance may be necessary.

5. The Contractor shall furnish the County with Certificates of Insurance, naming the County as an additional insured, as respects ongoing completed operations (Additional Insured Endorsement CG 20 10 10 93), is required. The Certificate shall set out the types of coverage, the limits of liability, describe the operation by reference to this contract and provide for (30 days) written notice to the County of cancellation or non-renewal. All deductibles and retention's shall be the sole risk of the Contractor.

6. The policies and specified limits of coverage must be effective prior to the commencement of work and must remain in force until final acceptance of the work under the contract. Contracts that involve construction, installation, or maintenance repair must maintain

completed operations insurance. In the event of interruption of any coverage for any reason, all work under the Contract shall cease and shall not resume until coverage has been restored.

7. The Contractor shall insure that any subcontractor(s) or sub subcontractors have in force during the term of this contract insurance equal to the coverage as herein set forth, or any subcontractor(s) shall be included under the contractor's policy.

8. The Certificate and endorsements are to be signed by a person authorized by the insuring company(s) to bind coverage on it's behalf. Neither approval by the County nor failure to disapprove Certificates of Insurance furnished by the Contractor shall release the Contractor from full responsibility for all liability including costs of defense. Insurance is required as a measure of protection and the Contractor's liability is not limited thereby.

9. The Certificate shall be subject to the review and approval of the County Counsel.

10. If at any time during the term of this contract or any extension thereof, if any of the required policies of insurance should expire, change or be canceled, it will be the responsibility of the Contractor to furnish to the County a Certificate of Insurance indicating renewal or an acceptable replacement of the policy prior to the expiration, change or cancellation so that there will be no lapse in any coverage.

11. Any policy of insurance that is written on a claims made basis shall, under the terms of this contract, be renewed or the coverage extended for a period of not less than three years and shall provide coverage for the period operations were performed by the contractor. Proof of such extension shall annually be presented to the County Counsel for the County of Atlantic and indicate the retroactive date of coverage or indicate that all prior acts coverage is provided.

12. Insurance or Risk Funding maintained by the County shall be considered as Excess over Contractors Insurance. Insurance or Risk Funding Maintained by the County of Atlantic does not provide protection for Contractors liability.

13. Certificates of Insurance shall show the Certificate Holder as follows:

COUNTY OF ATLANTIC  
COUNTY OFFICE BUILDING  
1333 ATLANTIC AVENUE  
ATLANTIC CITY, NEW JERSEY 08401  
ATTN: RISK MANAGER

Certificates of Insurance not reading as specified above will not be acceptable and will delay contract signature and/or payment.

14. Questions regarding these insurance requirements may be directed to Risk Manager at (609)-343-2279. Certificates for approval may be preliminarily submitted to Risk Manager via fax (609)-343-2373.

## B./ SPECIFIC COVERAGE REQUIREMENTS

1. The following items are the minimum mandatory types of insurance coverage to be carried under the preceding requirements:

(a) Workers Compensation-Statutory Limits , Employers Liability - with minimum limits of - \$1,000,000,/1,000,000,/1,000,000.

(b) General Liability in a comprehensive form, with minimum limits as follows:

1/ Each Occurrence	\$ 1,000,000
2/ Damage to Rented or Leased Properties	\$ 100,000
3/ Medical Expense	\$ 5,000
4/ Personal & Adv. Injury	\$ 1,000,000
5/ General Aggregate	\$ 2,000,000
6/ Products-Completed Operations Aggregate	\$ 2,000,000

(c) Motor Vehicle Liability Insurance in a comprehensive form, endorsed to include pollution coverage, with minimum limits of \$1,000,0000 CSL

- 1/ Owned Vehicles
- 2/ Hired/Leased Vehicles
- 3/ Non-Owned Vehicles

(d) Umbrella /Excess Liability over General / Automobile liability, with minimum limits of \$1,000,000

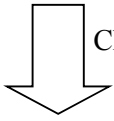
2. Other Coverage. If the contractor maintains broader coverage and/or higher limits than the minimums shown above, the County requires and shall be entitled to the broader coverage and/or higher limits maintained by the contractor. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to the County.

3. Self-Insured Retentions. Self-insured retentions must be declared to and approved by the County prior to execution of the Contract. At the option of the County, the Contractor shall provide coverage to reduce or eliminate such self-insured retentions as respects the County, its officers, officials, employees, and volunteers; or the Contractor shall provide evidence satisfactory to the County guaranteeing payment of losses and related investigations, claim administration, and defense expenses. The policy language shall provide, or be endorsed to provide, that the self-insured retention may be satisfied by either the named insured or the County.

