COUNTY OF GREENVILLE
CONSTRUCTION OF EAST RIVERSIDE PARK RESTROOMS
IFB# 02-07/19/16

Greenville County

DEPARTMENT OF GENERAL SERVICES
PROCUREMENT SERVICES DIVISION
GREENVILLE COUNTY SQUARE
301 UNIVERSITY RIDGE, SUITE 100
GREENVILLE, SOUTH CAROLINA 29601
www.greenvillecounty.org
Phone: 864-467-7200

GREENVILLE COUNTY COUNCIL
PROCUREMENT SERVICES DIVISION
GREENVILLE COUNTY SQUARE
301 UNIVERSITY RIDGE, SUITE 100
GREENVILLE, SOUTH CAROLINA 29601-3660

Greenville County

NOTICE **Date June 17, 2016**

Sealed bids for furnishing THE DEMOLITION OF OLD RESTROOMS AND THE CONSTRUCTION OF NEW RESTROOMS AT EAST RIVERSIDE PARK subject to the conditions and all provisions set forth herein and attached, will be received at this office until 3:00 P.M., E.D.T., JULY 19, 2016, then publicly opened. The commodities and/or services must be furnished as described and specified to Greenville County.

SHOW THIS NUMBER ON ENVELOPE **PROCUREMENT SERVICES DIVISION**

IFB No. #02-07/19/16 By_____ Director

	COMMODITIES OR SERVICES	
	GREENVILLE COUNTY IS REQUESTING SUBMISSION OF SEALED BIDS FROM VENDORS TO PROVIDE THE DEMOLITION OF OLD RESTROOMS AND THE CONSTRUCTION OF NEW RESTROOMS AT EAST RIVERSIDE PARK LOCATED AT 1155 SOUTH SUBER ROAD, GREER, SC 29650. **BIDS MUST BE SUBMITTED ON THE BID FORM (PAGE 28).** **PLEASE SUBMIT ONE (1) ORIGINAL AND FIVE (5) COPIES OF YOUR BID.** **A PRE-BID MEETING WILL BE HELD AT 10:00 A.M., E.D.T., JUNE 28, 2016 AT GREENVILLE COUNTY PROCUREMENT SERVICES DIVISION, 301 UNIVERSITY RIDGE, SUITE 100, GREENVILLE, SC 29601. A SITE VISIT WILL BE HELD AT 1:00 P.M., E.D.T., JUNE 28, 2016 AT EAST RIVERSIDE PARK, 1155 S. SUBER ROAD, GREER, SC 29650. THE SITE VISIT WILL BE HELD IN CONJUNCTION WITH A SITE VISIT FOR RFP# 03-07/19/16 – EAST RIVERSIDE PARK FIELD LIGHTING.** **QUESTIONS CONCERNING THE IFB ARE TO BE SUBMITTED IN WRITING TO BOB BREWER, CPPO, CPPB, GREENVILLE COUNTY PROCUREMENT SERVICES DIVISION, SUITE 100, 301 UNIVERSITY RIDGE, GREENVILLE, SC 29601, BY FAX (864) 467-7304 OR EMAIL rbrewer@greenvillecounty.org NO LATER THAN 5:00 P.M., E.D.T. JULY 7, 2016.** **PLEASE SIGN THE FOLLOWING PAGE AND BID FORM (PAGE 28). FAILURE TO SIGN MAY VOID YOUR BID. PLEASE MARK YOUR ENVELOPE TO READ:** **IFB #02-07/19/16.**	

INSTRUCTIONS TO RESPONDENTS

IFB# 02-07/19/16 CONSTRUCTION OF EAST RIVERSIDE PARK RESTROOMS

1. Unless otherwise required, submit only one (1) original and five (5) copies of each RFI/RFQ/IFB/Proposals.
2. RFI/RFQ/IFB/Proposals, amendments thereto or withdrawal requests received after the time advertised for opening will be void regardless of when they were mailed.
3. Quote prices on units specified with packing included.
4. Attach complete specifications for and permitted substitutions offered, or when amplification is desirable or necessary.
5. If specifications or descriptive papers are submitted with RFI/RFQ/IFB/Proposals, enter respondents name thereon.
6. If the article bid upon has a trade name or brand, show same in the RFI/RFQ/IFB/proposal.
7. When required, furnish samples, free of expense, prior to opening of RFI/RFQ/IFB/Proposals. Label each sample with respondents name and the item number. Should you wish samples returned, at your expense, when not destroyed in tests, make request for return within 10 days following bid/proposal opening.
8. Show delivery time required after order is received (see below).
9. Address and mark bids/proposals as indicated in the notice.

CONDITIONS

1. The County Agency or Institution submitting this notice reserves the right to reject any and all RFI/RFQ/IFB/Proposals, and to waive all technicalities.
2. Unit prices will govern over extended prices, unless otherwise stated in notice.
3. Time in connection with discount offered will be computed from date of delivery of commodities to carrier, when inspecting and acceptance is at point of origin; or date of delivery at destination; or if laboratory inspection is made part of bid, from date of laboratory report.
4. In case of default of contractor, Greenville County reserves the right to purchase any or all items in default on open market, charging contractor with any excessive costs.
5. All materials and products offered must be guaranteed to meet the requirements of the specifications indicated, given or referred to.
6. Prices bid must be based upon payment in thirty (30) days. Discounts for payment in less than thirty (30) days will not be considered in making award.
7. The right is reserved, in case of tie bids, to make award considered to be most advantageous to Greenville County.
8. The right is reserved to reject any RFI/RFQ/IFB/Proposal in which the delivery time indicated is considered sufficient to delay the operation for which the commodity is intended.
9. Unless otherwise indicated by County Agency or Institution submitting this notice, prices must be firm.

RFI/RFQ/IFB/PROPOSAL

(DATE) _____

In compliance with invitation, and subject to all conditions, thereof, the undersigned offers and agrees, if this RFI/RFQ/IFB/Proposal is accepted within _____days from date of opening, furnish any or all items quoted on at prices as set forth after the item and unless otherwise specified, within _____ days after receipt of order, delivered, all transportation costs included,

Discount will be allowed as follows: 30 calendar days _____ %.

FIRM NAME _____ ADDRESS _____

BY_____ _____

(RFI/RFQ/IFB/PROPOSAL MUST BE SIGNED IN WRITING)

PRINT NAME_____ _____

TITLE_____ EMAIL: _____

PHONE_____ FAX_____

COUNTY OF GREENVILLE
CONSTRUCTION OF EAST RIVERSIDE
PARK RESTROOMS
IFB# 02-07/19/16

SCHEDULE

June 28, 2016	A **pre-bid meeting** will be held at **10:00 A.M., E.D.T.,** Greenville County Procurement Services Division, **301 University Ridge, Suite 100, Greenville SC 29601**. The **site visit** will be held at **1:00 P.M., E.D.T.,** East Riverside Park, **1155 South Suber Road, Greer, SC 29650**. The site visit will be in conjunction with RFP# 03-07/19/16 – East Riverside Park Field Lighting .
July 7, 2016	**All questions** must be submitted in writing to Bob Brewer, CPPO, CPPB, Procurement Services Division, 301 University Ridge, Suite 100, Greenville, SC 29601, by Fax (864)467-7304, or by email rbrewer@greenvillecounty.org, by **5:00 P.M., E.D.T.**
July 19, 2016	**Bids** must be delivered to the Procurement Services Division, 301 University Ridge, Suite 100, Greenville, SC 29601 no later than **3:00 P.M. E.D.T**.
July 19 – August 2, 2016	**Review** of Bids
August 2, 2016	Tentative Date of **Award**
August 2 - 16, 2016	**Contract** Negotiations
August 16, 2016	Issue **Notice to Proceed**

INVITATION FOR BIDS
CONSTRUCTION OF EAST RIVERSIDE
PARK RESTROOMS
IFB# 02-07/19/16

Greenville County

I. Introduction

Greenville County is requesting sealed bids from vendors for the demolition of old restrooms and the construction of new restrooms at East Riverside Park located at 1155 South Suber Road, Greer, SC 29650.

II. Scope of Work

Greenville County is seeking bids from vendors to provide all labor, materials and equipment to perform the demolition of old restrooms and the construction of the new restrooms at East Riverside Park located at 1155 South Suber Road, Greer, SC 29650. Contractor shall provide all work and materials in accordance with the drawings and specifications (prepared by Langley & Associates Architects, LLC) listed in Attachment A of this IFB, federal, state and local codes.

The demolition of the old restrooms will consist of asbestos abatement, location and capping of utilities for re-use in new construction, demolition of building, and removal of all materials. An asbestos report prepared by Environmental Testing & Management, Inc. is included in Attachment B.

III. Bonding

Information on Bid Bonds, Performance and Payment Bonds is listed in the Instructions/Terms and Conditions (page 11).

IV. Pre-Bid Meeting and Site Visit

A **pre-bid meeting** will be held at **10:00 A.M., E.D.T., Tuesday, June 28, 2016** at Greenville County Procurement Services Division, **301 University Ridge, Suite 100, Greenville, SC 29601.** A **site visit** will be held at 1:00 P.M., E.D.T., June 28, 2016 at **1155 South Suber Road, Greer, SC 29650.** The site visit will be in conjunction with RFP# 03-07/19/16 – Field Lighting for East Riverside Park.

V. Bid and Sub-Contractors

Bids must be listed on the Bid Form (page 28). The costs for the demolition of the old restrooms and for the new construction shall be listed separately with the total listed at the bottom. A listing of the sub-contractors and their services (mechanical, electrical, etc.) must be listed on the Bid Form (page 28).

VI. Submission Procedures, Requirements

A. Submittals

All submissions must be received by **3:00 P.M., E.D.T., TUESDAY, JULY 19, 2016** and delivered to Greenville County Procurement Services Division, 301 University Ridge, Suite 100, Greenville, South Carolina 29601. If the submission is late the bid will be rejected. There will be no exceptions. Responders submitting bids shall be responsible for all cost of preparing such bids.

Responders to this Invitation for Bids shall closely examine the specific requirements noted herein and the attached Terms and Conditions and submit one (1) original and five (5) bound copies of their bid to the address listed below. To ensure acceptance of the bid, the Invitation for Bids number (IFB#02-07/19/16) should be clearly shown on the lower left corner of the return envelope. Facsimile transmittals or offers communicated by telephone will not be accepted or considered.

County of Greenville
Department of General Services
Procurement Services Division, Attn: Procurement Director
301 University Ridge, Suite 100
Greenville, South Carolina 29601-3665
IFB# 02-07/19/16

B. License and Permits

The contractor shall obtain all applicable licenses, and promptly pay all taxes required by the State of South Carolina, and/or Greenville County.

VII. Statement of Qualifications

Vendors shall provide the following with their response:

1. Overview of company background.
2. Copy of General Contractor's License and Certifications.
3. Staffing or organizational chart showing staff that will be used for this project.
4. Corporate/individual qualifications and experiences, including certifications.
5. Current resume(s) for individuals(s) assigned to this project.
6. A list of at least three (3) references where Vendor provides services similar to the services under consideration in this IFB. Include the name of the facilities, address and telephone number, plus the name of a contact person and title. Greenville County may contact the references at any time during the review of the IFB.

VIII. Inquiries and Addenda

A. Questions

All questions concerning this IFB are to be submitted in writing via fax, electronic mail, or regular mail to Bob Brewer, CPPO, CPPB, Procurement Services Division, to the address listed below, no later than **5:00 P.M., E.D.T., JULY 7, 2016**. Please refer all questions in writing about this Invitation for Bids and project to:

County of Greenville
Bob Brewer, CPPO, CPPB
Procurement Services Division
301 University Ridge, Suite 100
Greenville, South Carolina 29601-3665
Phone: (864) 467-7206 Fax:(864) 467-7304
E-mail: rbrewer@greenvillecounty.org

All inquiries and responses will be distributed to all vendors known to have received the IFB document. The County will not be responsible for or bound by any oral instructions made by any employee(s) of the County in regard to this IFB.

B. Addenda

This IFB represents the most definite statement Greenville County will make concerning information upon which bids are to be based. Any changes to this IFB will be in the form of a written addendum, which will be furnished to all vendors who are listed with the County as having received an IFB document. No addenda will be issued later than five (5) working days prior to the date for receipt for bids except an addendum which, if necessary, postpones the date for receipt of bids or cancels this IFB. Venders shall acknowledge receipt of all addenda with their Bid.

IX. General Information

A. Proprietary Information

The County of Greenville is a public body and governed by the South Carolina Freedom of Information Act. Documents submitted to the County relating to this Invitation for Bids are subject to requirements of the Freedom of Information Act and may be deemed public records.

B. Errors and Omissions

The Responder will not be allowed to take advantage of any errors or omissions in the Invitation for Bids. Where errors or omissions appear in the IFB, the Responder shall promptly notify the County of Greenville in writing of such error or omission it discovers. Any significant error, omission and/or inconsistency in the specifications are to be reported as soon as possible but no later than five (5) days before such time the response is to be submitted.

C. Withdrawal of Bid

An official representative of a Responder may withdraw a Responder's response at any time prior to the bid submission deadline. Acceptable proof establishing that he/she is the representative of the Responder must be provided.

D. Non-Endorsement

If the County awards contract, the successful Responder shall not issue any news release or other statement relating to the award or servicing of the agreement which state or imply the County of Greenville's endorsement of the successful Responder's services.

X. Insurance

The Contractor is responsible for and must have all required insurance listed below and shall not commence work under the associated contract until it has obtained all insurance required, and the County has approved such insurance in writing, nor shall the Contractor allow any subcontractor to commence work on its subcontract until all similar insurance required of the subcontractor has been obtained. All insurance policies shall be maintained for the life of the contract.

A. **THE COUNTY SHALL BE NAMED AS "ADDITIONAL INSURED" FOR ITS INTEREST** on all policies of insurance except Worker's Compensation, Automobile Liability, and Professional Errors and Omissions, as regards ongoing operations, products and completed operations, and this shall be noted on the face of the Certificate of Insurance. As a part of the certificate of insurance requirement the contractor shall also include acknowledgement and acceptance of the wavier of subrogation provision granted to the County of Greenville. This acknowledgement and acceptance should be included in the same section of the Certificate of Insurance that evidences the "Additional Insured" provision.

B. Certificates for all such policies of insurance shall be provided by the **Contractor's** insurance agent or broker to the **County** within 10 working days from the date of Notice of Award.

C. All Certificates of Insurance submitted shall provide on the face of the certificate reference to **County's** IFB# 02-07/19/16.

D. **Contractor** will provide **County** a minimum of 30 days advance notice in the event the insurance policies (or an insurance policy) are canceled. Subcontractors approved to perform work on this project are subject to all of the requirements in this Section.

E. **Contractor** agrees to maintain and keep in force during the life of this Agreement, with a company or companies authorized to do business in South Carolina, the following insurance policies:

Comprehensive General Liability:
$1,000,000 per occurrence - combined single limit / $2,000,000 general aggregate, to include products and completed operations.

Automobile Liability:
$1,000,000 per occurrence - combined single limit (Coverage shall include bodily injury and property damage and cover all vehicles including owned, non-owned and hired)

Statutory Worker's Compensation:
Coverage A - State of SC
Coverage B - Employers liability
$1,000,000 Each Accident
$1,000,000 Disease, Per Employee
$1,000,000 Disease, Policy Limit
Policy shall contain a waiver of subrogation in favor of and/or applies to the County of Greenville, its departments, agencies, boards, employees, and commissions for losses from work performed by or on behalf of the contractor.

No deviation from this coverage's will be accepted unless, in the County's sole discretion, it is more advantageous to the County, i.e., $1,000,000 - a $2,000,000 or $5,000,000 limit would be acceptable.

XI. Evaluation Criteria

The bids will be evaluated on the following criteria which are in no particular order. Greenville County reserves the right to interview responders to this IFB at its discretion. Greenville County will not be responsible for any costs associated with interviews of responders.

- Responsiveness to this Invitation for Bids
- Cost
- Experience in providing services of similar size and scope
- References

XII. Illegal Immigration Reform Act Compliance

By submitting an offer, Contractor certifies that it will comply with the applicable requirements of Title 8, Chapter 14 of the South Carolina Code of Laws (originally enacted as Section 3 of The South Carolina Illegal Immigration Reform Act , 2008 S.C. Act No. 280) and agrees to provide upon request any documentation required to establish either: (a) the applicability of Title 8, Chapter 14 to Contractor and any subcontractors or sub-subcontractors; or (b) the compliance with Title 8, Chapter 14 by Contractor and any subcontractor or sub-subcontractor. Pursuant to Section 8-14-60, "A person who knowingly makes or files any false, fictitious, or fraudulent document, statement, or report pursuant to this chapter is guilty of a felony, and upon conviction, must be fined within the discretion of the court or imprisoned for not more than five years, or both." Contractor agrees to include in any contracts with its subcontractors language requiring the subcontractors to (a) comply with the applicable requirements of Title 8, Chapter 14, and (b) include in any contracts with the sub-subcontractors language requiring the sub- subcontractor to comply with the applicable

requirements of Title 8, Chapter 14. In the event any contractor, subcontractor and/or sub-subcontractor is found not to be in compliance with the SC Immigration Reform Act [hereinafter "The Act"], the contractor agrees to fully indemnify the County for any loss suffered by the County as a result of such contractor, subcontractor or sub-subcontractor's failure to comply with the Act.

XIII. Sample Contract

A sample Contract is attached for review.

COUNTY OF GREENVILLE
PROCUREMENT SERVICES DIVISION
CONSTRUCTION OF EAST RIVERSIDE
PARK RESTROOMS
IFB #02-07/19/16

INSTRUCTIONS/TERMS AND CONDITIONS:

1. IFB Opening and Award: Bids will be examined promptly after opening and each bid will be announced to all participants. However, no decision will be made until Procurement and the user Division have had ample time to review each bid. However, award will be made at the earliest possible date. The County reserves the right to award in whole or in part, by item, group of items, geographic area or by section where such action serves the County's best interest. The contract will be awarded to the bid that meets the requirements and criteria set forth in the invitation for bid. No bid may be withdrawn for a period of sixty (60) days after bid opening date. Bids, whether mailed or hand delivered, must be received and time/date stamped in the Procurement Services Office by the closing time and date indicated on the bid. Bids received after the bid closing time/date will not be accepted. By submission of a bid, you are guaranteeing that all goods and services meet the requirement of the solicitation during the contract period.