4. County of Atlantic to be named as “Additional Insured” regarding to all operations of the contract. Vendors insurance is considered Primary to any other Valid and Collectable Insurance

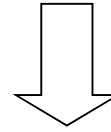


## BID CHECK LIST



Checked Items required with bid

Items submitted with bid  
(Bidder's **INITIALS** )



**A FAILURE TO SUBMIT ANY OF THESE ITEMS IS  
MANDATORY CAUSE FOR REJECTION OF BID**

<b>X</b>	Complete and sign Proposal page(s) <b><i>ORIGINAL SIGNATURES</i></b>	
<b>X</b>	Bid guarantee (bid bond or certified / cashier's check)	
<b>X</b>	Certificate from a Surety Company (Consent of Surety) to include MOST CURRENT FINANCIAL STATEMENT, CERTIFICATE OF AUTHORITY, POWER OF ATTORNEY AND SURETY DISCLOSURE STATEMENT from bonding / insurance company	
<b>X</b>	Corporate Disclosure Statement, Pursuant to N.J.S.A.40A:11-16	
<b>X</b>	Acknowledgement of Receipt of Addendum or Revision (if any)	
<b>X</b>	Copy of Certificate for Public Works Contractor Registration	
<b>X</b>	Subcontractors Affidavit (N.J.S.A. 40A:11-16), includes Plumbing, HVAC, Electrical and Structural Steel	

**B MANDATORY ITEM(S) REQUIRED PRIOR TO AWARD OF  
CONTRACT**

<b>X</b>	Copy of New Jersey Business Registration Certificate for bidder and designated subcontractors	
----------	---	--

**C FAILURE TO SUBMIT ANY OF THESE ITEMS AT TIME OF BID  
MAY BE CAUSE FOR REJECTION**

<b>X</b>	Non-Collusion Affidavit	
<b>X</b>	Affirmative Action Information Page	
<b>X</b>	References (if required)	
<b>X</b>	Deviations from Specifications, if applicable, attached in letter form	
	Other :	
<b>X</b>	Disclosure of Investment Activities in Iran	

Print Name of Bidder: \_\_\_\_\_ Date: \_\_\_\_\_

Signed By: \_\_\_\_\_

Print Name & Title: \_\_\_\_\_

**THIS CHECKLIST SHOULD BE INITIALED AND SIGNED  
WHERE INDICATED AND RETURNED WITH ALL ITEMS**

# **BID FORMS**

**ATLANTIC COUNTY**  
**LENAPE PARK EAST – CATERING HALL DECK RENOVATIONS**  
**PROPOSAL FORM**

\_\_\_\_\_  
Company Name

The undersigned, having read the Notice to Bidders, Invitation to Bid, Instructions to Bidders, Technical Specifications, Bid Drawings and any and all Clarifications and/or Addendums, etc., attached hereto, and having thoroughly investigated all existing conditions, equipment, material, and labor required for the Lenape Park East – Catering Hall Deck Renovations project in strict accordance with this specification, hereby agrees to complete ALL WORK as follows:

- |  |                 |
|--|-----------------|
| <b>1. Mechanical &amp; Electrical</b>                                | \$ _____        |
| <b>2. Carpentry, Drywall, Siding, Insulation,<br/>&amp; Concrete</b> | \$ _____        |
| <b>3. Door &amp; Hardware, Finishes &amp; Specialties</b>            | \$ _____        |
| <b>TOTAL BASE BID (Sum of 1+2+3)</b>                                 | \$ _____        |
| <b>Contingency Allowance (5% of BASE BID)</b>                        | \$ _____        |
| <b>TOTAL</b>   | <b>\$ _____</b> |

**The phrase ALL WORK means that the Contractor must provide every aspect of the construction process necessary to accomplish the task including but not limited to required demolition, removals, substrate preparation, fitting, shop drawings, material acquisition, storage, labor, temporary support, installation, testing, warranties, and etc. as necessary.**

**FIVE PERCENT (5%) CONTINGENCY ALLOWANCE:**

The County of Atlantic will determine a Contingency Allowance amount, equal to FIVE (5%) percent of the lowest qualified Base Bid, that will be added to and awarded with the Base Bid amount. This Contingency Allowance shall be set aside to pay for any items that are unforeseen or additional work not in the specifications or shown on the drawings. Before any work is performed under this Contingency Allowance, it shall be approved by the Director of Facilities or his designee. Any work performed without this written approval will not be paid. Some Unit Prices are included in this Proposal Form to address potential Allowance Contingency work. Should other types of work be requested by the County, it shall be priced at a time and material basis with back-up receipts, invoices, etc. as requested by the County. Allowable general contractor markup will be limited to 10% Overhead and 5% Profit.