2. Rights Reserved by Greenville County: Greenville County reserves the right to reject any and all bids, any portion thereof, and waive any technicalities. Accordingly, the right is reserved to make awards in the best interest of the County. Integrity, reputation, experience and past performance will be heavily weighed in bid evaluation. This solicitation does not commit the County of Greenville to award a contract, to pay any costs incurred in the preparation of the bid, or to procure or contract for goods or services listed herein.

3. Responders Qualification: Responders must, upon request of the County, furnish satisfactory evidence of their ability to furnish products or services in accordance with the terms and conditions of these specifications. The County reserves the right to make the final determination as to the bidders ability to provide the products or services requested herein.

4. Responders Responsibility: Each bidder shall be fully acquainted with the conditions relating to the scope and restrictions attending the execution of the work under the conditions of this bid. It is expected that this will sometimes require on-site observation. The failure or omission of a bidder to be acquainted with existing conditions shall in no way relieve the bidder of any obligations with respect to this bid or to any contract as a result of this bid.

5. References: The County requires bidders to list at least three (3) references, names, addresses and telephone numbers of contact persons for companies with whom the bidder has performed or provided similar work, service or product.

6. Waiver: The County reserves the right to waive any Instructions to Bidders, General or Special Terms and Conditions, specifications, or technicalities when it is deemed to be in the best interest of the County to do so.

7. Rejection: Greenville County reserves the right to reject any bid that contains prices for individual items or services that are inconsistent or unrealistic when compared to pricing of like bids; or ambiguous bids which are uncertain as to terms, delivery, quantity, or compliance with specifications may be rejected or otherwise disregarded if such action is in the best interest of the County.

8. Bid form: Each bidder must submit a bid on the form provided. The bidder shall sign his bid correctly or the bid may be rejected. If the bid shows any omissions, alteration of form, unauthorized additions, a conditional bid or any irregularities of any kind, bid may be rejected. Bid may not be accepted on any other form then the bid form provided.

9. Questions: Questions shall be submitted in writing to Bob Brewer, CPPB, Procurement Services Division, County of Greenville, 301 University Ridge, Suite 100 by Fax (864) 467-7304 or by E-Mail to rbrewer@greenvillecounty.org by 5:00 P.M., E.D.T., July 7, 2016.

10. Bid Bond: Bidders shall submit with their bid a bid bond in the amount of 5% of the bid price. This bond may be in the form of Bid Bond from the American Institute of Architects, Certified Check, Cashier's or Bank Money Order of any national or state bank and shall be made payable to Greenville County. Bids submitted without being accompanied by any of the foregoing as required, shall be considered informal and will be rejected. Any bid accompanied by a bid bond not properly executed in the opinion of the County Attorney, may be rejected. The bond will be forfeited to the County by the successful bidder as liquidated damages in case a bid award is made to that bidder and the contract and bond are not promptly and properly executed.

11. Return of Bid Bond: When bids are awarded, the Procurement Services Division will return immediately all checks, except that of the successful bidder. The check of the successful bidder will be returned upon compliance with the performance and payment bond requirements.

12. Performance and Payment Bond: The successful bidder, within fifteen (15) working days after acceptance of the bidder's offer by the County, shall furnish a satisfactory performance and payment bond in the amount of the total bid price. The performance and payment bond must be received by the county prior to issuance of an executed contract and Notice to Proceed. The fifteen (15) working days may be extended upon written approval by the Procurement Services Director. A copy of the written approval shall be transmitted to the successful bidder stating the terms of any extension. In the event that the bidder fails to deliver to the County Procurement Services Division the performance and payment bond in said period of fifteen (15) working days after acceptance of the bidder's offer by the County, then the bid bond of the bidder shall be retained by the County in its entirety and the award will be withdrawn from the bidder. The Bond must have approval by the County Attorney's Office before it is made effective. The successful bidder shall have as surety a corporate surety authorized to act as surety in South Carolina. The Performance and Payment Bond will insure that the successful bidder will promptly make payments to all persons supplying labor or materials to the bidder; and shall guarantee to indemnify and save the County, its officers, divisions, and employees harmless from all costs, damages, and expenses growing out of or by reason of the successful bidder's failure to comply and perform the work and complete the contract in accordance with the specifications in the matter of making, furnishing and/or delivering said work or supplies. The Performance and Payment Bond will be in effect for one year after completion of the contract.

13. Availability of Bonding Agency: In addition, the bonding company must have an agent available to meet with County officials to clarify and explain the County's responsibility in maintaining the integrity of the bond.

14. Specification Changes, Additions and Deletions: All changes in specifications shall be in writing in the form of an addendum and furnished to all bidders. The County of Greenville shall not be responsible for any verbal information given by any employees of the County of Greenville in regard to this bid.

15. Number of Bid Copies: Please submit One (1) Original and Five (5) Copies of your bid.

16. Bid Changes: Bids, amendments thereto or withdrawal requests received after the advertised time for bid opening, shall be void regardless of when they were mailed.

17. Bid Price: The bid price presented as a result of these specifications shall be for the contract period. The bid shall be acceptable for sixty (60) days from the date of opening. All prices and notations shall be printed in ink or typewritten. Errors should be crossed out, corrections entered and initialed by the person signing the bid. Erasures or use of typewriter correction fluids may be cause for rejection. No bid shall be altered or amended after specified time for opening.

18. Federal, State and Local Laws: The contractor assumes full responsibility and liability for compliance with any and all local, state and federal laws and regulations applicable to the contractor and his employees including, but not limited to, compliance with the EEO guidelines, the Occupational Safety and Health Act of 1970, and minimum wage guidelines.

19. Tie Bids: In the case of tie bids, the County reserves the right to make the award based on the factors outlined in Section 3-202 of the Procurement Ordinance, or in what it considers to be in the best interest of the County.

20. Deduction and Holdbacks: In addition to the County's right of termination, the County shall be entitled to full reimbursement for any costs incurred by the County by reason of the contractor's failure to perform or to satisfactorily perform its responsibilities and duties. Such costs may include, but are not limited to, the cost of using the County's employees or employees of any other entity to perform the obligations of the contract. The County may obtain any such reimbursement by deduction from payments otherwise due to the contractor or by any other proper and lawful means. All deductions from any money due the contractor are to be as liquidated damages and not as a penalty. It is the County's intent to give the contractor a reasonable opportunity whenever practicable, to correct any such failure to perform or satisfactorily perform its responsibilities and duties. In no circumstances shall any uncorrected situation extend for more than five (5) days. The County will make the following deductions from the contract sum in the event that the contractor fails to perform any of the required work within the required time limits in the event the County carries out the work using its forces or another contractor.

    1. For use of County's forces – actual cost involved.

    2. For use of another contractor – the amount charged by said contractor.

The County reserves the right to hold back and/or withhold part of complete payments for unsatisfactory work, deficiencies, etc. until said defects are satisfactorily corrected or cleared.

21. Evaluation Criteria: The bids will be evaluated on the following criteria which are in no particular order. Greenville County reserves the right to interview responders to this IFB at its discretion. Greenville County will not be responsible for any costs associated with interviews of responders.

- Responsiveness to this Invitation for Bids
- Cost
- Experience in providing services of similar size and scope
- References

22. Quality: Unless otherwise indicated in this bid it is understood and agreed that any items offered or shipped on this bid shall be new and in first class condition unless otherwise indicated herein.

23. MBE/WBE Participation – Affirmative Action:

A. MBE/WBE – Vendors submitting bids are encouraged to solicit MBE/WBE participation in fulfilling their contract. Indicate in your response any MBE/WBE areas of involvement for monitoring purposes.

B. The successful bidder will take affirmative action in complying with all Federal and State requirements concerning fair employment and treatment of all employees, without regard or discrimination by reason of race, color, religion, age, sex, national origin or physical handicap.

24. Default: In case of default by vendor the County may procure the item or services from other sources and may recover the loss occasioned thereby from any unpaid balance due the vendor or by proceeding against the vendor's performance bond, if any, and/or by suit against vendor.

25. Termination: This contract is subject to termination for failure to comply with the specifications, terms and conditions by the County or the contractor upon written notice by registered mail. Such termination will be effective not less than ten (10) days nor more than sixty (60) days after receipt of such notice from the County nor less than thirty (30) days nor more than sixty (60) days after receipt by the County from the contractor. Receipt of notice by one party to terminate the contract will nullify any subsequent reciprocal notice by the receiving party prior to the announced termination date. In the event of termination the County shall be responsible to pay the contractor only for work satisfactorily completed upon the effective date of termination and shall not be responsible for any other charges.

26. Termination for Convenience: Greenville County may terminate for convenience any contract resulting from this solicitation by providing sixty (60) calendar days advance written notice to the vendor.

27. Non-Appropriation: Any contract entered into by the County resulting from this invitation shall

be subject to cancellation without damages or further obligation when funds are not appropriated or otherwise made available to support continuation of performance in a subsequent fiscal period or appropriated year.

28. Incorporation of Bid into Contract: The terms, conditions, and specifications of this bid and the selected firm's response are to be incorporated into the contract.

29. S.C. Law Clause: Upon award of contract under this bid, the person, partnership, association or corporation to whom the award is made must comply with the laws of South Carolina which require such person or entity to be authorized and/or licensed to do business with this State. Notwithstanding the fact that applicable statutes may exempt or exclude the successful bidder from requirements that it be authorized and/or licensed to do business in this State, by submission of this signed bid, the bidder understands and agrees to be bound to the jurisdiction and process of the courts of the State of South Carolina, as to all matters and conflicts or future conflicts under the contract and the performance thereof, including any questions as to the liability for taxes, licenses, or fees levied by the State.

30. Assignment Clause: Successful bidder will be required to give the County ninety (90) days notice in the event of a change in the ownership of this contract. The County is under no obligation to continue this contract with an assignee. No contract or its provisions may be assigned, sublet, or transferred without the written consent of the County.

31. Indemnification: The contractor agrees to indemnify and save harmless the County of Greenville and all County officers, agents and employees from any and all claims, suits, actions, legal proceedings, damages, costs, expenses & attorney fees of every name and description, arising out of or resulting from the use of any materials furnished by the contractor, or any work done in the performance of the contract arising out of a willful or negligent act or omission of the provider, its officers, agents and employees; provided that such liability is not attributable to a willful or negligent act or omission on the part of the County, its officers, agents and employees.

32. Deviations from Specifications: Any deviation from specifications indicated herein must be clearly pointed out; otherwise, it will be considered that items offered are in strict compliance with these specifications, and successful bidder will be held responsible therefore. Deviations must be explained in detail on separate attached sheets(s). The listing of deviations, if any, is required but will not be construed as waiving any requirements of the specifications. Deviations found in the evaluation of the bid and not listed may be cause for rejection. Bidders offering substitute or equal items must provide information sufficient enough to determine acceptability of item offered.

33. Minor Deviations: The County reserves the right to negotiate minor deviations from the prescribed terms, conditions and requirements with the selected vendor.

34. Price Reductions: By submitting a bid in response to this solicitation, bidder guarantees that Greenville County is receiving the lowest price offered by bidder's company for like items/services to other customers. If at any time during the contract period, bidder offers a lower

price to another customer, upon discovery Greenville County shall reserve the right to take any or all of the following actions:

a) Cancel the contract, if it is currently in effect;

b) Determine the amount, which the County was overcharged and submit a request for payment from the bidder for that amount or deduct the difference from any amount due the bidder;

c) Demand that the bidder offer the County the same pricing schedule;

d) Take the necessary steps to collect any performance surety provided on the applicable contract.

35. Contractor License Requirement: The contractor shall procure all permits and licenses, and pay all charges and fees necessary and incidental to the lawful conduct of his business. He shall keep himself fully informed of existing and future Federal, State, and Local Laws, ordinances and regulations, which in any manner affect the fulfillment of his contract and shall comply with the same.

36. Conflict of Interest Statement: The contractor may become involved in situations where a conflict of interest could occur due to individual or organizational activities within the County. The vendor, by submitting a bid, is in essence assuring the County that his company, and/or subcontractors, is in compliance with all federal, state, and local conflict of interest laws, statutes, and regulations.

37. Insurance:

The Contractor is responsible for and must have all required insurance listed below and shall not commence work under the associated contract until it has obtained all insurance required, and the County has approved such insurance in writing, nor shall the Contractor allow any subcontractor to commence work on its subcontract until all similar insurance required of the subcontractor has been obtained. All insurance policies shall be maintained for the life of the contract.

A. THE COUNTY SHALL BE NAMED AS "ADDITIONAL INSURED" FOR ITS INTEREST on all policies of insurance except Worker's Compensation and Professional Errors and Omissions regarding ongoing operations, products and completed operations, and this shall be noted on the face of the Certificate of Insurance. As a part of the certificate of insurance requirement the contractor shall also include acknowledgement and acceptance of the wavier of subrogation provision granted to the County of Greenville. This acknowledgement and acceptance should be included in the same section of the Certificate of Insurance that evidences the "Additional Insured" provision.

B. Certificates for all such policies of insurance shall be provided by the contractor's insurance agent or broker to the County within 10 working days from the date of Notice of Award.

C All Certificates of Insurance submitted shall provide on the face of the certificate reference to County's IFB# 02-07/19/16.

D. Contractor will provide County a minimum of 30 days advance notice in the event the insurance policies (or an insurance policy) is canceled.
Subcontractors approved to perform work on this project are subject to all of the requirements in this Section.

E. Contractor agrees to maintain and keep in force during the life of this Agreement, with a company or companies authorized to do business in South Carolina, the following insurance policies:

Comprehensive General Liability:
1,000,000 per occurrence - combined single limit / $2,000,000 general aggregate, to include products and completed operations.

Automobile Liability:
$1,000,000 per occurrence - combined single limit (Coverage shall include bodily injury and property damage and cover all vehicles including owned, non-owned and hired)

Statutory Worker's Compensation:
Coverage A - State of SC
Coverage B - Employers liability
$1,000,000 Each Accident
$1,000,000 Disease, Per Employee
$1,000,000 Disease, Policy Limit
Policy shall contain a waiver of subrogation in favor of and/or applies to the County of Greenville, its departments, agencies, boards, employees, and commissions for losses from work performed by or on behalf of the contractor.

No deviation from these coverages will be accepted unless, in the County's sole discretion, it is more advantageous to the County, i.e., $1,000,000 - a $2,000,000 or $5,000,000 limit would be acceptable.

38. Contracts: The County reserves the option to prepare and negotiate its own contract with the vendor, giving due consideration to the stipulations of the vendor's contracts and associated legal documents. Vendors should include with their submittal a copy of any proposed standard contract.

39. Contractor Liability: The contractor assumes full responsibility for all injuries to, or death of any person and for all damage to property, including property and employees of the County and for all claims, losses or expense which may in any way arise out of the performance of the work, whether caused by negligence or otherwise; and the contractor shall indemnify and save the County harmless from all claims, losses, expense, or suits for any such injuries, death or damages to property, and from all liens, losses, expenses, claims or causes of action of any sort which may arise out of the performance of the work, and shall defend, on behalf of the County and suit brought against the County for attorney's fees and for all other expenses incurred by the County in connection with or as a result of any such suit, claims, or loss. Under no

circumstances and with no exception will Greenville County act as arbitrator between the contractor and any subcontractor. The contractor will be solely responsible for compliance with building code requirements, all dimensions, and all conditions relating to his work under this contract. Workmanship shall be first quality in every respect. All measures necessary to ensure a first class job shall be taken.

40. Sub-Contracting: The contractor shall not subcontract any portion of this contract without proper written approval from the County.

41. Non-Collusion: The contractor expressly warrants and certifies that neither the Contractor nor its employees or associates has directly or indirectly entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in conjunction with this bid.

42. Prohibition of Gratuities: Neither the contractor nor any person, firm or corporation employed by the contractor in the performance of the contract shall offer or give, directly or indirectly, to any employee or agent of the County, any gift, money, or anything of value, or promise any obligations, or contract for future reward or compensation at any time during the term of this contract.

43. Publicity Releases: Contractor agrees not to refer to the award of this contract in commercial advertising in such a manner as to state or imply that the products or services provided are endorsed or preferred by the user. The contractor shall not have the right to include the County's name in its published list of customers without prior approval of the County. With regard to news releases, only the name of the County, type and duration of contract may be used and then only with prior approval of the County. The contractor also agrees not to publish, or cite in any form, any comments or quotes from the County Staff unless it is a direct quote from the Public Information Officer.

44. Public Record: All information submitted relating to this bid, except for proprietary information, shall become part of the public record to the extent required by the Freedom of Information Act. Vendors shall be responsible for clearly marking all information submitted that is proprietary based on the Freedom of Information Act. The County assumes no responsibility for the release of information not clearly and properly labeled as proprietary.

45. Precedence: In the event of conflict between the terms and conditions and the specifications, the more restrictive instruction shall take precedence unless stated otherwise in the specifications.

46. Illegal Immigration Reform Act Compliance: By submitting an offer, Contractor certifies that it will comply with the applicable requirements of Title 8, Chapter 14 of the South Carolina Code of Laws (originally enacted as Section 3 of The South Carolina Illegal Immigration Reform Act , 2008 S.C. Act No. 280) and agrees to provide upon request any documentation required to establish either: (a) the applicability of Title 8, Chapter 14 to Contractor and any subcontractors or sub-subcontractors; or (b) the compliance with Title 8, Chapter 14 by Contractor and any subcontractor or sub-subcontractor. Pursuant to Section 8-14-60, "A person who knowingly makes or files any false, fictitious, or fraudulent document, statement, or report pursuant to this

chapter is guilty of a felony, and upon conviction, must be fined within the discretion of the court or imprisoned for not more than five years, or both." Contractor agrees to include in any contracts with its subcontractors language requiring the subcontractors to (a) comply with the applicable requirements of Title 8, Chapter 14, and (b) include in any contracts with the sub-subcontractors language requiring the sub- subcontractor to comply with the applicable requirements of Title 8, Chapter 14. In the event any contractor, subcontractor and/or sub-subcontractor is found not to be in compliance with the SC Immigration Reform Act [hereinafter "The Act"], the contractor agrees to fully indemnify the County for any loss suffered by the County as a result of such contractor, subcontractor or sub-subcontractor's failure to comply with the Act.

47. Safety, Health, and Security: Contractor shall be solely responsible for its activities, that of its employees on the site and activities of its consultants, contractors and/or subcontractors for maintaining a safe job site. Contractor's activities and activities of its consultants, contractors and/or subcontractors shall comply with all local, state, and federal safety regulations and their enforcement agencies. Contractor shall at all times conduct its operations under this Contract in a manner to avoid risk of endangerment to the health and safety of persons and property. The Contractor shall have sole responsibility for implementing its safety and health programs, taking all safety and health precautions necessary and continuously inspecting all equipment, materials and work to prevent, discover, determine and correct any conditions which might result in personal injury, equipment damage or damage to property or the public. Contractor's safety, health and security programs shall be in compliance with all regulatory requirements and shall furnish accident, incident, injury, and other records and reports required by the Occupational Safety and Health Administration, State and Local laws, or by the County.

48. ADA Compliance: All work shall be compliant with the full intent of all ADA (Title II) guidelines for accessibility, play components and design. The Department of Justice's regulation implementing Title II, subtitle A, of the ADA applies to State and local government entities, and protects qualified individuals with disabilities from discrimination on the basis of disability in services, programs, and activities provided by State and local government entities. Further, all Local and County code compliances regarding ADA must be met. For additional information on ADA compliance, refer to (ADA.gov).

STATE OF SOUTH CAROLINA)
COUNTY OF GREENVILLE)

CONSTRUCTION AGREEMENT

THIS AGREEMENT is made and entered into on this _____ day of _____, 2016, by and between the **COUNTY OF GREENVILLE**, a political subdivision of the State of South Carolina, having its principle place of business at 301 University Ridge, Greenville, S.C. 29601 ("**COUNTY**"), and _____, located at _____ ("**CONTRACTOR**").

IN CONSIDERATION of the covenants hereinafter set forth, the parties mutually agree as follows:

1. **CONTRACT PERIOD**

This Agreement shall begin on the date the NOTICE TO PROCEED is issued by **COUNTY**. All work phases specified herein must be completed no later than sixty (60) calendar days from the effective date of the Notice to Proceed. If the **Contractor** fails to satisfactorily complete the work within the specified time, liquidated damages of $250.00 per calendar day shall be assessed up to value of the contract (total bid). The penalty may be drawn from any payment due, or the performance bond, at the discretion of the **County**.

2. **PROJECT SCOPE**

COUNTY has employed **CONTRACTOR** to provide the demolition of the old restrooms and the construction of the new restrooms at East Riverside Park located at 1155 South Suber Road, Greer, SC 29650. The services to be provided by **CONTRACTOR** are more particularly described in **COUNTY'S** IFB #02-07/19/16 and in **CONTRACTOR'S** response to IFB #02-07/19/16 received _____, which are both attached hereto and incorporated herein by reference. **CONTRACTOR** acknowledges that it is an independent contractor and that it will at all times act as such. Nothing in this Agreement shall be deemed to constitute **CONTRACTOR** or any of its employees as the agent, representative or employee of **COUNTY**, or create a joint venture between the parties.

3. **PAYMENT TERMS**

3.1 **COUNTY** agrees to pay **CONTRACTOR** for the services described in the Project Scope an amount not to exceed _____.

3.2 **CONTRACTOR** will submit monthly invoices to the **COUNTY**. Such invoices shall include a detailed listing of charges. **COUNTY** shall notify **CONTRACTOR** within ten (10) days of receipt of invoice of any dispute with the invoice and **CONTRACTOR**, upon such notice, shall provide back-up data to **COUNTY**. **COUNTY** and **CONTRACTOR** will, thereafter, promptly resolve any disputed items. Payment on undisputed invoice amounts is due upon receipt of invoice by **COUNTY** and is past due thirty (30) days from the date the invoice is received. If payment on undisputed invoice amounts remains past due sixty (60) days from the date the invoice is received by **COUNTY**, then **CONTRACTOR** shall have the right to either suspend all work under this Agreement, without prejudice, or terminate this Agreement in

SAMPLE CONTRACT

accordance with the provisions of Section 13.2. **COUNTY** shall, prior to making payment on any invoice, withhold ten (10%) percent from any payment due. The amounts so withheld shall be released to **CONTRACTOR** upon satisfactory completion of the Project.

3.3 Approval and/or payment of such invoices shall not in any way relieve **CONTRACTOR** of its liability to **COUNTY** for deficiencies in the performance of its services. **COUNTY'S** approval or acceptance of, or payment for any of the services shall not operate as a waiver of any rights to which **COUNTY** may be entitled.

3.4 **NO INTEREST OR OTHER LATE PENALTIES SHALL ACCRUE ON LATE PAYMENTS.**

3.5 **IT IS UNDERSTOOD AND AGREED BY THE PARTIES THAT IN THE EVENT FUNDS ARE NOT APPROPRIATED IN THE CURRENT FISCAL YEAR OR ANY SUBSEQUENT FISCAL YEAR, THIS CONTRACT WILL BECOME NULL AND VOID AND THE COUNTY WILL ONLY BE REQUIRED TO PAY FOR SERVICES COMPLETED TO THE SATISFACTION OF THE COUNTY.**

4. **CHANGES**

4.1 **COUNTY** may, at any time, in writing, and within the general scope of this Agreement, make "Request for Changes" in the services or work to be performed. In the event **CONTRACTOR** is requested to perform additional services or work not contemplated by this Agreement, **CONTRACTOR** will promptly notify **COUNTY** if such change causes an increase in **CONTRACTOR'S** cost of, or time required for, performance of any services under this Agreement, an equitable adjustment shall be made and this Agreement shall be modified in writing accordingly. In the event **CONTRACTOR** is requested to reduce the performance of services or scope of work, such request must be in writing. In the event **CONTRACTOR** is requested to reduce the performance of services or scope of work **COUNTY** shall be entitled to a decrease in the amount of compensation to be paid to **CONTRACTOR** accordingly.

4.2 All change orders must be in writing to be valid, and no services for which any additional compensation will be charged by **CONTRACTOR** shall be furnished without the written authorization of **COUNTY**.

4.3 **COUNTY** may add to or reduce the scope of work by generating mutually agreed upon contract exhibits to this basic agreement.

5. **WARRANTIES**

In addition to any express and/or implied warranties provided to **COUNTY** by law, **CONTRACTOR** warrants to **COUNTY** that the performance of the services covered by this Agreement will be competent to perform the tasks undertaken, that the product of such paving services will yield only first-class results, that materials and equipment furnished will be of good quality and new unless otherwise permitted by this Agreement, and that the work

SAMPLE CONTRACT

will be of good quality, free from faults and defects and in strict conformance with this Agreement. All work not conforming to these requirements may be considered defective. In the event any of the work is found to be defective or not in accordance with this Agreement within one (1) year after completion of the contract services, **CONTRACTOR** will promptly correct the work without additional compensation from **COUNTY**, upon written notice from **COUNTY**. All corrective work shall be completed within thirty (30) days of receipt of written notice from **COUNTY**. Establishment of the one year time period in this section relates only to the duty of **CONTRACTOR** to specifically correct the work.

6. **WITHHOLDING PAYMENT**

COUNTY has the right, but not the obligation, to withhold funds to the extent and only to the extent necessary to protect **COUNTY** from loss because of:

a) Defective work not remedied by **CONTRACTOR** within a reasonable time or for which **CONTRACTOR** has failed to initiate a remedy within a reasonable time;

b) Claims of third parties against **COUNTY** or **COUNTY'S** property for which **CONTRACTOR** is liable;

c) Failure by **CONTRACTOR** to pay subcontractors or others in a prompt and proper fashion the amounts due and owing to such subcontractor or others relating to the Project.

d) Evidence that the balance of the work cannot be completed in accordance with this Agreement for the unpaid balance of the Contract Price;

e) Evidence that the work will not be completed in the time required for final completion;

f) Persistent failure to carry out the work in accordance with this Agreement, or

g) Damage to the **COUNTY** or a third party to whom the **COUNTY** is, or may be, liable and for which **CONTRACTOR** is liable pursuant to the terms of this Agreement.

7. **RIGHT TO STOP WORK**

In the event **CONTRACTOR** fails to perform the work in accordance with this Agreement, **COUNTY** may order **CONTRACTOR** to stop the work and **COUNTY** may then perform the work in accordance with Section 8, below, or terminate this Agreement in accordance with Section 13.1.2. In such event, **CONTRACTOR** shall immediately obey such stop work order.

8. **COUNTY'S RIGHT TO PERFORM WORK**

In the event **CONTRACTOR'S** work is stopped pursuant to Section 7, above, entitled "Right to Stop Work", and **CONTRACTOR** fails to provide adequate assurance to **COUNTY**, within seven (7) days of such stoppage, that the cause of such stoppage will be eliminated or corrected, then **COUNTY** may proceed to carry out the subject work or terminate this Agreement. In such a situation, an appropriate Change Order shall be issued deducting from the Contract Price the documented and agreed to cost of correcting the deficiencies, including any professional services and expenses necessitated thereby. If the unpaid portion of the Contract Price is insufficient to cover the amount due **COUNTY**, **CONTRACTOR** shall pay the difference to **COUNTY**; provided, however if **COUNTY** stops
the work, takes over a portion of or all of the work and performs the work, then

SAMPLE CONTRACT

CONTRACTOR'S WARRANTY OBLIGATIONS relating to such work performed by **COUNTY** shall be null and void.

9. **INDEMNIFICATION.**

CONTRACTOR agrees to assume responsibility for any damage, loss, or injury, including death, of any kind or nature whatever to person or property, including employees and property of **COUNTY**, caused by or resulting from any negligent act or omission of **CONTRACTOR** or its subcontractors or any of their officers, agents, servants, or employees, arising from the performance of the work under this Agreement. **CONTRACTOR** shall defend, indemnify, and hold harmless **COUNTY** and all of its officers, agents, servants, or employees from and against any and all claims, loss, damage, charge, or expense to which they or any of them may be put or subjected by reason of any such damage, loss, or injury. **CONTRACTOR** expressly agrees to defend against any claims brought or filed against **COUNTY**, where such claim or action involves, in whole or in part, the subject of the indemnity contained herein, whether such claims or actions are rightfully or wrongfully brought or filed.

10. **INSURANCE.**

The contractor is responsible for and must have all required insurance listed below and shall not commence work under the associated contract until it has obtained all insurance required, and the County has approved such insurance in writing, nor shall the Contractor allow any subcontractor to commence work on its subcontract until all similar insurance required of the subcontractor has been obtained. All insurance policies shall be maintained for the life of the contract.

A. **THE COUNTY SHALL BE NAMED AS "ADDITIONAL INSURED" FOR ITS INTEREST** on all policies of insurance, except Worker's Compensation, Auto Liability and Professional Errors and Omissions, regarding ongoing operations, products and completed operations, and this shall be noted on the face of the Certificate of Insurance. As a part of the certificate of insurance requirement the contractor shall also include acknowledgement and acceptance of the wavier of subrogation provision granted to the County of Greenville. This acknowledgement and acceptance should be included in the same section of the Certificate of Insurance that evidences the "Additional Insured" provision.

B. Certificates for all such policies of insurance shall be provided by the **Contractor's** insurance agent or broker to the **County** within 10 working days from the date of Notice of Award.

C. All Certificates of Insurance submitted shall provide on the face of the certificate reference to County's IFB #02-07/19/16.

D. **Contractor** will provide **County** a minimum of 30 days advance notice in the event the insurance policies (or an insurance policy) is canceled.
Subcontractors approved to perform work on this project are subject to all of the requirements in this Section.

SAMPLE CONTRACT

E. **Contractor** agrees to maintain and keep in force during the life of this Agreement, with a company or companies authorized to do business in South Carolina, the following insurance policies:

Comprehensive General Liability:
1,000,000 per occurrence - combined single limit / $2,000,000 general aggregate, to include products and completed operations.

Automobile Liability:
$1,000,000 per occurrence - combined single limit (Coverage shall include bodily injury and property damage and cover all vehicles including owned, non-owned and hired)

Statutory Worker's Compensation:
Coverage A - State of SC
Coverage B - Employers liability
$1,000,000 Each Accident
$1,000,000 Disease, Per Employee
$1,000,000 Disease, Policy Limit
Policies shall contain a waiver of subrogation in favor of and/or that applies to the County of Greenville, its departments, agencies, boards, employees, and commissions for losses from work performed by or on behalf of the contractor.

No deviation from these coverages will be accepted unless, in the County's sole discretion, it is more advantageous to the County, i.e., $1,000,000 - a $2,000,000 or $5,000,000 limit would be acceptable.

11. **PERFORMANCE AND PAYMENT BOND**

Contractor shall furnish a satisfactory Performance and Payment Bond in the amount of the total contract price no later than fifteen (15) business days after the date of the Notice of Award. The Bond must have approval by the County Attorney's Office before it is made effective. The **Contractor** shall have as surety a corporate surety authorized to act as surety in South Carolina. The Performance and Payment Bond shall remain in effect for one year after completion of the contract.

12. **ILLEGAL IMMIGRATION REFORM ACT COMPLIANCE**

By submitting an offer, **Contractor** certifies that it will comply with the applicable requirements of Title 8, Chapter 14 of the South Carolina Code of Laws (originally enacted as Section 3 of The South Carolina Illegal Immigration Reform Act , 2008 S.C. Act No. 280) and agrees to provide upon request any documentation required to establish either: (a) the applicability of Title 8, Chapter 14 to **Contractor** and any subcontractors or sub-subcontractors; or (b) the compliance with Title 8, Chapter 14 by **Contractor** and any subcontractor or sub-subcontractor. Pursuant to Section 8-14-60, "A person who knowingly makes or files any false, fictitious, or fraudulent document, statement, or report pursuant to this chapter is guilty of a felony and upon conviction, must be fined within the discretion of the court or imprisoned for not more than five years, or both." **Contractor** agrees to include in any contracts with its subcontractors language requiring the subcontractors to (a) comply with the applicable

SAMPLE CONTRACT

requirements of Title 8, Chapter 14, and (b) include in any contracts with the sub-subcontractors language requiring the sub- subcontractor to comply with the applicable requirements of Title 8, Chapter 14. In the event any contractor, subcontractor and/or sub-subcontractor is found not to be in compliance with the SC Immigration Reform Act [hereinafter "The Act"], the contractor agrees to fully indemnify the County for any loss suffered by the County as a result of such contractor, subcontractor or sub-subcontractor's failure to comply with the Act.

13. TERMINATION

13.1 TERMINATION BY COUNTY

13.1.1 This Agreement may be terminated by **COUNTY** upon fifteen (15) days written notice at **COUNTY'S** election. In the event of termination at **COUNTY'S** election and not due to the fault of **CONTRACTOR**, **CONTRACTOR** will be paid only for the work actually completed to the satisfaction of the **County** as of the date of termination.

13.1.2 Should **CONTRACTOR** default or persistently fail or neglect to carry out the work in accordance with the terms of this Agreement, **COUNTY** may by written notice to **CONTRACTOR**, without prejudice to any other right or remedy under this Agreement, terminate the employment of **CONTRACTOR** and take possession of the site and all materials, equipment, tools and construction equipment and machinery thereon owned by **CONTRACTOR** as well as all drawings, plans and specifications and finish the work by whatever methods **COUNTY** may deem expedient; provided, however, prior to such termination, **CONTRACTOR** shall be given notice of the default and an opportunity to cure such default within seven (7) days. Such termination shall be deemed "for cause". Should this Agreement be terminated "for cause", **CONTRACTOR** shall not be entitled to any further payment. In the event the actual and documented cost of finishing the work, including compensation for professional services and expenses made necessary thereby, if any, exceed the unpaid balance, **CONTRACTOR** shall pay the difference to **COUNTY**. This obligation for payment shall survive the termination of this Agreement.

13.2 TERMINATION BY CONTRACTOR

Should **COUNTY** fail to make payment on any undisputed invoice amount within sixty (60) days of receipt of such invoice, **CONTRACTOR** may elect to either suspend the work or terminate this Agreement; provided, however, prior to termination, **COUNTY** shall be given notice of the default and an opportunity to cure such default within seven (7) days. Should this Agreement be terminated by **CONTRACTOR**, **CONTRACTOR** shall be entitled to be paid only for the work actually completed to the satisfaction of the **County** as of the date of termination.

14. CLEANING THE SITE AND SAFETY

14.1 **CONTRACTOR** shall keep the site reasonably clean during performance of the work.

SAMPLE CONTRACT

CONTRACTOR shall dispose of all refuse at a South Carolina DHEC approved landfill.

14.2 **CONTRACTOR** shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to (1) employees on the job and other persons who may be affected thereby; (2) the work and materials and equipment to be incorporated herein; and (3) other property at or adjacent to the site.

14.3 **CONTRACTOR** shall give notices and comply with all laws, ordinances, rules, regulations and orders of public authorities bearing on the safety of persons and property and their protection from damage, injury or loss.

15. **ASSIGNMENT**

This Agreement shall not be assigned by either party without the prior written consent of the other party.

16. **SUBCONTRACTS**

16.1 **CONTRACTOR** shall promptly furnish to **COUNTY**, in writing, the bid list proposed by **CONTRACTOR** to act as subcontractors on the Project. **COUNTY** shall, within seven (7) days, reply to **CONTRACTOR**, in writing, stating any objections **COUNTY** may have to such proposed subcontractors. **CONTRACTOR** may enter into a subcontract with any subcontractor on the approved bid list. **CONTRACTOR** shall not be required to enter into a subcontract with any subcontractor to whom **CONTRACTOR** has objection.

16.2 All subcontractors shall provide performance and payment bonds in accordance with bonding requirements set forth in the Greenville County procurement policies and shall name **COUNTY** as an additional obligee on such bonds.

16.3 All subcontractors will be required to furnish Certificates of Insurance to the **County** in accordance with all of the requirements set forth in Section 10 of this Agreement.

17. **NOTICES**

All notices made pursuant to this Agreement shall be in writing and delivered personally or sent by registered or certified mail, return receipt requested, to the parties at their respective addresses set forth below:

COUNTY
Nadine Chasteen, CPPO, CPPB
Director
County of Greenville
Procurement Services Division
301 University Ridge, Suite 100
Greenville, SC 29601

CONTRACTOR

SAMPLE CONTRACT

Any party may change the person to whom notices are to be sent by giving ten (10) days written notice of such change to the other party.

18. **APPLICABLE LAW AND VENUE**

18.1 The construction, interpretation and performance of this Agreement shall be governed by and construed in accordance with the laws of the State of South Carolina.