ALL PF PAGES MUST BE COMPLETED AND SIGNED OR BID SHALL BE REJECTED  
AUTHORIZED SIGNATURE \_\_\_\_\_

**ATLANTIC COUNTY**  
**LENAPE PARK EAST – CATERING HALL DECK RENOVATIONS**  
**PROPOSAL FORM**

\_\_\_\_\_  
Company Name

**UNIT PRICING ADD OR DEDUCT SCHEDULE**

1. UNIT PRICE No. 1:

Removal and replacement of rotted 3/4" plywood in the deck floor with new 3/4" plywood. Include the replacement of 96 square feet of 3/4" plywood in the base bid. See Section 061000 Rough Carpentry.

Cost per square foot, 3/4" plywood MORE than 96 square feet:

ADD \$ \_\_\_\_\_ to the Base Bid per square foot.

Cost per square foot, 3/4" plywood LESS than 96 square feet:

DEDUCT \$ \_\_\_\_\_ from Base Bid per square foot.

**Note: The difference of cost per square foot between Add and Deduct cannot exceed five percent (5%).**

2. UNIT PRICE No. 2:

Removal and replacement of two layers of drywall of the two (2) hour rated ceiling in the basement below the Deck. Include the replacement of 256 square feet of two (2) layers of in the base bid. See ceiling assembly 003 on sheet A-4, and Section 092500 Gypsum Drywall.

Cost per square foot, two layers of drywall of the Two (2) hour rated ceiling in the basement below the Deck MORE than 256 square feet:

ADD \$ \_\_\_\_\_ to the Base Bid per square foot.

Cost per square foot, two layers of drywall of the Two (2) hour rated ceiling in the basement below the Deck LESS than 256 square feet:

DEDUCT \$ \_\_\_\_\_ from Base Bid per square foot.

**Note: The difference of cost per square foot between Add and Deduct cannot exceed five percent (5%).**

ALL PF PAGES MUST BE COMPLETED AND SIGNED OR BID SHALL BE REJECTED  
AUTHORIZED SIGNATURE \_\_\_\_\_

**ATLANTIC COUNTY**  
**LENAPE PARK EAST – CATERING HALL DECK RENOVATIONS**  
**PROPOSAL FORM**

\_\_\_\_\_  
Company Name

3. UNIT PRICE No. 3:

Removal and replacement of cement board wall siding to match existing in the inside of the Catering Hall Deck, based on square foot.

ADD \$ \_\_\_\_\_ per Square Foot

**ADD/DEDUCT WORK NOT INCLUDED IN UNIT PRICING**

Other types of work may be requested by the County and will be priced at a time and material basis. The Contractor shall include a maximum of 10% overhead and 5% profit on any Request Against Allowance or Change Order on a materials/equipment/labor cost with invoice and/or other backup documentation as requested by the Architect/ Engineer/ County, and as approved by same in writing.

**AWARD OF CONTRACT:**

The award of this contract will be based on the BASE BID only to the lowest responsible and responsive bidder. Should the County of Atlantic, due to budget constraints, have insufficient funds to award the Total Base Bid, the County of Atlantic at its sole discretion shall elect to award whichever part of the project it can.

**IMPORTANT NOTES:**

- 1) All work will take place during normal business hours, weather permitting, and exclusive of weekends and holidays, unless specifically negotiated upon award of construction contract and/or project kick off meeting.
- 2) All work is to begin within fourteen (14) consecutive calendar days (CCD) from Notice to Proceed or upon Project Start Date as determined at the pre-construction kick-off meeting.
- 3) This construction project MUST to be completed and closed out within one-hundred & five (105) CCD after Project Start Date. This 105 CCD schedule includes the following milestone deadlines:
  - a. Delivery of all Submittals to Architect/ Engineer within thirty (30) CCD of Project Start Date.
  - b. Substantial Completion shall occur no later than fifty (50) CCD from Project Start Date.
  - c. Final Completion and Close-out (Project Completion Date) shall occur no later than twenty-five (25) CCD after Substantial Completion. This milestone deadline is seventy-five (75) CCD after Project Start Date.