18.2 **CONTRACTOR** and **COUNTY** further agree that this Agreement shall be deemed to have been made and performed in Greenville County, South Carolina. For the purposes of venue, all suits or causes of action arising out of this Agreement shall be brought in the courts of Greenville County, South Carolina.

19. **COMPLIANCE WITH FEDERAL, STATE AND LOCAL LAWS**

CONTRACTOR shall comply with all federal, state and local statutes, ordinances and regulations, and shall obtain all permits that are applicable to this Agreement.

20. **SUCCESSORS AND ASSIGNS**

CONTRACTOR and **COUNTY** each binds itself and its partners, successors, executors, administrators and assigns to the other party of this Agreement and to the partners, successors, executors, administrators, and assigns of such other party, in respect to all covenants of this Agreement.

21. **SEVERABILITY**

Should any section, paragraph, clause, phrase, or provision of this Agreement be adjudged invalid or held unconstitutional by a court of competent jurisdiction, such declaration shall not affect the validity of this Agreement as a whole or any part or provision thereof, other than the part so decided to be invalid or unconstitutional.

22. **ENTIRE AGREEMENT**

This Agreement, along with the provisions contained in **COUNTY'S** IFB #02-07/19/16, and **CONTRACTOR'S** RESPONSE TO IFB #02-07/19/16, attached hereto, represents the entire agreement between the parties and supersedes any and all prior agreements, whether written or oral, that may exist between the parties regarding same. If there is a conflict between any of the terms of these contract documents the order of precedence of these contract documents shall be:

A. Any Change Order or Amendment signed and executed by the parties;
B. This Agreement;
C. **CONTRACTOR'S** RESPONSE TO IFB #02-07/19/16
D. Addenda to **COUNTY'S** IFB# 02-07/19/16
E. **COUNTY'S** IFB #02-07/19/16.

SAMPLE CONTRACT

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date hereinabove written.

WITNESSES:

_____

_____

CONTRACTOR

By: _____

Its: _____

COUNTY OF GREENVILLE

By: _____
Bob Taylor, Chairman
Greenville County Council

By: _____
Joseph M. Kernell
County Administrator

ATTEST:

_____
Theresa B. Kizer, c.c.c.
Clerk to Council

SAMPLE CONTRACT

GREENVILLE COUNTY
PROCUREMENT SERVICES DIVISION
GREENVILLE COUNTY SQUARE
301 UNIVERSITY RIDGE, SUITE 100
GREENVILLE, SOUTH CAROLINA 29601-3660

Greenville County

CONSTRUCTION OF EAST RIVERSIDE PARK RESTROOMS
IFB# 02-07/19/16
Bid Sheet

QUANTITY	COMMODITIES OR SERVICES	UNIT	PRICE
1EA	DEMOLITION OF OLD RESTROOMS	LS	_____
1EA	CONSTRUCTION OF NEW RESTROOMS	LS	_____
	TOTAL		_____
	LISTING OF SUB-CONTRACTORS AND THEIR SERVICE (MECHANICAL, ELECTRICAL, ETC.)		
	_____		
	_____		
	_____		
	_____		
	_____		
	_____		
	_____		
	_____		
	_____		
	NOTICE TO BIDDERS: All taxes on any item, that Greenville County may require to pay, must be shown separately, not included in the price bid.		

_____ Authorized Signature

_____ Date

Attachment A

NEW RESTROOM BLDG. EAST RIVERSIDE PARK

1155 S. SUBER ROAD - GREER, SC 29650

IBC 2012 BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

Name of Project: **EAST RIVERSIDE PARK RESTROOM**
Address: **1155 S. SUBER ROAD - GREER, SC 29650**
Proposed Use: — E-mail: **dlangley@la-architects.com**
Owner or Authorized Agent: **Greenville Co. Recreation Dept., Don Shuman** Phone: **(864) 676-2190** Fax: **(864) 288-6499**
Owned By: ■ City/County ☐ Private ☐ State
Code Enforcement Jurisdiction: ☐ City _____ ■ County Greenville

LEAD DESIGN PROFESSIONAL: David E. Langley, AIA

Design Discipline	Firm Name	Individual Name	Ind. License	Firm License	Contact Information
Architect:	Langley & Associates Architects, LLC	David E. Langley, AIA	4739 (SC)	98012 (SC)	Phone: (864) 968-0224 Fax: (864) 968-9550 Email: dlangley@la-architects.com
Civil Engineer:	Arbor Engineering, Inc.	Jay Martin, PE	(SC)	C00533 (SC)	Phone: (864) 235-3589 Fax: (864) 233-6274 Email: jaymartin@arborengineering.com
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HVAC Engineer:	Carolina Engineering Solutions, Inc.	Jake Joye, PE	13573 (SC)	C02825 (SC)	Phone: (864) 370-9355 Fax: (864) 370-9505 Email: jdjoye@carolinaengr.com
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Electrical Engineer:	Burdette Engineering, Inc.	Don Burdette, PE	9350 (SC)	C00495 (SC)	Phone: (864) 297-8717 Fax: (864) 297-8719 Email: dburdette@burdetteengr.com
Fire Protection Engineer:	N/A	----	----	----	Phone: ---- Fax: ---- Email: ----

YEAR EDITION OF CODE: 2012 IBC, 2012 IMC, 2011 NEC, 2009 IECC, 2009 A117.1 ICC / ANSI, 2012 IPC

■ NEW CONSTRUCTION ☐ RENOVATION ☐ UPFIT ☐ ALTERATION

BUILDING DATA
Construction Type:
☐ I-A ☐ I-B ☐ II-A ☐ II-B ☐ III-A ☐ III-B ☐ IV ☐ V-A ■ V-B
Mixed construction: ■No ☐Yes Types _____
Sprinkler: ■No ☐Yes ☐ NFPA-13 ☐ NFPA-13R ☐ NFPA-13D
Standpipe: ■No ☐Yes Class: ☐ I ☐ II ☐ III ☐ Wet ☐ Dry
Fire District: ■No ☐Yes
Building Height: EXIST Number of Stories 1 Unlimited per N/A
Mezzanine: ■No ☐Yes
High Rise: ■No ☐Yes Central Reference Sheet # (if provided)

Previous Occupancy: N/A

GROSS BUILDING AREA (Per Floor)

FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	SUB-TOTAL
Level 1	0 SF	576 SF	576 SF
Level 2	N/A	N/A	N/A
Total	0 SF	576 SF	576 SF

ALLOWABLE AREA - **NEW BUILDING**

Primary Occupancy: ☐ Assembly ☐ A-1 ☐ A-2 ☐ A-3 ☐ A-4 ☐ A-5
■ Business ☐ Education ☐ Factory-Industrial (F1-F27) ____ ☐ Hazardous (H1-H57)
☐ Institutional (Unrestrained) (I1-I57) ☐ Institutional (restrained) Use Condition (1-57) ____ ☐ Mercantile
☐ Residential (R1-R47) ____ ☐ Storage (S1-S27) ____ ☐ Utility & Misc.
☐ Parking Garage (Open/Enclosed Repair?) ____

NOTE: Occupancy is A-2 Occupancy with less than 50 occupants, which is classified as Group B.

Secondary Occupancy: None

Special Occupancy: None

Mixed Occupancy: ■ No ☐ Yes Separation: N/A How Exception:

☐ Non-Separated Mixed Occupancy: (IBC Section 508.3.2)
The allowable building area and height of the building or portion thereof shall be based on the most restrictive allowances for the occupancy groups under consideration for the type of construction of the building in accordance with Section 503.1.

☐ Separated Mixed Occupancy:

Allowable Area: (IBC Section 508.4.2) - *See table below for area calculations*
In each story, the building area shall be such that the sum of the ratios of the actual building area of each separated occupancy divided by the allowable building area of each separated occupancy shall not exceed one.

Allowable Height. (IBC Section 508.4.3)

STORY NO.	DESCRIPTION AND USE	(A) BLDG. AREA PER STORY (ACTUAL	(B) TABLE 503 AREA	(C) AREA FOR OPEN SPACE INCREASE [1]	(D) AREA FOR SPRINKLER INCREASE [2]	(E) ALLOWABLE AREA FOR UNLIMITED [3]	(F) MAXIMUM BUILDING AREA [4]
1	BUSINESS	576	9,000	N/A	N/A	NA	9,000
1	---	---	9,000	N/A	N/A	NA	9,000
1	---	---	9,000	N/A	N/A	NA	9,000

[1] Open space area increases from Section 506.2 are computed thus:
a. Perimeter which front a public way or open space having 20 feet minimum width = 109 (P)
b. Total Building Perimeter = 219 (P)
c. Ratio (F/P)= 0.50 (F/P)
d. W = Minimum width of public way = 30.0 (W)
e. Percent of frontage increase If = 100 [F/P -0.25] x W/30 = 25.0 (%)
[2] The sprinkler increase per Section 506.3 is as follows:
a. Multi-story building Is = 200 percent
b. Single story building Is = 300 percent
[3] Unlimited area applicable under conditions of Sections: 507.2, 507.3, 507.4, and 507.6for Group B, F, M, S, A-3, and A-4
Group A motion picture (507.8); Malls (402.6); and H-2 aircraft paint hangers (507.5).
[4] Maximum Building Area = total number of stories in the building x E but not greater than 3 x E.
[5] The maximum area of parking garage must comply with 406.5.4.

ALLOWABLE HEIGHT - **NEW BUILDING**

	ALLOWABLE (TABLE 503)	INCREASE FOR SPRINKLERS	SHOWN ON PLANS	CODE REFERENCE
Type of Construction	V-B	N/A	V-B	IBC2012-602
Building Height in Feet	40'	Feet=H+20=N/A	----	IBC2012-504.1
Building Height in Stories	Stories 1	Stories +1 = N/A	Stories 1	IBC2012-504.1

FIRE PROTECTION REQUIREMENTS

Occupancy Group: B-Business | 1 Stories | Type: V-B Unsprinklered

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (Feet)	RATING REQ'D	RATING W/SPRINKLER REDUCTION	DETAIL # AND SHEET #	DESIGN # for RATED ASSEMBLY
Structural frame, including columns, girders trusses		0	N/A	N/A	N/A
Bearing walls					
Exterior					
North	30	0	N/A	N/A	N/A
East	30	0	N/A	N/A	N/A
West	30	0	N/A	N/A	N/A
South	30	0	N/A	N/A	N/A
Interior		0	N/A	N/A	N/A
Nonbearing walls/partitions	based on fire separation				
Exterior					
North	30	0	N/A	N/A	N/A
East	30	0	N/A	N/A	N/A
West	30	0	N/A	N/A	N/A
South	30	0	N/A	N/A	N/A
Interior		0	N/A	N/A	N/A
Floor Construction Including supporting beams & joists		N/A	N/A	N/A	N/A
Roof Construction Including supporting beams & joists		N/A	N/A	N/A	N/A
Shaft - Exit	YES	N/A	N/A	A-0.0	N/A
Shaft - Other	NO	N/A	N/A	N/A	N/A
Corridor Separation (# <11)	YES	0	N/A	N/A	N/A
Corridor Separation (10< # <30)	YES	0	N/A	N/A	N/A
Corridor Separation (# >30)	NO	N/A	N/A	N/A	N/A
Occupancy Separation	NO	N/A	N/A	N/A	N/A
Party/Fire Wall Separation	NO	N/A	N/A	N/A	N/A
Smoke Barrier Separation	NO	N/A	N/A	N/A	N/A
Fire Barrier between Fire Areas	NO	N/A	N/A	N/A	N/A

LIFE SAFETY SYSTEM
Emergency Lighting: ☐No ■Yes
Exit Signs: ☐No ■Yes
Fire Alarm: ■No ☐Yes
Smoke Detection System: ■No ☐Yes
Panic Hardware: ■No ☐Yes

PLUMBING FIXTURE REQUIREMENTS - Table 2902.1

	Water closets Male	Water closets Female	Urinals	Lavatories Male	Lavatories Female	Shower/Tubs Male	Shower/Tubs Female	Drinking Fountains Regular	Drinking Fountains Accessible	Service Sink
BUSINESS - 6 (requirements)	2	2	2/3 max	2	2	0	0	1	1	1
Fixtures Provided (Urinals counted as WCs)	2	2	none	2	2	0	0	1	1	1

EXIT REQUIREMENTS
576SF / 100 SF PER PERSON = 6
NUMBER & ARRANGEMENT OF EXITS 1 per floor

Floor, Room or Space Designation	Minimum Number of Exits (Tables 1019.1 and 1019.2) Required	Shown on Plans	Travel Distance (Table 1015.1 and 1016.1) Allowable Travel Distance (Table 1015.1)	Actual Travel Distance Shown on Plans	Arrangement of Means of Egress (1013.2) Required Distance Between Exit Doors	Actual Distance Shown on Plans
FIRST FLOOR -	1	1	75	75	N/A - SINGLE EXIT	N/A - SINGLE EXIT

1.) Corridor Dead Ends (Sec. 1018.4)
2.) Single Exits (Table 1021.2(2) and Table 1015.1)
3.) Common Path of Travel (Table 1014.3)

EXIT WIDTH

Use Group or Space Description	(A) 1 Area Sq. Ft.	(B) 1 Area Per Occupant (Table 1004.1.2)	(C) 1 Number of Occupants (Table 1004.1.2)	(D) Egress Width Per Occupant (Sec. 1005.3) Stair	Level	EXIT WIDTH (in) 3,4,5,6 Required Width (Sec. 1005.3 & Table 1018.2) c x d Stair	Level	Actual Width Shown on Plans Stair	Level
MEN'S RESTROOM	108	100	2	30	20	N/A	36	N/A	50
WOMEN'S RESTROOM	108	100	2	30	20	N/A	36	N/A	50
STORAGE/JANITOR	125	300	1	30	20	N/A	36	N/A	50
ELEC. PANEL ROOM	24	300	1	30	20	N/A	36	N/A	50
TOTAL OCCUPANCY			6						

ACCESSIBLE PARKING - **EXISTING PARKING PROVIDED**

INDEX OF DRAWINGS

SHEET	NAME	REVISION DATE	NO
	GENERAL DRAWINGS		
A0.0	CODE REVIEW & COVER SHEET	4/15/2016	
A0.1	NOTES & SUPPLEMENTAL CONDITIONS	4/15/2016	
A0.2	GENERAL ANSI/ADA DETAILS	4/15/2016	
	CIVIL DRAWINGS		
C-101	SITE PLAN	05/11/2016	
	ARCHITECTURAL DRAWINGS		
A2.0	FLOOR PLAN & RESTROOM ELEVATIONS	4/15/2016	
A5.0	EXTERIOR ELEVATIONS & SECTIONS	4/15/2016	
	STRUCTURAL DRAWINGS		
S101	NOTES, PLANS & SECTIONS	04/26/2016	
	MECHANICAL DRAWINGS		
M1.1	HVAC PLAN	3/31/2016	
	PLUMBING DRAWINGS		
P1.1	PLUMBING PLAN	3/31/2016	
	ELECTRICAL DRAWINGS		
E101	ELEC. LEGEND, SCHEDULES & PLANS	4/15/2016	

STATE OF SOUTH CAROLINA
Langley & Associates Greer, SC 98012
REGISTERED ARCHITECT
DAVID E. LANGLEY GREER, SC 4739
04-15-2016

REVISIONS
NO. DATE DESCRIPTION

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NEW RESTROOM BLDG.
EAST RIVERSIDE PARK
1155 S. SUBER ROAD - GREER, SC

Code Review & Cover Sheet

JOB NO: 2015-13L
DATE: 04-15-2016
DESC: ISSUE FOR BID

A0.0

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GENERAL NOTES

1. ALL DIMENSIONS ARE FROM OUTSIDE FACE OF MASONRY ON EXTERIOR AND FROM FACE-TO-FACE OF MASONRY FOR INTERIOR.

2. DIMENSIONS ARE SHOWN FOR OPENINGS FROM EDGE OF R.O. TO EDGE OF R.O. OR TO CENTERLINE OF OPENING UNLESS NOTED OTHERWISE.

3. TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF THE DESIGN OF THE PROJECT COMPLIES WITH THE APPLICABLE PROVISIONS OR REQUIREMENTS OF LOCAL CODES AND STANDARDS.

4. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONARY MEASURES TO PROTECT THE PUBLIC AND ADJACENT PROPERTIES FROM DAMAGE THROUGHOUT CONSTRUCTION.

5. ANY EXISTING UTILITIES TO BE ABANDONED SHALL BE PROPERLY DISCONNECTED, PLUGGED, OR CAPPED AS REQUIRED BY CODE OR SOUND CONSTRUCTION PRACTICE.

6. DISRUPTED ELECTRICAL AND WATER LINES RE-ROUTED DURING PROJECT CONSTRUCTION ARE TO REMAIN IN CONTINUOUS SERVICE. ALL EXISTING UTILITIES AND CITY SERVICES ARE TO BE MAINTAINED, KEPT IN SERVICE, AND PROTECTED AGAINST DAMAGE DURING CONSTRUCTION.

7. THESE DRAWINGS ARE DIAGRAMMATIC AND SHALL NOT BE SCALED. ADDITIONAL DATA SHALL BE FROM THE ARCHITECT THROUGH WRITTEN CLARIFICATION ONLY. VERIFY ALL EXISTING CONDITIONS, ELEVATIONS, AND DIMENSIONS BEFORE PROCEEDING WITH ANY PORTION OF THE WORK.

8. NO CHANGES, MODIFICATIONS, OR DEVIATIONS SHALL BE MADE FROM THE DRAWINGS OR SPECIFICATIONS WITHOUT FIRST SECURING WRITTEN PERMISSION FROM THE ARCHITECT.

9. IF THE CONTRACTOR OR SUBCONTRACTOR SHOULD FIND ANY DISCREPANCY AND/OR OMISSIONS FROM THESE DRAWINGS OR IF THE CONTRACTOR SHOULD BE IN QUESTION AS TO THEIR MEANING OR INTENT, THE CONTRACTOR SHOULD CONTACT THE ARCHITECT AT ONCE FOR INTERPRETATION OR CLARIFICATION. WHERE LACK OF INFORMATION OR ANY DISCREPANCY SHOULD APPEAR IN THE DRAWINGS OR SPECIFICATIONS, REQUEST WRITTEN INTERPRETATION FROM THE ARCHITECT BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.

10. ALL WORK, AS OUTLINED IN THESE DOCUMENTS, SHALL STRICTLY CONFORM TO ALL APPLICABLE CODES AND ORDINANCES. IN THE EVENT OF A CONFLICT, THE MORE STRINGENT REQUIREMENT SHALL GOVERN AND BE MET.