ALL PF PAGES MUST BE COMPLETED AND SIGNED OR BID SHALL BE REJECTED  
AUTHORIZED SIGNATURE \_\_\_\_\_

**ATLANTIC COUNTY**  
**LENAPE PARK EAST – CATERING HALL DECK RENOVATIONS**  
**PROPOSAL FORM**

\_\_\_\_\_  
Company Name

- d. The County will be allowed an additional thirty (30) CCD after the Project Completion Date for County administrative purposes only, i.e. reviewing, approval and processing close-out documents and final payment to Contractor. This will bring the total project schedule to one-hundred and five (105) CCD from Project Start Date.
  - e. The County will apply liquidated damages of \$500.00 (five-hundred dollars) per CCD for any contract work that does not meet the project's milestone deadlines, including administrative requirements, Substantial Completion, and Project Completion Date.
- 4) Any and all fees for permits are to be paid by the Contractor.

**NOTE:** Certified Check, Cashier's Check or Bid Bond must be not less than ten percent (10%) of the total amount of the Bid, except that no check or bid bond shall be for more than \$20,000 and made payable to the Atlantic County Treasurer. The undersigned agrees said amount is to be forfeited as liquidated damages and not a penalty if the Contract is awarded to the undersigned and the undersigned shall fail to execute the Contract for the project or furnish the required bond. Otherwise, said deposit shall be returned to the undersigned.

**NAME OF BIDDER:**

The undersigned is a (Circle one of the following) *Partnership / Corporation / Individual* under the laws of the State of New Jersey, having principal offices at:

\_\_\_\_\_  
\_\_\_\_\_

and is authorized to conduct business in the State of New Jersey.

ALL PF PAGES MUST BE COMPLETED AND SIGNED OR BID SHALL BE REJECTED  
AUTHORIZED SIGNATURE \_\_\_\_\_

**ATLANTIC COUNTY**  
**LENAPE PARK EAST – CATERING HALL DECK RENOVATIONS**  
**PROPOSAL FORM**

\_\_\_\_\_  
Company Name

\_\_\_\_\_  
Name (Print) Title

\_\_\_\_\_  
Signature Date

\_\_\_\_\_  
Company Name

\_\_\_\_\_  
PO Box/Street Address City/State Zip Code

\_\_\_\_\_  
Office Phone Cell

\_\_\_\_\_  
Email

\_\_\_\_\_  
Fax Website

**ALTERNATE CONTACT INFORMATION**

\_\_\_\_\_  
Name (Print) Title

\_\_\_\_\_  
PO Box/Street Address City/State Zip Code

\_\_\_\_\_  
Office Phone Cell

\_\_\_\_\_  
Email

\_\_\_\_\_  
Fax Website

ALL PF PAGES MUST BE COMPLETED AND SIGNED OR BID SHALL BE REJECTED  
AUTHORIZED SIGNATURE \_\_\_\_\_

COUNTY OF ATLANTIC  
ACKNOWLEDGEMENT OF RECEIPT OF ADDENDA  
VENDOR REQUIRED TO COMPLETE AND RETURN FORM WITH PROPOSAL  
REGARDLESS OF WHETHER ADDENDA WAS ISSUED.  
FAILURE TO COMPLETE AND RETURN FROM IS A FATAL DEFECT  
WHICH CANNOT BE CURED AND PROPOSAL WILL BE REJECTED

The undersigned vendor hereby acknowledges receipt of the following Addenda:

Addendum Number	Dated	Initial
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

OR:

Vendor acknowledges to the best of this /her knowledge no addendum has been issued by the County

Dated \_\_\_\_\_ Initial \_\_\_\_\_

Vendor is required to complete, sign and submit form with bid regardless of whether addenda was issued. Failure to complete and return form is a fatal defect which cannot be cured and bid will be rejected .See: N.J.S.A. 40 A:11-23.2

Company: \_\_\_\_\_

Signature: \_\_\_\_\_

BY: \_\_\_\_\_  
(Print or Type Name of Authorized Individual)

Title: \_\_\_\_\_



## **SUBCONTRACTOR LISTING**

N.J.S.A. 40A:11-16 REQUIRES THE LISTING OF ALL SUBCONTRACTORS TO WHOM THE BIDDER WILL SUBCONTRACT THE FURNISHING OF :

- 1) Plumbing and Gas fitting and Kindred work.
- 2) Steam power plants, steam and hot water heating and ventilating apparatus and all kindred work.
- 3) Electrical Work
- 4) Structural Steel and ornamental Iron work

The general contractor must complete **ALL** of the sections on the following form "AFFIDAVIT OF COMPLIANCE " in order to provide the required information demonstrating that either its subcontractors , its own employees or the bidder himself possess the necessary or required qualifications to perform work in each appropriate specialty trade category applicable to the contract. If the contract does not involve any of the specialty trade categories , insert the word "NONE" in each appropriate space provided. The completed form must be submitted with the general contractor's bid.

A general contractor that intends to utilize a specific subcontractor (s) to perform work in one or more of the specialty trade categories set forth on the following form shall provide the required information with regard to each subcontractor in the appropriate spaces of each specialty trade category applicable to the contract. Use additional copies of the affidavit page if necessary .

A general contractor that intends to perform work in one or more of the specialty trade categories set forth on the following form through the use of its own employees or the general contractor himself rather than utilization of a subcontractor shall write the word "In house" next to each applicable category.

**LIST OF SUBCONTRACTORS**  
**IF APPLICABLE**

N.J.S.A. 40A:11-16 REQUIRES THE LISTING OF ALL SUBCONTRACTORS TO WHOM THE BIDDER WILL SUBCONTRACT THE FURNISHING OF:

- 5) Plumbing and gas fitting and all kindred work.
- 6) Steam power plants, steam and hot water heating and ventilating apparatus and all kindred work.
- 7) Electrical work
- 8) Structural steel and ornamental iron work

All bidders seeking to perform plumbing work on a publicly bid contract are required to comply with N.J.S.A. 45:14C.1-4 See Plumbing Affidavit page P.A. (when applicable)

In accordance with N.J.S.A. 40A:11-16 the following is a list of names of subcontractors to whom the bidder will subcontract the furnishing of the above referenced work required for the completion of the project. If more than one subcontractor is listed for an above referenced trade, the bidder must submit a list of names and addresses and the scope of work, goods and services for which the subcontractor has submitted a price quote and which the bidder has agreed to award each subcontractor should the bidder be awarded the contract.

Trade	Company	Address/Telephone #

**I certify that the foregoing statement(s) made by me are true. I am aware that if any of the foregoing statement(s) made by me are willfully false, I am subject to punishment.**

Signature \_\_\_\_\_

**STOCKHOLDER DISCLOSURE CERTIFICATION**  
**This Statement Shall Be Included with Bid Submission**

**Name of Business:** \_\_\_\_\_

**Principle Place of Business:** \_\_\_\_\_

**Check the box that represents the type of business organization:**

Partnership                       Corporation                       Limited Liability Corporation

I certify that no one stockholder, partner or member owns a 10% or greater interest in the respective Corporation, Partnership or Limited Liability Company.

**OR**

I certify that the list below contains the names and addresses of all:

- (1) stockholders in the corporation who own a 10% or more of its stock, of any class,
- (2) individual partners in the partnership who own a 10% or greater interest therein, or
- (3) members of the limited liability company who own a 10% or greater interest therein.

Further, that if one or more such stockholder, member or partner is itself a corporation, partnership or limited liability company, any stockholder, member or partner holding 10% or more therein, is also listed below, and Further, if the bidder is publicly traded, the name and address of each person that holds a 10% or greater beneficial interest therein as of the last annual filing with the federal Securities and Exchange Commission or the foreign equivalent, below is listed links to the websites containing the last annual filings and the relevant page numbers of the filings that contain the information on each person that holds a 10% or greater beneficial interest.

<b>Name</b>	<b>Home Address</b>
_____	_____
_____	_____
_____	_____

Subscribed and sworn before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

My Commission Expires:

\_\_\_\_\_  
(Affiant)

\_\_\_\_\_  
(Print name & title of Affiant)  
(Corporate Seal)

## **BID SECURITY (REQUIRED TO BE SUBMITTED WITH THE BID PROPOSAL PACKAGE)**

**Each Bidder shall submit with the bid a certified check, cashier's check or bid bond in the amount of ten (10%) percent of the total price bid, but not in excess of \$20,000.00, payable unconditionally to the owner.** When submitting a Bid Bond, it shall contain a Power of Attorney for the full amount of the Bid Bond from a surety company authorized to do business in the State of New Jersey and acceptable to the owner. The check or bond of the bidder to whom the contract is awarded shall be retained until a contract is executed and the required performance bond or other security is submitted. The check or bond of the successful bidder shall be forfeited if the bidder fails to enter into a contract pursuant to N.J.S.A. 40A:11-21.

The bid security of all bidders except the three (03) apparent lowest responsible bidders shall be returned pursuant to N.J.S.A. 40A:11-24(a) after the opening of the bid proposals. The bid security of the remaining unsuccessful bidders will be returned within three (03) days, Sundays and holidays exempted, after award of the contract and upon receipt and approval of the Contractor's Performance Bond.

Non-performance by a successful bidder or their failure to execute the contract or meet bond requirements within ten (10) days after receipt of the County Contract shall result in their bid security being forfeited to the County as liquidated damages.

Where the specifications or instructions provide for no Surety/Performance bond requirements, the check of the successful bidder will be returned upon satisfactory completion of the work or delivery and inspection of the goods and services purchased subject to such other provisions of these instructions or the specifications, whichever may apply.