11. THE CONTRACTOR SHALL PAY FOR ALL FEES, PERMITS, LICENSES, ETC. NECESSARY FOR PROPER COMPLETION OF THE WORK.

12. THE CONTRACTOR SHALL GUARANTEE ALL WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION OR AS OTHERWISE REQUIRED IN THE SPECIFICATIONS OR CONTRACT.

13. WHEN A SYSTEM OR ASSEMBLY IS CALLED OUT FOR, ALL NECESSARY PARTS AND MATERIALS REQUIRED FOR A COMPLETE INSTALLATION/SYSTEM SHALL BE PROVIDED AND INSTALLED ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS AT NO ADDITIONAL COST.

14. IT IS THE INTENT OF THESE CONTRACT DOCUMENTS TO DEFINE A COMPLETE FINISHED FACILITY. ANY MATERIAL, SYSTEM, EQUIPMENT, OR ASSEMBLY THAT NORMALLY WOULD BE REQUIRED SHALL BE PROVIDED AS IF SPECIFICALLY NOTED.

15. WHEN WORK IS NOT CALLED OUT AS REQUIRED TO COMPLETE THE PROJECT, IT SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER AND BE OF THE BEST MATERIALS AND WORKMANSHIP.

16. ANY EXTERIOR SIGNS REQUIRED SHALL BE SUBMITTED BY THE CONTRACTOR TO PROPER AUTHORITIES FOR REVIEW AND PERMIT.

17. ALL MATERIALS USED SHALL BE EQUAL TO OR EXCEED ALL APPLICABLE STATE OR LOCAL CODES AND REQUIREMENTS.

18. CONTRACTOR SHALL REMOVE PROMPTLY AND LEGALLY ALL ACCUMULATED DEBRIS, PROTECT ALL EXPOSED PORTIONS OF WORK FROM ELEMENTS, AVOID OVERLOADING STRUCTURE, AND SECURELY STORE ALL ITEMS TO BE USED FOR CONSTRUCTION.

19. CONTRACTOR TO VERIFY LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO EXCAVATION.

20. ALL GLASS IN HAZARDOUS AREAS, ADJACENT TO AND INSTALLED IN DOORS, AND ALL GLASS WITHIN 18" OF FLOOR SHALL BE SAFETY GLASS OR TEMPERED PER IBC REQUIREMENTS.

21. ALL GLAZING SUBJECT TO HUMAN IMPACT SHALL CONFORM TO "SAFETY GLAZING" PER CODES.

22. ALL CABINETS SHALL BE LAMINATE EXTERIOR WITH MELAMINE INTERIOR UNLESS NOTED OTHERWISE.

23. ALL COUNTERTOPS TO HAVE 2" RADIUS CORNERS, AND BE PLASTIC LAMINATE MATERIAL UNLESS NOTED OTHERWISE.

24. 5/8" MOISTURE RESISTANT GYPSUM BOARD SHALL BE USED AT ALL WET TOILETS IN BATHS PER CODE.

25. 5/8" TYPE 'X' GWB WILL BE USED IN ALL RATED WALLS.

26. INSULATE DRAIN PIPE AND HOT WATER PIPE UNDER LAVS AND SINKS PER CODE AND ADA STANDARDS, IF PIPES ARE EXPOSED.

27. ALL FAUCETS SHALL BE LEVER ACTION AND CONFORM TO ADA STANDARDS.

28. ALL IDENTIFICATION SIGNAGE SHALL BE RAISED SANS SERIF AND WILL BE ACCOMPANIED WITH GRADE 2 BRAILLE. PICTORIAL / INTERNATIONAL SIGNS SHALL BE PER 4.30, FIG. 43 OF THE FEDERAL REGISTER AND ADA STANDARDS.

29. IDENTIFICATION, DIRECTIONAL, AND INFORMATIONAL SIGNS SHALL HAVE A NON-GLARE FINISH AND CHARACTERS SHALL BE OF A SIZE AND FONT AND PROVIDE PROPER CONTRAST WITH THE BACKGROUND OF THE SIGN TO COMPLY WITH ADA STANDARDS.

30. ALL PRODUCTS LISTED BY ICBO/NER NUMBER SHALL BE INSTALLED PER THE REPORT AND MANUFACTURER'S WRITTEN INSTRUCTIONS. PRODUCT SUBSTITUTION FOR PRODUCTS LISTED SHALL ALSO HAVE ICBO APPROVED EVALUATION REPORT AND BE APPROVED AND LISTED BY OTHER NATIONALLY RECOGNIZED TESTING AGENCIES.

31. ALL EXITS TO BE OPENABLE FOR THE INSIDE WITHOUT USE OF A KEY OR SPECIAL KNOWLEDGE.

32. MANUALLY OPERATED EDGE OR SURFACE MOUNTED FLUSH BOLTS AND SURFACE BOLTS ARE PROHIBITED AT A DOOR OR THE ACTIVE LEAF OF A PAIR OF DOORS.

33. GENERAL CONTRACTOR IS RESPONSIBLE FOR VERIFYING THAT ALL SUBCONTRACTORS & MATERIAL SUPPLIERS ACKNOWLEDGE THAT THEY HAVE HAD ACCESS TO & HAVE REVIEWED A FULL SET OF CONSTRUCTION DOCUMENTS.

34. ALL CARPET, TILE AND SHEET VINYL SHALL BE SECURELY ATTACHED; CARPET SHALL HAVE NO PAD AND A LEVEL LOOP, TEXTURED LOOP OR LEVEL CUT PILE. THE MAXIMUM PILE THICKNESS SHALL BE 1/2". EXPOSED EDGES OF THE CARPET SHALL BE FASTENED TO THE FLOOR SURFACE AND HAVE TRIM ALONG THE ENTIRE LENGTH OF THE EXPOSED EDGE.

35. ALL SUBCONTRACTORS & MATERIAL SUPPLIERS ARE REQUIRED TO REVIEW A FULL SET OF THESE CONSTRUCTION DOCUMENTS, INCLUDING SPECIFICATIONS IF APPLICABLE, PRIOR TO SUBMITTING PRICING FOR THE WORK. PRICING BASED ON REVIEW OF PARTIAL SETS OF THESE DOCUMENTS IS DONE @ THE G.C., SUBCONTRACTOR &/OR SUPPLIER'S OWN RISK & DOES NOT RELIEVE THEIR RESPONSIBILITY FOR COORDINATING THEIR WORK & THE PRICING THEREOF WITH OTHER TRADES.

36. ELECTRICAL, MECHANICAL, FIRE PROTECTION, & PLUMBING SUBCONTRACTORS SHALL COORDINATE THEIR WORK W/ THE ARCHITECTURAL DRAWINGS & CIVIL ENGINEERING DRAWINGS & CLARIFY ANY CONFLICTS, DISCREPANCIES OR OMISSIONS AFFECTING THEIR SCOPE OF WORK PRIOR TO SUBMITTING PRICES FOR THEIR WORK.

37. ALL CHANGE ORDERS SHALL BE SUBMITTED WITHIN 21 CALENDAR DAYS OF THE DISCOVERY OF THE ISSUE GENERATING THE CHANGE ORDER OR WITHIN 21 DAYS OF THE REALIZATION THAT THE ISSUE HAS AN IMPACT ON PROJECT TIME OR COST.

38. ALL CHANGE ORDERS SHALL CLEARLY BREAK DOWN INTO THE FOLLOWING CATEGORIES:

- A. LABOR (HOURS X RATES)
- B. MATERIAL COST (LIST QUANTITY & UNIT COST)
- C. TAX & FREIGHT
- D. SUB MARK UP (IF APPLICABLE)
- E. G.C. MARK UP
- F. BOND PREMIUM (IF APPLICABLE)

CHANGE ORDERS NOT SUBMITTED IN THIS FORMAT WILL NOT BE REVIEWED & WILL BE RETURNED FOR RESUBMITTAL. 21 CALENDAR DAY PERIOD FOR SUBMISSION WILL NOT BE EXTENDED BY G.C. FAILURE TO FOLLOW THIS FORMAT.

39. UNLESS NOTED OTHERWISE, ALL LABOR, EQUIPMENT, MATERIALS, & INSTALLATION OF ITEMS SHOWN IN THESE DOCUMENTS (INCLUDING ENGINEERING DOCUMENTS) ARE TO BE PROVIDED BY THE GC UNDER THE COST OF THE BASE BID. IN THE EVENT THERE IS A CONFLICT IN THESE DOCUMENTS INDICATING THAT BOTH THE GC AND OTHERS ARE TO PROVIDE AN ITEM, UNLESS THE GC SPECIFICALLY & CLEARLY EXCLUDES THE ITEM IN QUESTION IN THEIR BID IT WILL BE CONSIDERED TO BE INCLUDED IN THE BASE BID COST AND SCOPE OF WORK. GC WAIVES THE RIGHT TO CLARIFY EXCLUSIONS AFTER WRITTEN AGREEMENT IS ENTERED INTO BETWEEN GC AND OWNER.

40. IF AN ITEM IS NOT CLEARLY SPECIFIED ON THE DRAWINGS, THE CONTRACTOR SHALL INFORM THE ARCHITECT AND REQUEST CLARIFICATION PRIOR TO SUBMITTING A FINAL PRICE.

41. THE CONTRACTOR SHALL NOT PERFORM ADDITIONAL WORK WITHOUT FIRST RECEIVING APPROVAL FROM THE ARCHITECT/OWNER. ANY WORK PERFORMED BY THE CONTRACTOR WITHOUT SEEKING SUCH APPROVAL SHALL BE CONSIDERED TO HAVE BEEN PERFORMED UNDER THE SCOPE OF WORK INCLUDED IN THE CONTRACTORS BASE PRICE AND SHALL NOT BE QUALIFIED FOR SUBMISSION AS A CHANGE ORDER ITEM.

42. TO THE EXTENT THAT AN ITEM IS INDICATED ON THE DRAWINGS AS A PART OF THE SCOPE OF WORK, IT IS ASSUMED THAT ALL APPLICABLE WORK, MATERIALS, ENGINEERING AND INSPECTIONS NECESSARY TO MEET THE REQUIREMENTS OF APPLICABLE CODES WILL BE PERFORMED AS A PART OF THE CONTRACTORS BASIC SCOPE OF WORK TO PROVIDE THE ITEMS INDICATED ON THE DRAWINGS.

43. THE ARCHITECT/OWNER SHALL HAVE THE RIGHT TO REVIEW CONDITIONS IN THE FIELD THAT DEVIATE FROM THE CONSTRUCTION DOCUMENTS WITH THE CONTRACTOR AND DETERMINE IF SUCH CONDITIONS ARE ACCEPTABLE OR IF THE WORK SHALL REQUIRE ALTERATION TO BRING IT IN COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS. IF DEVIATING WORK IN PLACE IS ACCEPTED BY THE OWNER/ARCHITECT, THE CONTRACTOR SHALL HAVE THE OPTION OF LEAVING THE WORK IN PLACE OR CORRECTING THE WORK TO ACHIEVE COMPLIANCE WITH THE CONTRACT DOCUMENTS. IF DEVIATING WORK IS ACCEPTED BY THE OWNER/ARCHITECT AND THE CONTRACTOR, NO ADDITIONAL COST SHALL BE INCURRED BY THE OWNER FOR THE DEVIATION FROM THE CONTRACT DOCUMENTS OR FOR ANY ASSOCIATED WORK REQUIRED TO BRING THE WORK IN COMPLIANCE WITH THE OVERALL DESIGN INTENT AS INTERPRETED BY THE OWNER/ARCHITECT.

44. AN AMOUNT EQUAL TO 10% OF EACH PAYMENT APPLICATION SHALL BE WITHHELD FROM EACH PAYMENT TO THE CONTRACTOR FOR THE PURPOSE OF RESERVING AN APPROPRIATE AMOUNT OF FUNDS TO COVER THE COST OF PUNCH LIST VALUES WITHHELD AT THE TIME OF FINAL PAYMENT. THIS RETAINAGE INSURES THAT AT THE TIME OF FINAL PAYMENT AN APPROPRIATE AMOUNT OF FUNDS HAVE BEEN RETAINED THAT ARE EQUAL TO OR EXCEED THE VALUE OF POTENTIAL PUNCH LIST ITEMS.

45. THE CONTRACTOR SHALL NOT BILL FOR WORK OR MATERIALS THAT HAVE NOT BEEN COMPLETED OR PURCHASED AND STORED ON SITE AT THE TIME OF THE CONTRACTORS BILLING. THE OWNER/ARCHITECT RESERVES THE RIGHT TO ADJUST THE CONTRACTORS BILLING TO REFLECT THE STATE OF COMPLETION IF THE CONTRACTOR'S BILLING APPEARS TO EXCEED THE STATE OF COMPLETION OF THE PROJECT. ANY PROPOSED ADJUSTMENTS TO THE CONTRACTOR'S BILLING WILL BE DISCUSSED WITH THE CONTRACTOR PRIOR TO ISSUANCE OF PAYMENT FOR THAT BILLING CYCLE.

46. PUNCH LIST ITEM VALUES SHALL BE ESTIMATED BY THE ARCHITECT AND THOSE VALUES SHALL BE INCREASED BY A MULTIPLE OF (3) THREE FOR THE PURPOSES OF WITHHOLDING PAYMENT FOR INCOMPLETE PUNCH LIST ITEMS AT THE TIME OF SUBMISSION BY THE CONTRACTOR FOR FINAL PAYMENT.

47. UNLESS SPECIFICALLY EXCLUDED IN TERMS OF THE OWNER/GC AGREEMENT, AIA DOCUMENT A201 "GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT" IS A PART OF THE OWNER/GC AGREEMENT BY REFERENCE OF THIS NOTE.

48. ALL PUNCH LIST ITEMS SHALL BE COMPLETED WITHIN 21 CALENDAR DAYS FROM THE RELEASE OF FINAL PAYMENT LESS RETAINED AMOUNTS FOR PUNCH LIST ITEMS. AT THE END OF 21 CALENDAR DAYS, THE OWNER SHALL RELEASE ALL AMOUNTS WITHHELD FOR PUNCH LIST ITEMS TO THE CONTRACTOR FOR ALL PUNCH LIST ITEMS THAT HAVE BEEN SATISFACTORILY COMPLETED. THE OWNER RESERVES THE RIGHT TO USE ANY RETAINED FUNDS FOR INCOMPLETE PUNCH LIST ITEMS TO CONTRACT INDEPENDENTLY WITH OTHER CONTRACTOR(S) AS NECESSARY TO COMPLETE ANY PUNCH LIST ITEMS REMAINING INCOMPLETE AFTER 21 CALENDAR DAYS. THE OWNER ALSO RESERVES THE RIGHT TO ALLOW THE ORIGINAL CONTRACTOR AN EXTENSION OF TIME TO COMPLETE THE REMAINING PUNCH LIST ITEMS AND RELEASE THE ASSOCIATED RETAINAGE AT SUCH TIME THAT THESE ITEMS ARE COMPLETE.

49. NO MATERIAL SUBSTITUTIONS WILL BE PERMITTED UNLESS AUTHORIZATION HAS BEEN GRANTED BY THE OWNER AND ARCHITECT. ANY MATERIAL SUBSTITUTIONS MADE WITHOUT AUTHORIZATION WILL SUBJECT THE GENERAL CONTRACTOR TO REPLACEMENT OF SUCH MATERIALS AT THE SOLE EXPENSE OF THE GENERAL CONTRACTOR.

50. THE GENERAL CONTRACTOR SHALL BE SOLELY RESPONSIBLE TO SECURE AND PROTECT FROM DAMAGE, ALL ITEMS ON THE PREMISES, INCLUDING BUT NOT LIMITED TO: CONSTRUCTION MATERIALS, LIGHT FIXTURES AND EQUIPMENT. AFTER RECEIPT ON JOB SITE, ANY LOST, STOLEN, OR ITEMS DAMAGED LATER BY SUBCONTRACTORS OR OTHERS IN THE BUILDING, SHALL BE REPLACED OR REPAIRED AT THE GENERAL CONTRACTOR'S SOLE EXPENSE. THE GENERAL CONTRACTOR SHOULD NOTIFY AND RELATE THIS INFORMATION AND REQUIREMENT TO ALL TRADES AND SUBCONTRACTORS ON THE SITE.

51. IT IS THE RESPOSIBILITY OF THE GENERAL CONTRACTOR TO RECEIVE AND UNLOAD PRODUCT AND MATERIALS SUPPLIED BY OTHERS AT THE JOB SITE, IMMEDIATELY INSPECT DELIVERED PRODUCTS AND EQUIPMENT FOR SHIPPING DAMAGE, INCLUDING CONCEALED DAMAGE PRIOR TO SHIPPER LEAVING PREMISES. ANY PRODUCT OR MATERIALS FOUND TO BE DAMAGED AFTER THE SHIPPER HAS LEFT THE PREMISES, WILL BE THE SOLE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO REPLACE. RECORD ANY SHORTAGES, DAMAGED OR DEFECTIVE MATERIALS. SAVE ALL PACKAGING OF DAMAGED PRODUCTS UNTIL CLAIMS ARE FINALIZED. IMMEDIATELY NOTIFY PROJECT MANAGER AND OWNER OF ANY DAMAGED MATERIALS RECEIVED. IMMEDIATELY FILE A DAMAGE CLAIM WITH THE APPROPRIATE SHIPPING COMPANY.

52. THESE DRAWINGS ARE FOR USE IN CONSTRUCTING THE FACILITY MENTIONED ON THE COVER SHEET ONLY.

53. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO SET, INSTALL, CONNECT AND TEST ALL EQUIPMENT SHOWN IN THESE DOCUMENTS. ALL COSTS ASSOCIATED WITH THESE SERVICES, LABOR AND MATERIALS SHALL BE INCLUDED IN THE GENERAL CONTRACTOR'S BASE BID PRICE.

SUPPLEMENTAL CONDITIONS

1. DESIGN/BUILD COORDINATION

IF THIS PROJECT IS A DESIGN/BUILD PROJECT, THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR COORDINATING THE ARCHITECTS DOCUMENTS WITH ALL DESIGN DOCUMENTS PRODUCED BY OTHERS NOT DIRECTLY ENGAGED BY THE ARCHITECT. THE SCOPE OF THE ARCHITECT'S RESPONSIBILITY TO COORDINATE DESIGN DOCUMENTS IS LIMITED TO DESIGN DOCUMENTS PRODUCED BY THE ARCHITECT AND CONSULTANTS DIRECTLY UNDER CONTRACT WITH THE ARCHITECT.