If no contract has been awarded within sixty (60) days (or upon written extension by both parties) after the bid proposal opening, the bid security will be returned upon demand of the bidder.

# EXHIBIT A

## SAMPLE FORM OF BID BOND

KNOW ALL MEN BY THESE PRESENTS that we, the undersigned,  
\_\_\_\_\_ as Principal and  
\_\_\_\_\_ as Surety, are hereby held and firmly  
bound unto the County of Atlantic as Owner in the sum of  
\_\_\_\_\_ (\$\_\_\_\_\_) Dollars for the payment of which, well  
and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators,  
successors and assigns.

SIGNED, this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

The condition of the above obligation is such that whereas the Principal has submitted to the County of Atlantic a certain bid, attached hereto and hereby made a part hereof, to enter into a Contract in writing for Work pursuant to the Contract Documents.

NOW, THEREFORE,

(a) If said Bid shall be rejected or, in the alternative,

(b) If said Bid shall be accepted and the Principal shall execute and deliver a Contract in the form attached hereto (properly completed in accordance with said Bid) and shall furnish a bond for the faithful performance of said Contract and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the Agreement created by the acceptance of said Bid,

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 amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by any extension of the time within which the County of Atlantic may accept such bid and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

Attest or Witnesseth:

\_\_\_\_\_

Principal: \_\_\_\_\_

By: \_\_\_\_\_  
(print name)

\_\_\_\_\_  
(signature)

Surety: \_\_\_\_\_

By: \_\_\_\_\_  
(print name)

\_\_\_\_\_  
(signature)

**NOTE: Documents attesting to the County of the persons executing this bond to so act on behalf of the surety company, as well as the most current financial statement of the company, must be annexed hereto. The surety company's own form will be accepted if in compliance with this form. No AIA forms are acceptable. The failure to provide these documents with the bid proposal shall result in a rejection of the bid.**

## **CONSENT OF SURETY (REQUIRED TO BE SUBMITTED WITH THE BID PROPOSAL PACKAGE)**

In addition to the Bid Security, each bid must be accompanied by one (1) or more consent of surety statements, in a form similar to the Certificate attached as Exhibit B, of one (1) or more surety companies authorized by the State of New Jersey Department of Banking and Insurance to issue Bonds in the State of New Jersey and acceptable to the County, unconditionally agreeing, in the event the Bidder is awarded the Contract, to furnish a performance bond(s) with material and payment guarantees pursuant to N.J.S.A. 2A:44-143 (Performance Bond). In the event the surety company or companies choose(s) to furnish its (their) own form of Certificate, the substituted form must be substantially in compliance with the form provided herein. ***A power of attorney and the most current financial disclosure statement shall support the Consent of Surety. AIA forms are not acceptable. The failure to provide these documents with the bid proposal shall result in a rejection of the bid.***

## **PERFORMANCE SECURITY**

Within ten (10) days after receipt of the Notice of Award the Contractor shall furnish a surety bond or bonds of face value equal to one hundred (100%) percent of the Contract price as security for faithful performance of the Contract, and for the payment of all persons performing labor on the project under the Contract and furnishing materials in connection therewith, all as specified in the Contract Documents. The Performance Bond shall be in the form annexed as Exhibit G. The surety on such bond or bonds shall be duly authorized by the State of New Jersey Department of Banking and Insurance to issue Bonds in the State of New Jersey and satisfactory to the County, except as otherwise provided by N.J.S.A. 40A:11-22 and except as modified by the County by separate resolution. If the Contractor is a partnership, the bond is to be signed by each of the individual partners; if a corporation, the bond is to be signed in the correct corporate name by a duly authorized officer, agent or attorney in fact. There shall be executed an appropriate number of counterparts of the bond corresponding to the number of counterparts of the Contract. Each executed bond shall be accompanied by:

1. An appropriate acknowledgment of the respective parties.
2. An appropriate certified copy of a power of attorney when the bond(s) is/are executed by the surety's agent, officer or other representative.
3. A certified extract from the by-laws or resolution of the surety under which power of attorney or other certificate of the agent, officer or representative was issued.
4. A Surety Disclosure Statement and Certification.

Performance Security set forth on AIA forms is not acceptable.

EXHIBIT B  
CERTIFICATE OF SURETY

TO: County of Atlantic

Re: Contract \_\_\_\_\_

THIS IS TO CERTIFY that if \_\_\_\_\_ ("Contractor") is the successful bidder on its bid for \_\_\_\_\_ ("Project"), \_\_\_\_\_, a corporation of the State of \_\_\_\_\_ ("Surety"), with its principal office at \_\_\_\_\_, duly authorized to transact business in the State of New Jersey and to provide surety services and not currently in bankruptcy, shall provide to the County and shall be surety on the performance bonds required by the Contract Documents of the Project in such sums as are designated in the Contract Documents including one hundred (100%) percent of the amount of the awarded Contract.

Surety further agrees that said performance bond(s) shall remain in full force and effect for the duration of the Project and shall not be released until final acceptance of the Work and formal approval by the County, and then only if all liens or claims have been satisfied and all other applicable provisions of the Contract Documents have been executed, and submitted to and approved by the County.

IN WITNESS WHEREOF, the undersigned has caused this certificate to be signed by its proper officers and its corporate seal to be affixed hereto this \_\_\_\_ day of \_\_\_\_\_ 20\_\_.

ATTEST:

\_\_\_\_\_

(Name of Surety) Company)

\_\_\_\_\_

By: \_\_\_\_\_  
(Authorized Agent of Surety)

(Seal)

**NOTE: Documents attesting to the County of the persons executing this Certificate to so act on behalf of the surety company, as well as the most current financial statement of the company, must be annexed hereto. The surety company's own form will be accepted if in compliance with this form. No AIA forms are acceptable. The failure to provide these documents with the bid proposal shall result in a rejection of the bid.**



**NON-COLLUSION AFFIDAVIT**

State of New Jersey)

) ss

County of \_\_\_\_\_

I, \_\_\_\_\_ of \_\_\_\_\_ in the County of

\_\_\_\_\_ and the State of \_\_\_\_\_, of full age, being duly sworn according to law on my oath, depose and say, that:

I am \_\_\_\_\_ of the Firm of \_\_\_\_\_, the bidder making the Proposal for the herein project, and that I executed the said Proposal with full authority to do so, that said bidder has not directly or indirectly entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free, competitive bidding in connection with the above named project, and that all statements contained in said Proposal and in this affidavit are true and correct, and made with full knowledge that the County of Atlantic relies upon the truth of the statements contained in said Proposal and in the statements contained in this affidavit in awarding the contract for the said project.

I warrant that no requirement or commitment was made in reference to any political contribution to any party, person, or elected official and that no undisclosed benefits of any kind were promised to anyone connected with County government or any political party in reference hereto.

I further warrant that no person or selling agency has been employed or retained to solicit or secure such contract upon agreement or understanding for a commission, percentage, brokerage or contingent fee, except bona fide employees or bona fide established commercial or selling agencies maintained by

\_\_\_\_\_  
NAME OF CONTRACTOR

I further warrant and represent that I have never been convicted of or acknowledge nor admitted to any payment of kickbacks or unlawful gifts to any government official or employee for which conduct the County of Atlantic deems me disqualified from doing business with County of Atlantic under such circumstances.

I also understand that the above disqualification does not apply to any vendor who cooperates with the prosecution and gives supporting testimony on behalf of the prosecution in the course of a judicial inquiry.

SWORN AND SUBSCRIBED TO  
BEFORE ME THE \_\_\_\_\_ DAY  
OF \_\_\_\_\_ 20 \_\_\_\_.

\_\_\_\_\_  
Signature of Notary Public

Notary Public of \_\_\_\_\_

My Commission Expires \_\_\_\_\_

\_\_\_\_\_  
SIGNATURE OF AFFIANT

\_\_\_\_\_  
PRINT OR TYPE NAME OF AFFIANT

**AFFIRMATIVE ACTION INFORMATION**

Please complete the following:

Company Name \_\_\_\_\_

1. Our Company has a Federal Affirmative Action Plan Approval:

YES \_\_\_\_\_ NO \_\_\_\_\_

a. If yes, submit a photographic copy of the Approval

2. Our Company has a New Jersey Certificate of Employee Information Report:

YES \_\_\_\_\_ NO \_\_\_\_\_

a. If yes, submit a Photographic copy of the Certificate

3. Our Company has neither of the above, therefore send us (check if applicable)

FORM AA-302 \_\_\_\_\_ (Service Contracts)  
Affirmative Action Employee Information Report

FORM AA-201 \_\_\_\_\_ (Construction Contracts)  
Initial Project Workforce Report Construction

I certify that the above information is correct to the best of my knowledge.