2. GUARANTEE OF BIDS

ALL BIDS SUBMITTED ARE GUARANTEED BY THE CONTRACTOR TO BE VALID FOR (60) SIXTY CALENDAR DAYS FROM THE BID DATE. BIDS SUBMITTED CANNOT BE WITHDRAWN OR QUALIFIED DURING THE (60) SIXTY-DAY PERIOD.

3. CONTRACTOR TO PROVIDE UNLESS NOTED OTHERWISE

UNLESS NOTED OTHERWISE IN THESE DOCUMENTS, ALL LABOR, MATERIALS, EQUIPMENT, AND INSTALLATION OF ITEMS SHOWN ANYWHERE IN THESE DOCUMENTS ARE TO BE PROVIDED BY THE CONTRACTOR AND INCLUDED IN THE BASE BID PRICE.

4. OWNER NOT ENTITLED TO BENEFIT FROM ERRORS AND OMISSIONS

AN ERROR OR OMISSION IN THESE DOCUMENTS RESULTING IN A CHANGE ORDER FOR ADDITIONAL COST AND/OR TIME SHALL NOT BE CONSIDERED A HARDSHIP OR DAMAGE TO THE OWNER TO THE EXTENT THAT THE ADDITIONAL COST AND TIME WOULD HAVE INCREASED THE BASE BID PRICE AND/OR TIME HAD THERE BEEN NO ERROR OR OMISSION IN THE DOCUMENTS AT THE TIME THE BIDS WERE RECEIVED. THE OWNER ACKNOWLEDGES THAT THE WORK ASSOCIATED WITH THE ERROR OR OMISSION, HAD IT BEEN INCLUDED IN THE BASE BID PRICE, WOULD HAVE AFFECTED THE TIME AND COST OF THE ORIGINAL BASE BID PRICE. THE OWNER IS NOT ENTITLED TO BENEFIT FROM FREE OR REDUCED COSTS OR TIME FOR WORK THAT WOULD HAVE OTHERWISE INCREASED THE CONTRACT TIME AND/OR COST OF THE BASE BID HAD NO ERROR OR OMISSION BEEN IN THE BID DOCUMENTS.

5. CONTRACTOR RESPONSIBILITY TO CLARIFY WORK PROVIDED BY OTHERS

IN THE EVENT THERE IS A CONFLICT BETWEEN ANY OF THE DESIGN DOCUMENTS THAT INDICATES THAT BOTH THE CONTRACTOR AND OTHERS ARE TO PROVIDE MATERIALS, LABOR, EQUIPMENT OR INSTALLATION: THE CONTRACTOR SHALL CLEARLY AND SPECIFICALLY INDICATE IN WRITTEN FORM WHETHER THE WORK IN QUESTION IS INCLUDED OR EXCLUDED FROM THE SCOPE OF WORK OF THE BASE BID PRICE. IF THE CONTRACTOR FAILS TO CLARIFY HOW THEY ADDRESSED PRICE AND TIME ASSOCIATED WITH THE CONFLICT IN THE BID SUBMITTAL, THE WORK IN QUESTION AND ITS ASSOCIATED COST AND TIME WILL BE CONSIDERED TO BE INCLUDED IN THE BASE BID PRICE.

6. FORFEITURE OF RIGHT TO QUALIFY BID UPON ENTERING CONTRACT

ONCE THE CONTRACTOR AND OWNER ENTER INTO A MUTUALLY ACCEPTABLE CONTRACT FOR CONSTRUCTION, THE CONTRACTOR FORFEITS ANY FURTHER RIGHT TO QUALIFY THEIR BID BASED ON CONFLICTS IN THE DESIGN DOCUMENTS. THIS DOES NOT PROHIBIT THE CONTRACTOR FROM REQUESTING ADDITIONAL TIME AND COST FOR ADDITIONAL WORK THAT IS NOT ADDRESSED IN ANY MANNER BY THE DOCUMENTS.

7. PRICE TO ADDRESS HIGHER COST & TIME IF CLARIFICATION NOT REQUESTED

IF THERE IS A CONFLICT IN THE DOCUMENTS, THE CONTRACTOR MUST SEEK THE ARCHITECTS CLARIFICATION PRIOR TO SUBMITTING A BID. IF THE CONTRACTOR DOES NOT SEEK CLARIFICATION, THE WORK IN QUESTION WILL BE CONSIDERED INCLUDED IN THE BASE BID PRICE. IF THE CONFLICT IS BETWEEN SCOPES OF WORK WITH DIFFERING COST, IN THE ABSENCE OF CLARIFICATION, THE BASE BID PRICE WILL BE CONSIDERED TO INCLUDE SUFFICIENT COST AND TIME TO ALLOW THE ARCHITECT TO CHOOSE BETWEEN CONFLICTING SCOPES OF WORK WITHOUT INCURRING ADDITIONAL CONTRACT COST OR EXTENSIONS OF CONTRACT TIME.

8. CONSTRUCTION DOCUMENTS

ANY AMENDMENTS TO THE OWNER/GC AGREEMENT WILL NOT BE ENFORCEABLE UNLESS THEY ARE AGREED UPON IN WRITING AND SIGNED BY APPROPRIATE AUTHORIZED PARTIES.

ANYTHING MENTIONED IN THE SPECIFICATIONS AND NOT SHOWN IN THE DRAWINGS, OR SHOWN ON THE DRAWINGS AND NOT MENTIONED IN THE SPECIFICATIONS SHALL BE INTERPRETED AS BEING IN BOTH.

IF THERE IS A CONFLICT BETWEEN THE SPECIFICATIONS AND DRAWINGS REGARDING MATERIALS, THE CONTRACTOR MUST CHOOSE THE MATERIAL OF HIGHER QUALITY AND/OR GREATER SIZE FOR THE PURPOSE OF BIDDING IF THE CONTRACTOR DOES NOT SEEK AND RECEIVE CLARIFICATION FROM THE ARCHITECT IN WRITING. CLARIFICATION BY THE ARCHITECT MUST BE SOUGHT PRIOR TO INCORPORATING SUCH ITEMS INTO THE WORK.

IF THERE IS A CONFLICT BETWEEN ANY ENGINEERING DRAWING AND THE ARCHITECTURAL OR CIVIL SITE PLAN REGARDING THE LOCATION OF WORK OUTSIDE THE BUILDING FOOTPRINT, THE ARCHITECTURAL AND CIVIL ENGINEERING SITE PLAN WILL TAKE PRECEDENT.

THE OWNER/CONTRACTOR AGREEMENT TAKES PRECEDENT OVER THE GENERAL CONDITIONS. THE SUPPLEMENTAL CONDITIONS TAKES PRECEDENT OVER THE GENERAL CONDITIONS.

THE DESIGN DOCUMENTS INCLUDE DRAWINGS, SPECIFICATIONS, ADDENDA AND OTHER RELATED DOCUMENTS. ALL BIDS SUBMITTED ARE ASSUMED TO BE BASED ON A COMPLETE SET OF DESIGN DOCUMENTS AVAILABLE AT THE TIME OF BIDDING. THE ARCHITECT WILL NOT ISSUE PARTIAL SETS OF DESIGN DOCUMENTS. PLAN ROOMS, IF AUTHORIZED TO REPRODUCE AND DISTRIBUTE BID DOCUMENTS, ARE NOT AUTHORIZED TO REPRODUCE PARTIAL SETS. THE CONTRACTOR AND HIS SUBCONTRACTORS ARE NOT AUTHORIZED TO REPRODUCE THE DESIGN DOCUMENTS, WHETHER IN WHOLE OR PART, WITHOUT THE EXPRESS CONSENT OF THE ARCHITECT. FAILURE TO EXAMINE A COMPLETE SET OF DESIGN DOCUMENTS DOES NOT RELIEVE THE CONTRACTOR OR ANY SUBCONTRACTOR FROM THE RESPONSIBILITY TO COORDINATE THEIR SCOPE OF WORK WITH OTHER TRADES. ANY CLAIM FOR ADDITIONAL TIME OR COST BASED ON LIMITED KNOWLEDGE DUE TO A REVIEW OF A PARTIAL SET OF DOCUMENTS WILL BE REJECTED.

9. LOCAL UTILITIES

THE CONTRACTOR MUST VISIT THE SITE AND OBSERVE EXISTING CONDITIONS AS A REQUIREMENT FOR SUBMITTING A BID. ALL EXISTING UTILITY LOCATIONS AND EQUIPMENT SHOULD BE OBSERVED AND LOCAL UTILITY COMPANIES SHOULD BE IDENTIFIED DURING THE BID PHASE. THE CONTRACTOR AND THEIR SUBCONTRACTORS ARE RESPONSIBLE FOR CONTACTING ALL APPLICABLE LOCAL UTILITY COMPANIES DURING THE BID PHASE TO DETERMINE SERVICE AVAILABILITY AND CAPACITY AND IDENTIFY STANDARDS OR OTHER REQUIREMENTS THAT LOCAL UTILITY COMPANIES ENFORCE THAT AFFECT THE CONTRACTOR OR SUBCONTRACTORS' SCOPE OF WORK. THE COST OF ALL WORK NECESSARY TO MEET THE STANDARDS ACCEPTABLE TO THE LOCAL UTILITY COMPANIES IN ORDER TO MAKE SERVICE CONNECTIONS IS TO BE INCLUDED IN THE CONTRACT AMOUNT.

THE CONTRACTOR IS RESPONSIBLE FOR INCLUDING ALL TAP FEES, CONNECTION FEES, CAPACITY FEES, IMPACT FEES, CONTRIBUTION FEES, METER FEES, AND ALL OTHER APPLICABLE FEES CHARGED BY THE LOCAL UTILITIES FOR MAKING SERVICE CONNECTIONS TO THE PROJECT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR AND THEIR SUBCONTRACTORS TO CONTACT THE LOCAL UTILITIES AND DETERMINE THE COST OF SUCH FEES DURING THE BID PHASE AND INCLUDE THESE COSTS IN THEIR BIDS.

ALL ELECTRICAL SERVICE TO THE TRANSFORMER FROM THE LOCAL UTILITY AND FROM THE TRANSFORMER TO THE BUILDING SHALL BE UNDERGROUND UNLESS NOTED OTHERWISE ON THE BID DOCUMENTS.

10. TESTING

THE OWNER SHALL BE RESPONSIBLE FOR PAYING FOR THE FOLLOWING TESTS. THE CONTRACTOR SHALL SCHEDULE THE TESTS WITH THE OWNER'S CONSULTANTS TO COINCIDE WITH THE CONSTRUCTION SCHEDULE.

- GEOTECHNICAL SOILS TESTING (DONE BY OWNER PRIOR TO START OF CONSTRUCTION)
- FILL COMPACTION TESTS
- CONCRETE CYLINDER TESTS
- HAZARDOUS MATERIALS TESTING (DONE BY OWNER PRIOR TO START OF CONSTRUCTION)
- FIELD TESTING OF WELDS
- BOLT/NUT TORQUE VERIFICATION TESTING
- OTHER TESTS IDENTIFIED IN THE STATEMENT OF SPECIAL INSPECTIONS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PAYING ALL TESTING NECESSARY TO ACHIEVE APPROVAL OF ALL AGENCIES HAVING JURISDICTION IN ORDER TO RECEIVE A CERTIFICATE OF OCCUPANCY EXCEPT TESTS IDENTIFIED IN THE STATEMENT OF SPECIAL INSPECTIONS. THE CONTRACTOR SHALL SCHEDULE THE TESTS TO COINCIDE WITH THE CONSTRUCTION SCHEDULE. IN ADDITION TO TESTS REQUIRED BY LOCAL AUTHORITIES, THE FOLLOWING TESTS ARE ALSO THE RESPONSIBILITY OF THE CONTRACTOR.

- HVAC TEST AND BALANCE REPORT
- SHUT DOWN TESTING OF HVAC SYSTEMS
- FABRICATOR'S CERTIFICATIONS

11. CHANGE ORDERS

THE CONTRACTOR MUST SEEK OWNER AUTHORIZATION FOR ADDITIONAL WORK PRIOR TO PERFORMING THE WORK IF THE CONTRACTOR REQUIRES A CHANGE IN CONTRACT TIME OR THE CONTRACT AMOUNT. THE CONTRACTOR SHALL SEEK OWNER AUTHORIZATION FOR ADDITIONAL WORK BY SUBMITTING A CHANGE ORDER REQUEST TO THE ARCHITECT. IF THE CONTRACTOR PROCEEDS WITH ADDITIONAL WORK WITHOUT FIRST SUBMITTING A CHANGE ORDER REQUEST, THAT WORK WILL BE CONSIDERED PART OF THE SCOPE OF WORK COVERED BY THE CONTRACT AMOUNT AND THE CONTRACTOR WILL NOT BE AUTHORIZED TO SUBMIT A CHANGE ORDER REQUEST AT A LATER DATE.

THE ARCHITECT WILL RESPOND TO A CHANGE ORDER REQUEST IN TEN (10) CALENDAR DAYS WITH APPROVAL, REJECTION, OR A REQUEST TO THE CONTRACTOR FOR CLARIFICATION. IF A REQUEST IS APPROVED, THE ARCHITECT WILL PREPARE A CHANGE ORDER AND SEND IT TO THE OWNER FOR THEIR REVIEW AND APPROVAL. FINAL CHANGE ORDER APPROVAL COMES FROM THE OWNER.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SUBMIT CHANGE ORDER REQUESTS IN A FORMAT THAT IS SUFFICIENT FOR THE ARCHITECT'S REVIEW. CHANGE ORDER REQUESTS MUST INCLUDE, AT A MINIMUM, A BREAKDOWN OF MATERIALS WITH UNIT COSTS, BREAKDOWN OF LABOR WITH HOURLY RATES, BREAKDOWN OF APPLICABLE TAXES, AND ITEMIZED MARKUPS FOR THE CONTRACTOR AND SUBCONTRACTOR IF APPLICABLE. THE FAILURE OF THE CONTRACTOR TO PROVIDE SUFFICIENT INFORMATION FOR EVALUATION OF A CHANGE ORDER REQUEST WILL BE RETURNED BY THE ARCHITECT FOR RESUBMITTAL. THE 21-DAY TIME PERIOD FOR SUBMITTING CHANGE ORDER CLAIMS, AS PROVIDED IN AIA DOCUMENT A201 "GENERAL CONDITIONS FOR THE CONTRACT FOR CONSTRUCTION," LATEST EDITION WILL NOT BE EXTENDED FOR INSUFFICIENT CLAIM SUBMITTALS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SUBMIT A CHANGE ORDER REQUEST IN PROPER FORMAT WITHIN THE 21-DAY WINDOW PROVIDED IN AIA DOCUMENT A201.

CHANGE ORDER MARKUP RATES FOR CONTRACTORS AND THEIR SUBCONTRACTORS ARE LIMITED TO 5.0% EACH, REGARDLESS OF ANY MARKUP THAT MAY BE INCLUDED AND AGREED UPON IN THE BASE CONTRACT AMOUNT.

THE CONTRACTOR PROCEEDS AT HIS OWN RISK IF HE PERFORMS ADDITIONAL WORK ASSOCIATED WITH A CHANGE ORDER REQUEST THAT IS PENDING REVIEW AND APPROVAL BY THE OWNER.

THE NATURE OF THE BID DOCUMENTS IS TO CONVEY THE INTENT OF THE DESIGN. THE BID DOCUMENTS ARE NOT CONSIDERED A COMPREHENSIVE SET OF INFORMATION ADDRESSING ALL ASPECTS OF THE CONSTRUCTION. THE BID DOCUMENTS ARE DIAGRAMMATIC IN NATURE, AND AS SUCH, MAY NOT ACCURATELY REPRESENT A SPECIFIC PRODUCT CALLED FOR IN THE SPECIFICATIONS OR ADDRESSED THROUGH CONTRACTOR SHOP DRAWING SUBMITTALS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR AND HIS SUBCONTRACTORS TO VERIFY ALL INFORMATION IN THE FIELD AND AGAINST MANUFACTURER'S REQUIREMENTS THROUGH SHOP DRAWING SUBMITTALS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR AND HIS SUBCONTRACTORS TO DETERMINE APPROPRIATE TECHNIQUES AND SEQUENCING OF WORK TO ADJUST TO CONDITIONS OBSERVED AT THE SITE DURING THE BID PHASE.

12. CONSTRUCTION SCHEDULE

THE CONTRATOR SHALL SUBMIT A CONSTRUCTION SCHEDULE INDICATING ALL CRITICAL PATH DATES AT LEAST (10) CALENDAR DAYS PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES. THE SCHEDULE SHALL SHOW ALL TRADES, INDICATING THEIR START AND COMPLETION DATES. A COMPLETE LIST OF ALL SUBCONTRACTORS, ALONG WITH THEIR CONTACT INFORMATION SHALL ACCOMPANY THE SUBMISSION OF THE CONSTRUCTION SCHEDULE. PAY APPLICATIONS SUBMITTED BY THE GENERAL CONTRACTOR WILL NOT BE REVIEWED UNTIL (30) CALENDAR DAYS AFTER THE ARCHITECTS RECEIPT OF THE CONTRACTOR'S INITIAL CONSTRUCTION SCHEDULE. THE CONTRACTOR SHALL UPDATE THE CONSTRUCTION SCHEDULE MONTHLY AND SUBMIT IT WITH EACH PAYMENT APPLICATION.

13. SUBMITTALS

THE CONTRACTOR SHALL SUBMIT A SCHEDULE OF SUBMITTALS TO THE ARCHITECT WITHIN TWO WEEKS OF EXECUTING THE CONSTRUCTION AGREEMENT AND AT LEAST (10) CALENDAR DAYS PRIOR TO BEGINNING CONSTRUCTION. THIS SCHEDULE ESTABLISHES THE SEQUENCE OF PRODUCT SELECTION, SUBMITTAL AND REVIEW SO THAT DECISIONS ARE NOT MADE IN THE ABSENCE OF CRITICAL INFORMATION FOR RELATED PRODUCTS. THE SEQUENCE OF SUBMITTALS IS CRITICAL TO THE CONTRACTOR'S COORDINATION OF THE WORK. THE ARCHITECT WILL NOT REVIEW SUBMITTALS OUTSIDE THE ORDER OF THE CONTRACTOR'S SUBMITTAL SCHEDULE. THE CONTRACTOR MAY REVISE THE SUBMITTAL SCHEDULE AS NEEDED TO MANAGE THE COORDINATION OF THE WORK. PAY APPLICATIONS WILL NOT BE PROCESSED BY THE ARCHITECT UNTIL THE INITIAL SUBMITTAL SCHEDULE HAS BEEN RECEIVED BY THE ARCHITECT.