NAME: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

TITLE: \_\_\_\_\_

DATE: \_\_\_\_\_

**DISCLOSURE OF INVESTMENT ACTIVITIES IN IRAN**

**PART 1: CERTIFICATION**

**BIDDERS MUST COMPLETE PART 1 BY CHECKING EITHER BOX.**

**FAILURE TO CHECK ONE OF THE BOXES WILL RENDER THE PROPOSAL NON-RESPONSIVE.**

Pursuant to Public Law 2012, c. 25, any person or entity that submits a bid or proposal or otherwise proposes to enter into or renew a contract must complete the certification below to attest, under penalty of perjury, that neither the person or entity, nor any of its parents, subsidiaries, or affiliates, is identified on the Department of Treasury’s Chapter 25 list as a person or entity engaging in investment activities in Iran. The Chapter 25 list is found on the State of New Jersey, Department of Treasury, Division of Purchase and Property website at <http://www.state.nj.us/treasury/purchase/pdf/Chapter25List.pdf>. Bidders must review this list prior to completing the below certification. **Failure to complete the certification may render a bidder’s bid proposal non-responsive.** If the County of Atlantic determines that a person or entity has submitted a false certification concerning its engagement in investment activities in Iran pursuant to section 4 of P.L. 2012, c.25 (C.52:32-58), the local contracting unit shall report to the New Jersey Attorney General the name of that person or entity, and the Attorney General shall determine whether to bring a civil action against the person to collect the penalty prescribed in paragraph (1) of subsection a. of section 5 of P.L. 2012, c.25 (C.52:32-59). The County of Atlantic may also report to the county counsel the name of that person, together with its information as to the false certification, and the county counsel may determine to bring such civil action against the person to collect such penalty.

**PLEASE CHECK THE APPROPRIATE BOX:**

I certify, pursuant to Public Law 2012, c. 25, that neither the bidder listed above nor any of the bidder’s parents, subsidiaries, or affiliates is listed on the N.J. Department of the Treasury’s list of entities determined to be engaged in prohibited activities in Iran pursuant to P.L. 2012, c. 25 (“Chapter 25 List”). I further certify that I am the person listed above, or I am an officer or representative of the entity listed above and I am authorized to make this certification on its behalf. I will skip Part 2 and sign and complete the Certification below.

**OR**

I am unable to certify as above because the bidder and/or one or more of its parents, subsidiaries, or affiliates is listed on the Department’s Chapter 25 list. I will provide a detailed, accurate and precise description of the activities in Part 2 below and sign and complete the Certification below. Failure to provide such will result in the proposal being rendered as nonresponsive and appropriate penalties, fines and/or sanctions will be assessed as provided by law.

**PART 2: PLEASE PROVIDE FURTHER INFORMATION RELATED TO INVESTMENT ACTIVITIES IN IRAN**

**You must provide a detailed, accurate and precise description of the activities of the bidding person/entity, or one of its parents, subsidiaries or affiliates, engaging in the investment activities in Iran outlined above by completing the boxes below.**

**PROVIDE INFORMATION RELATIVE TO THE ABOVE QUESTIONS. PLEASE PROVIDE THOROUGH ANSWERS TO EACH QUESTION. IF YOU NEED TO MAKE ADDITIONAL ENTRIES, ATTACH ADDITIONAL PAGES.**

Name \_\_\_\_\_ Relationship to Bidder/Offeror \_\_\_\_\_  
Description of Activities \_\_\_\_\_  
\_\_\_\_\_ Duration  
of Engagement \_\_\_\_\_ Anticipated Cessation Date \_\_\_\_\_  
Bidder/Offeror Contact Name \_\_\_\_\_ Contact Phone Number \_\_\_\_\_

**DISCLOSURE OF INVESTMENT ACTIVITIES IN IRAN**

**Certification:**

**I, being duly sworn upon my oath, hereby represent and state that the foregoing information and any attachments thereto to the best of my knowledge are true and complete. I attest that I am authorized to execute this certification on behalf of the above-referenced person or entity. I acknowledge that the County of Atlantic is relying on the information contained herein and thereby acknowledge that I am under a continuing obligation from the date of this certification through the completion of any contracts with the County of Atlantic to notify the County of Atlantic in writing of any changes to the answers of information contained herein. I acknowledge that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification, and if I do so, I recognize that I am subject to criminal prosecution under the law and that it will also constitute a material breach of my agreement(s) with the County of Atlantic and that the County of Atlantic at its option may declare any contract(s) resulting from this certification void and unenforceable.**

**I, being duly sworn upon my oath, hereby represent and state that the foregoing information and any attachments thereto to the best of my knowledge are true and complete. I attest that I am authorized to execute this certification on behalf of the above-referenced person or entity.**

**Bidder:** \_\_\_\_\_

**Signature:** \_\_\_\_\_

**Print Name:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Date:** \_\_\_\_\_