AT A MINIMUM, THE CONTRACTOR SHALL PREPARE, COORDINATE, REVIEW AND SUBMIT INFORMATION ON THE FOLLOWING TO THE ARCHITECT:

- FOUNDATION REINFORCEMENT
- ANCHOR BOLTS
- ASPHALT PAVING MIX
- LANDSCAPING
- IRRIGATION SYSTEMS AND CONTROLS
- JOINT SEALANTS
- CONSTRUCTION ADHESIVES
- STRUCTURAL AND MISCELLANEOUS STEEL
- STEEL BOLLARDS
- PRE-ENGINEERED METAL BUILDING COMPONENTS
- FABRICATED CONCRETE COMPONENTS
- ENGINEERED WOOD PRODUCTS (EXAMPLE: LVL'S AND ENGINEERED JOISTS)
- TRUSSES
- DOORS
- DOOR FRAMES
- DOOR HARDWARE
- CASEWORK
- MILLWORK
- SHELVING
- HANDRAILS
- ROOFING AND ROOFING ACCESSORIES
- GUTTERS AND DOWNSPOUTS
- WATER AND DAMP PROOFING MATERIALS
- MASONRY AND MORTAR (BY PREPARING A SAMPLE PANEL ON SITE)
- MISCELLANEOUS PREFINISHED TRIM METALS
- ALL FLOOR FINISHES
- ALL WALL FINISHES
- RUBBER OR VINYL BASE
- FIRE EXTINGUISHERS
- SIGNAGE
- PLUMBING FIXTURES
- LIGHT FIXTURES
- ELECTRICAL SWITCHGEAR
- ELECTRICAL GENERATORS
- ELECTRICAL TRANSFORMERS
- FIRE ALARM
- SECURITY SYSTEMS

DUE TO THE NON-PROPRIETARY NATURE OF THE SPECIFICATIONS, THE ARCHITECTS DESIGN DOCUMENTS ARE NOT SPECIFIC TO A PARTICULAR MANUFACTURES REQUIREMENTS. AFTER REVIEW OF THE CONTRACTORS' SUBMITTALS, CLARIFICATIONS AND/OR MODIFICATIONS TO THE DESIGN DOCUMENTS MAY BE NECESSARY TO ACCOMMODATE SUBMITTED PRODUCTS NOT PROPRIETARILY SPECIFIED DURING THE BID PHASE. THE CLARIFICATIONS AND MODIFICATIONS RESPONDING TO THE CONTRACTOR'S SUBMITTALS WILL NOT BE CONSIDERED AS A VALID BASIS FOR A CLAIM FOR A CHANGE OF SCOPE.

ALL PRODUCT APPROVALS AND SUBSTITUTIONS INITIATED BY THE CONTRACTOR OR THEIR SUBCONTRACTORS SHOULD BE ADDRESSED DURING THE BID PROCESS. PRODUCT INFORMATION SHOULD BE SUBMITTED IN WRITING TO THE ARCHITECT PRIOR TO DEADLINES ESTABLISHED FOR THE BID SCHEDULE IN ORDER TO BE ADDRESSED BY ADDENDA. PRODUCT SUBSTITUTIONS NOT ADDRESSED BY ADDENDA THAT ARE REQUESTED BY THE CONTRACTOR OR THEIR SUBCONTRACTORS AFTER THE BID PHASE WILL BE CONSIDERED ONLY IF OFFERED AS AN UPGRADE FOR NO ADDITIONAL COST, OR IF THE PRODUCT SUBSTITUTION WILL SHORTEN THE PROJECT SCHEDULE AND/OR REDUCE COST. THE CONTRACTOR MUST BE WILLING TO CONTRACTUALLY AGREE TO REDUCTIONS IN TIME AND /OR COST BY CHANGE ORDER FOR CONTRACTOR-INITIATED PRODUCT SUBSTATIONS.

THE COST FOR THE ARCHITECT AND/OR THEIR CONSULTANT'S TIME AND REIMBURSABLE COSTS ASSOCIATED WITH EVALUATING PRODUCT SUBSTITUTIONS INITIATED BY THE CONTRACTOR OR THEIR SUBCONTRACTORS AFTER THE BID PHASE WILL BE BORNE BY CONTRACTOR. THE COST OF THESE SERVICES WILL BE BASED UPON THE CURRENT RATE SCHEDULE AND SCHEDULE OF REIMBURSABLE COSTS OF THE ARCHITECT AND THEIR CONSULTANTS. THE CONTRACTOR IS NOT RESPONSIBLE FOR THE EVALUATION COST FOR PRODUCT SUBSTITUTIONS REQUESTED BY THE ARCHITECT OR OWNER.

14. WEATHER DELAYS

THE CONTRACT TIME ASSUMES AVERAGE WEATHER CONDITIONS, WHICH WILL INCLUDE TYPICAL RAIN EVENTS. THE CONTACT TIME FOR CONSTRUCTION INCLUDES THE TYPICAL NUMBER OF RAIN DAYS EXPECTED FOR THE DATES OF CONSTRUCTION BASED ON THE FIVE-YEAR AVERAGE RAINFALL FOR THE GIVEN AREA AS DOCUMENTED BY THE NEAREST NATIONAL WEATHER SERVICE REPORTING STATION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BE AWARE OF THE AVERAGE NUMBER OF DAYS OF RAINFALL INCLUDED IN THE CONTRACT TIME AND SCHEDULE THE WORK ACCORDINGLY.

THE CONTRACTOR SHALL SUBMIT DELAYS DUE TO WEATHER TO THE ARCHITECT WITHIN 30 CALENDAR DAYS OF THE WEATHER EVENT. SUBMITTALS OF WEATHER DELAYS SHALL INCLUDE WEATHER REPORTS, DIGITAL PHOTOGRAPHS, CONSTRUCTION SCHEDULE INDICATING CRITICAL PATH ACTIVITIES AND FIELD LOGS FOR THE DAYS AFFECTED. A MINIMUM OF 0.25" OF RAIN WILL BE THE MINIMUM AMOUNT OF RAINFALL ACCEPTED FOR A QUALIFYING RAIN EVENT. THE CONTRACTOR MAY SUBMIT FOR UP TO ONE (1) ADDITIONAL CALENDAR DAY FOR A RAIN EVENT REQUIRING DEWATERING ACTIVITIES THE FOLLOWING DAY, OR WHERE FIELD LOGS AND PHOTOGRAPHS INDICATE SITE CONDITIONS THAT ARE TOO WET FOR SCHEDULED EXTERIOR CONSTRUCTION ACTIVITIES.

A RAIN EVENT DOES NOT CONSTITUTE A DELAY UNLESS IT DIRECTLY AFFECTS CRITICAL PATH ACTIVITIES AS DOCUMENTED ON THE MOST CURRENT VERSION OF THE CONTRACTOR'S CONSTRUCTION SCHEDULE. WEATHER RELATED DELAYS MAY NOT BE SUBMITTED BY THE CONTRACTOR PRIOR TO SUBMITTING A CONSTRUCTION SCHEDULE. WEATHER EVENTS OCCURRING BEFORE THE INITIAL CONSTRUCTION SCHEDULE IS SUBMITTED WILL NOT BE CONSIDERED.

APPROVED RAIN DELAYS WILL BE DEDUCTED FROM THE AVERAGE NUMBER OF RAIN DAYS INCLUDED IN THE CONTRACT TIME. AT THE POINT WHEN THE ACTUAL NUMBER OF APPROVED RAIN DELAYS EXCEEDS THE NUMBER OF RAIN DAYS EXPECTED DURING THE CONTRACT TIME, THE CONTRACTOR SHALL BE ENTITLED TO AN EXTENSION OF THE CONTRACT TIME.

15. SUBSTANTIAL COMPLETION

PRIOR TO REQUESTING AN INSPECTION FOR SUBSTANTIAL COMPLETION, THE CONTRACTOR SHALL PERFORM A PUNCH LIST AND SUBMIT IT TO THE ARCHITECT INDICATING ALL KNOWN INCOMPLETE ITEMS. UPON REVIEW OF THE CONTRACTORS PUNCH LIST, THE ARCHITECT WILL DETERMINE IF THE WORK APPEARS TO BE SUFFICIENTLY COMPLETE TO QUALIFY FOR THE ARCHITECTS INSPECTION FOR SUBSTANTIAL COMPLETION. THE ARCHITECT WILL PERFORM ONE (1) SITE VISIT FOR THE PURPOSES OF DETERMINING SUBSTANTIAL COMPLETION. IF, UPON INSPECTION, THE ARCHITECT DETERMINES THE WORK IS NOT SUBSTANTIALLY COMPLETE AND NOT READY FOR OWNER OCCUPANCY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ARCHITECTS COSTS FOR ALL ADDITIONAL SITE VISITS REQUIRED TO REVIEW THE WORK AND DETERMINE SUBSTANTIAL COMPLETION.

IF THE WORK IS SUBSTANTIALLY COMPLETE AND READY FOR OWNER OCCUPANCY, THE ARCHITECT WILL ISSUE A SUBSTANTIAL COMPLETION FORM THAT INCLUDES THE ARCHITECTS PUNCH LIST OF INCOMPLETE ITEMS AND THE AMOUNT TO BE WITHHELD FROM RETAINAGE. AS OF THE DATE OF SUBSTANTIAL COMPLETION, ALL WARRANTIES WILL BE CONSIDERED IN AFFECT AND THE CALCULATION OF ACTUAL CONSTRUCTION TIME WILL END.

UPON SUBSTANTIAL COMPLETION, THE CONTRACTOR MAY APPLY FOR THE BALANCE OF THE CONTRACT AMOUNT, INCLUDING RETAINAGE LESS AN AMOUNT FOR INCOMPLETE ITEMS. THE ARCHITECT WILL DETERMINE A MINIMUM AMOUNT TO BE WITHHELD FROM RETAINAGE FOR THE SUBSTANTIAL COMPLETION PUNCH LIST ITEMS THAT IS EQUAL TO APPROXIMATELY THREE (3) TIMES THE VALUE OF THE INCOMPLETE WORK. THE PUNCH LIST ITEMS ATTACHED TO THE SUBSTANTIAL COMPLETION FORM MUST BE COMPLETED BY THE CONTRACTOR IN FOURTEEN (14) CALENDAR DAYS OF THE DATE OF SUBSTANTIAL COMPLETION. RETAINAGE WITHHELD FOR THE SUBSTANTIAL COMPLETION PUNCH LIST WILL NOT BE RELEASED, IN WHOLE OR IN PART, UNTIL ALL ITEMS ON THE SUBSTANTIAL COMPLETION PUNCH LIST ARE COMPLETE. AFTER FOURTEEN (14) CALENDAR DAYS PAST SUBSTANTIAL COMPLETION, THE OWNER HAS THE RIGHT TO SPEND THE RETAINAGE TOWARD COMPLETION OF THE ITEMS ON THE SUBSTANTIAL COMPLETION PUNCH LIST.

THE CONTRACTOR'S APPLICATION FOR FINAL PAYMENT MUST INCLUDE THE FOLLOWING DOCUMENTATION BEFORE IT WILL BE REVIEWED AND PROCESSED.

- CONTRACTOR'S RELEASE AND WAIVER OF LIENS (ON CONTRACTOR'S LETTERHEAD)
- AIA G706 FROM GC AND ALL SUBCONTRACTORS
- AIA G706A FROM GC AND ALL SUBCONTRACTORS
- TYPEWRITTEN LIST OF ALL SUBCONTRACTORS WITH CONTACT NAME, PHONE AND FAX NUMBERS, AND MAILING AND PHYSICAL ADDRESSES. LIST DESCRIPTION OF TRADE WITH EACH SUBCONTRACTOR ENTRY.
- AIA G707 FROM GC'S SURETY WHERE APPLICABLE
- COPY OF CERTIFICATE OF OCCUPANCY FROM AHJ
- COPY OF APPROVAL LETTERS FROM OTHER AHJ'S SPECIFIC TO PROJECT TYPE (I.E. SCDHEC, OFFICE OF STATE ENGINEER, STATE FIRE MARSHAL, DEPARTMENT OF SOCIAL SERVICES, ETC.)
- (2) COPIES OF ALL WARRANTIES AND INSTRUCTION MANUALS BOUND IN A THREE-RING BINDER AND ORGANIZED BY TAB DIVIDERS IDENTIFYING EACH PRODUCT OR SYSTEM.

THE OWNER RESERVES THE RIGHT TO WITHHOLD FINAL PAYMENT AND/OR RELEASE OF RETAINAGE UNTIL ALL OF THE ABOVE DOCUMENTATION HAS BEEN SUBMITTED BY THE CONTRACTOR.

ABBREVIATIONS

NO. OR #	NUMBER OR POUND
&	AND
@	AT
AB	ANCHOR BOLT
AC	ACRE
ADJ	ADJUSABLE
AFF	ABOVE FINISH FLOOR
AHU	AIR HANDLING UNIT
ALUM	ALUMINUM
ANOD	ANODIZED
APPROX	APPROXIMATELY
BF	BI-FOLD
BLDG	BUILDING
BLK	BLOCK
BRDG	BRIDGING
CT	CERAMIC TILE
CB	CATCH BASIN
CDX	TYPE OF WOOD
CF	CUBIC FEET
CI	CUBIC INCHES
CJ	CONTROL JOINT
CL	CENTER LINE
CLG	CEILING
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
CO	CASED OPENING
COL	COLUMN
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
CORR	CORRUGATED
CPT	CARPET
CU	CONDENSING UNIT
CY	CUBIC YARDS
DF	DRINKING FOUNTAIN
DS	DOWNSPOUT
DBL	DOUBLE
DIA	DIAMETER
DIM	DIMENSION
DN	DOWN
DR	DOOR
DW	DRYWALL
DWG	DRAWING
EJ	EXPANSION JOINT
ELEC	ELECTRICAL
ELEV	ELEVATION
ELU	EMERGENCY LIGHTING UNIT
EQ	EQUAL
EW	EACH WAY
EWC	ELECTRIC WATER COOLER
EXIST/EXST	EXISTING
EXP	EXPANSION
FB	FACE OF BRICK
FD	FLOOR DRAIN
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER & CABINET
FFE	FINISH FLOOR ELEVATION
FIN	FINISH
FLR	FLOOR
FLUOR	FLUORESCENT
FND	FOUNDATION
FM	FACE OF MASONRY
FP	FIRE PROTECTION (SPRINKLER)
FS	FACE OF STUD
FTG	FOOTING
FW	FACE OF WALL
GA	GUAGE
GAL	GALLON
GALV	GALVANIZED
GB	GRAB BAR
GL	GLASS
GWB	GYPSUM WALL BOARD
GYP	GYPSUM
HCWD	HOLLOW CORE WOOD
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HT	HEIGHT
HVAC	HEATING, COOLING & VENTILATION

HW	HARDWARE
ID	INSIDE DIAMETER
INSUL	INSULATION
INT	INTERIOR
JAN	JANITOR
JB	JUNCTION BOX
JST	JOIST
LAM	LAMINATE
LAV	LAVATORY
LVL	LAMINATED VENEER LUMBER
MAT	MATERIAL
MAX	MAXIMUM
MB	MOISTURE BARRIER
MBL	MARBLE
MIN	MINIMUM
MO	MASONRY OPENING
MR	MOISTURE RESISTANT
MT	MARBLE THRESHOLD
MTL	METAL
NIC	NOT IN CONTRACT
NOM	NOMINAL
OC	ON CENTER
OD	OUTSIDE DIAMETER
OH	OVERHEAD
OPNG	OPENING
OPP	OPPOSITE
PT	PRESSURE TREATED
PLAM	PLASTIC LAMINATE
PLYWD	PLYWOOD
QT	QUARRY TILE
R OR RAD	RADIUS
RD	ROOF DRAIN
RO	ROUGH OPENING
REINF	REINFORCING
REQD	REQUIRED
RM	ROOM
SCWD	SOLID CORE WOOD
SHLV	SHELVES
SI	SQUARE INCHES
SIM	SIMILAR
SF	SQUARE FEET
SPEC	SPECIFICATIONS
SQ	SQUARE
SS	STAINLESS STEEL
SSMR	STANDING SEAM METAL ROOF
STD	STANDARD
STL	STEEL
SV	SEAMLESS VINYL
SY	SQUARE YARDS
TEMP	TEMPORARY
THK	THICK OR THICKNESS
TOJ	TOP OF JOIST
TOS	TOP OF STEEL
TOW	TOP OF WALL
TYP	TYPICAL
UL	UNDERWRITERS' LABORATORIES
UNO	UNLESS NOTED OTHERWISE
VB	VAPOR BARRIER
VIF	VERIFY IN FIELD
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL
VTR	VENT TO ROOF
VWC	VINYL WALL COVERING
WC	WATER CLOSET
WH	WATER HEATER
WIN	WINDOW
WWF	WELDED WIRE FABRIC
W/	WITH
WD	WOOD

THIS IS A LIMITED ARCHITECTURAL SERVICE PROJECT. TO THE BEST OF HIS KNOWLEDGE, THE DESIGNER HAS PREPARED THESE DRAWINGS TO COMPLY WITH THE CLIENTS PROGRAM. ALTHOUGH EVERY REASONABLE EFFORT HAS BEEN MADE TO AVOID ERRORS, OMISSION, AND MISTAKES, THE CONTRACTOR AND/OR CLIENT SHALL VERIFY ALL CONDITIONS, DIMENSIONS, DETAILS AND COMPLIANCE WITH ADA AND ALL APPLICABLE CODES AND STANDARDS. THESE DRAWINGS ARE FOR GENERAL LAYOUT ONLY. THE OWNER AND CONTRACTOR HAVE THE RESPONSIBILITY FOR PROVIDING ALL REQUIRED ENGINEERING SERVICES AND DRAWINGS NOT CONTAINED IN THIS SET OF DRAWINGS PREPARED BY THE ARCHITECT AND/OR CONSULTANTS UNDER DIRECT CONTRACT WITH THE ARCHITECT. THE OWNER AND CONTRACTOR ARE RESPONSIBLE FOR ANY INFORMATION NOT CONTAINED HEREIN AND AGREE TO RELEASE THE ARCHITECT AND THE ARCHITECTS CONSULTANTS FROM ANY AND ALL RESPONSIBILITIES NOT EXPLICITLY LISTED IN THE SCOPE OF THE ARCHITECTS SERVICES IN THE AGREEMENT WITH THE ARCHITECTS CLIENT. (I.E. SPECIAL INSPECTIONS, ENGINEERING COORDINATION, CONTRACT ADMINISTRATION, SHOP DRAWING APPROVALS, ETC. UNLESS SPECIFICALLY REQUESTED BY THE OWNER.) CONTRACTOR SHALL DETERMINE PROPER CONSTRUCTION METHODS AND TECHNIQUES TO COMPLY WITH THE INTENT OF THE DRAWINGS. ALSO, CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION SITE SAFETY.

LIMITED SERVICES PROJECT

BY USE OF THESE DRAWINGS AS INSTRUMENTS OF SERVICE FOR OBTAINING PERMITS AND/OR THE CONSTRUCTION OF THE IMPROVEMENTS DESCRIBED IN THESE DOCUMENTS, THE CLIENT HEREBY ACKNOWLEDGES AND AGREES TO LIMIT THE LIABILITY OF THE ARCHITECT AND THE ARCHITECTS CONSULTANTS TO $50,000.00 OR THE TOTAL AMOUNT OF THE ARCHITECT'S FEES AS ENUMERATED IN THE AGREEMENT EXECUTED BETWEEN THE ARCHITECT AND THE CLIENT, WHICHEVER IS THE LESSER. IN THE ABSENCE OF AN AGREEMENT BETWEEN THE ARCHITECT AND THE CLIENT, THE ARCHITECTS LIABILITY SHALL BE LIMITED TO $50,000.00 OR THE TOTAL AMOUNT OF PAID TO THE ARCHITECT BY THE OWNER FOR SERVICES RENDERED, WHICHEVER IS THE LESSER.

LIMIT OF LIABILITY

THE CLIENT AGREES, IN ANY CONSTRUCTION CONTRACTS IN CONNECTION WITH THIS PROJECT, TO REQUIRE ALL CONTRACTORS OF ANY TIER TO CARRY STATUTORY WORKERS COMPENSATION, EMPLOYERS LIABILITY INSURANCE AND APPROPRIATE LIMITS OF COMMERCIAL GENERAL LIABILITY INSURANCE (CGL). THE CLIENT FURTHER AGREES TO REQUIRE ALL CONTRACTORS TO HAVE THEIR CGL POLICIES ENDORSED TO NAME THE CLIENT, THE CONSULTANT AND ITS SUBCONSULTANTS AS ADDITIONAL INSUREDS AND TO PROVIDE CONTRACTUAL LIABILITY COVERAGE SUFFICIENT TO INSURE THE HOLD HARMLESS AND INDEMNITY OBLIGATIONS ASSUMED BY THE CONTRACTORS. THE CLIENT SHALL REQUIRE ALL CONTRACTORS TO FURNISH TO THE CLIENT AND THE CONSULTANT CERTIFICATES OF INSURANCE AS EVIDENCE OF THE REQUIRED INSURANCE PRIOR TO COMMENCING WORK AND UPON RENEWAL OF EACH POLICY DURING THE ENTIRE PERIOD OF CONSTRUCTION. IN ADDITION, THE CLIENT SHALL REQUIRE THAT ALL CONTRACTORS WILL, TO THE FULLEST EXTENT PERMITTED BY LAW, INDEMNIFY AND HOLD HARMLESS THE CLIENT, THE CONSULTANT AND ITS SUBCONSULTANTS FROM AND AGAINST ANY DAMAGES, LIABILITIES OR COST, INCLUDING REASONABLE ATTORNEYS' FEES AND DEFENSE COSTS, ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE PROJECT, INCLUDING ALL CLAIMS BY EMPLOYEES OF THE CONTRACTORS.

CONTRACTOR INSURANCE AND INDEMNITY REQUIREMENTS

THE CLIENT AND CONTRACTOR AGREES, TO THE FULLEST EXTENT PERMITTED BY LAW, TO INDEMNIFY AND HOLD HARMLESS THE CONSULTANT, ITS OFFICERS, DIRECTORS, EMPLOYEES AND SUBCONSULTANTS (COLLECTIVELY CONSULTANT) AGAINST ALL DAMAGES, LIABILITIES OR COST, INCLUDING REASONABLE ATTORNEYS' FEES AND DEFENSE COST, TO THE EXTENT CAUSED BY THE CLIENTS NEGLIGENT ACTS IN CONNECTION WITH THE PROJECT AND THE ACTS OF ITS CONTRACTORS, SUBCONTRACTORS OR CONSULTANTS OR ANYONE FOR WHOM THE CLIENT IS LEGALLY LIABLE. NEITHER THE CLIENT NOR THE CONSULTANT SHALL BE OBLIGATED TO INDEMNIFY THE OTHER PARTY IN ANY MANNER WHATSOEVER FOR THE OTHER PARTY'S OWN NEGLIGENCE.

INDEMNIFICATION

LANGLEY & ASSOCIATES ARCHITECTS, LLC

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ARCHITECTS

REVISIONS		
NO.	DATE	DESCRIPTION

REGISTERED ARCHITECT, STATE OF SOUTH CAROLINA, DAVID E. LANGLEY, GREER, SC, 4739, 04-15-2016

REGISTERED ARCHITECT, STATE OF SOUTH CAROLINA, Langley & Associates, Greer, SC, 95012

NEW RESTROOM BLDG.
EAST RIVERSIDE PARK
1155 S. SUBER ROAD · GREER, SC

Notes & Supplemental Conditions

JOB NO: 2015-13E
DATE: 04-15-2016
DESC: ISSUE FOR BIDS

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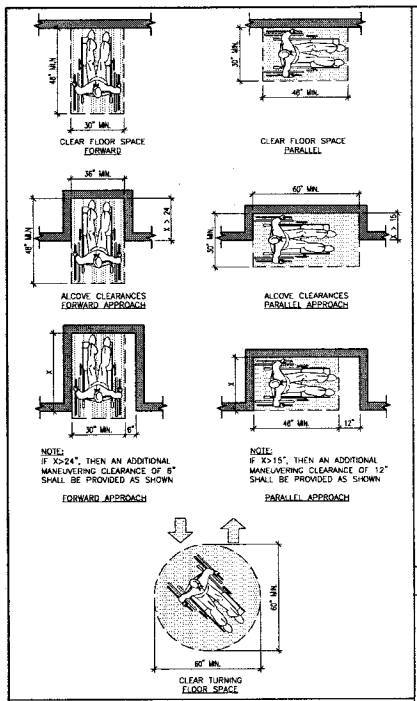
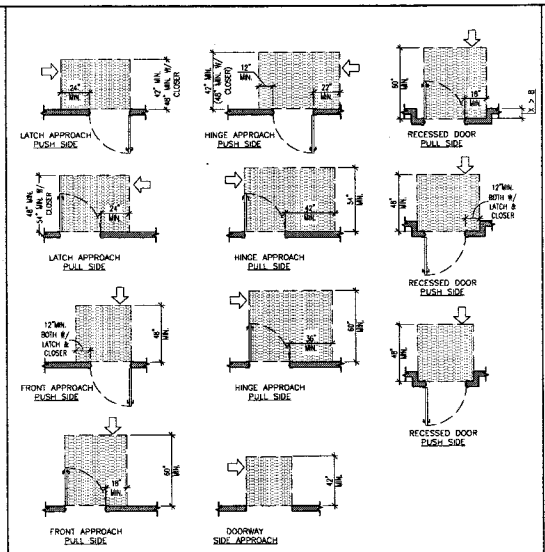
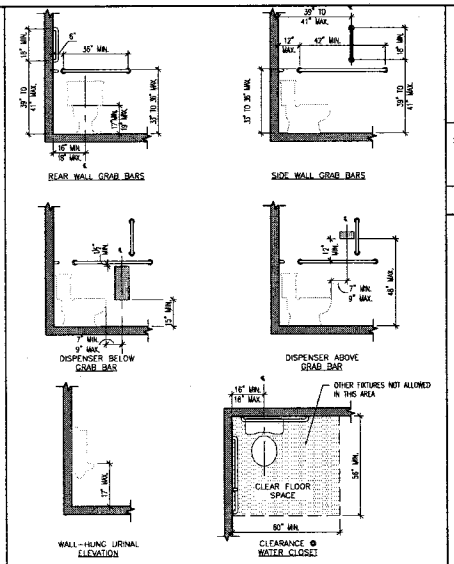


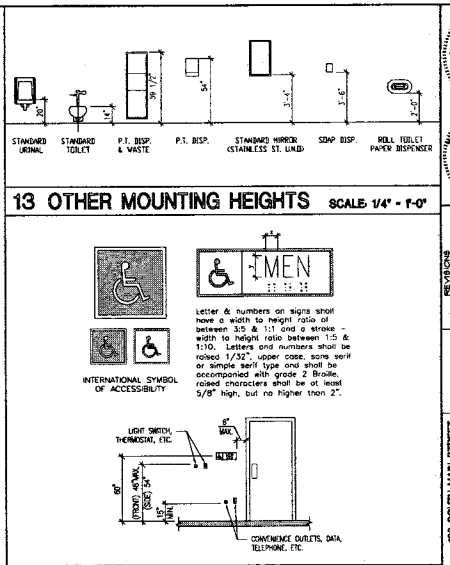
6 CLEAR FLOOR SPACE SCALE: 3/8" - 1'-0"



10 DOORWAY APPROACH & CLEARANCES SCALE: 1/4" - 1'-0"

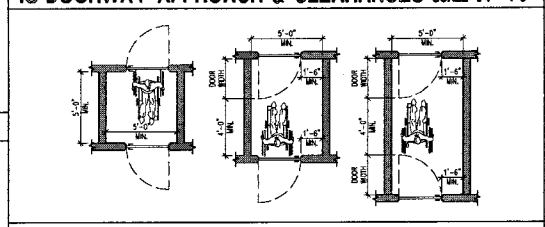


11 TOILET CLEARANCES SCALE: 3/8" - 1'-0"

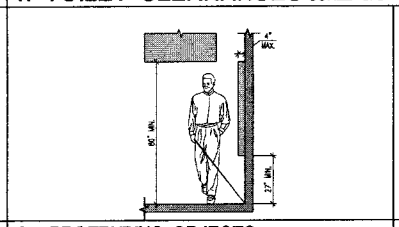


13 OTHER MOUNTING HEIGHTS SCALE: 1/4" - 1'-0"

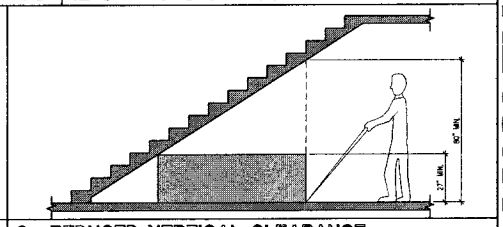
12 SYMBOLS OF ACCESSIBILITY SCALE: 1/4" - 1'-0"



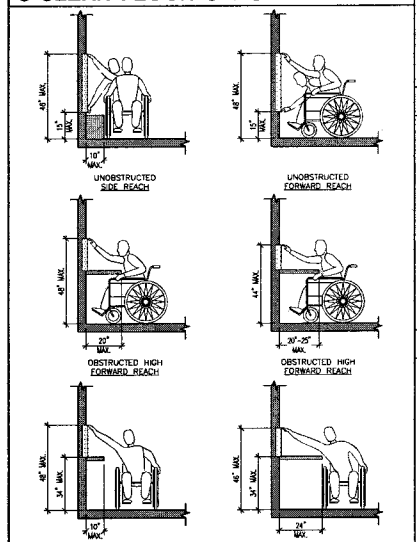
7 2 DOORS IN SERIES SCALE: 1/4" - 1'-0"



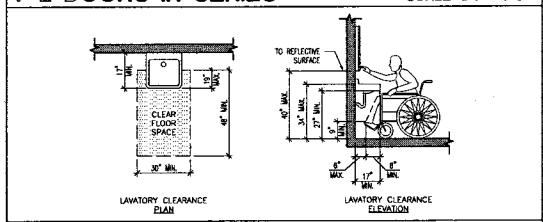
8 PROTRUDING OBJECTS SCALE: 3/8" - 1'-0"



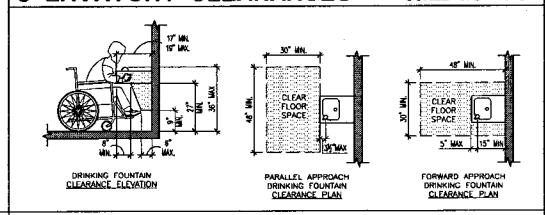
9 REDUCED VERTICAL CLEARANCE SCALE: 3/8" - 1'-0"



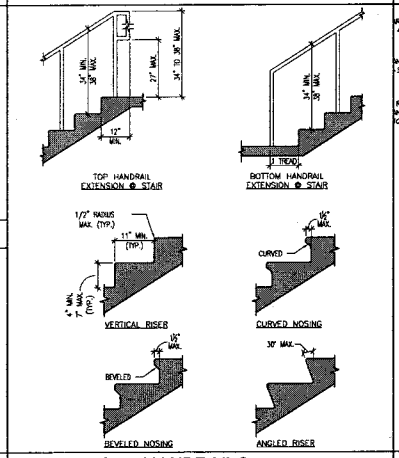
1 REACH RANGES SCALE: 3/8" - 1'-0"



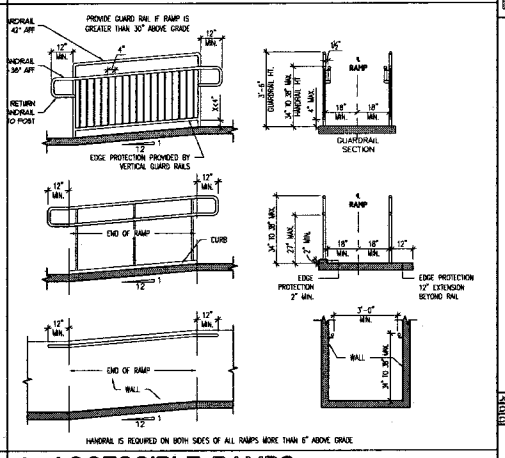
5 LAVATORY CLEARANCES SCALE: 3/8" - 1'-0"



2 DRINKING FOUNTAIN CLEARANCES SCALE: 3/8" - 1'-0"



3 STAIRS & HANDRAILS SCALE: 3/4" - 1'-0"



4 ACCESSIBLE RAMPS SCALE: 3/8" - 1'-0"

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JOB NO: 2015-13
DATE: 04-15-2016
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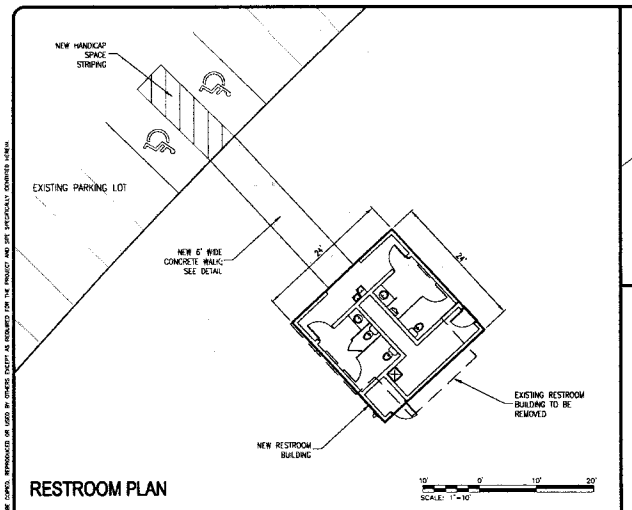
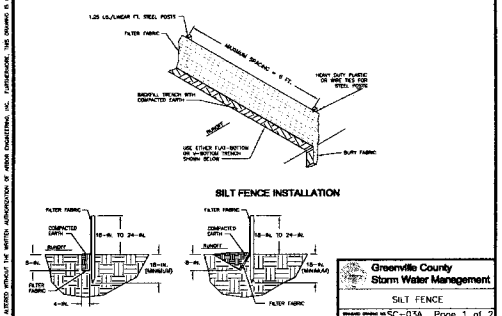


RESTROOM PLAN

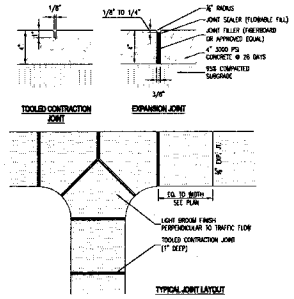
LOCATION MAP



Greenville County
Storm Water Management

SILT FENCE

SC-03A Page 1 of 2



NOTES:
1. ALL SIDEWALKS SHALL BE MIN. 3000 PSI CONCRETE, 4" THICK.
2. CONTRACTION JOINTS SHALL BE SPACED AT 6' INTERVALS FOR 6' SIDEWALKS.
3. CONTRACTION JOINTS SHALL BE 1" DEEP AND TOOLED W/ A 1/8" RADIUS.
4. ONE 3/8" EXPANSION JOINT SHALL BE REQUIRED AT 45' INTERVALS (OR AS NOTED ON PLANS, NOT TO EXCEED 50' AND MATCHING EXPANSION/CONTRACTION JOINT IN ADJACENT CURB. A SEALED 1/2" EXPANSION JOINT SHALL BE REQUIRED WHERE THE SIDEWALK JOINS ANY FIXED STRUCTURE.

CONCRETE WALK DETAIL

ZONING PLAN REVIEW

ZONING CLASSIFICATION: R-S
OCCUPANCY USE PER GCZO TABLE 6.1: RECREATION - COMMUNITY AREA
SETBACKS PER GCZO TABLE 7.3
FRONT: 40'
REAR: 5'
RIGHT SIDE: 5'
LEFT SIDE: 5'
NUMBER OF PARKING SPACES REQUIRED PER GCZO 12:1, 12:2, 12:3 - 0*
NUMBER OF PARKING SPACES PROVIDED - 0
PARKING LOT LANDSCAPING PER GCZO 12:4 - 0**
SCREENING PER GCZO 12:9 - N/A***

*NO REQUIRED PARKING FOR RESTROOMS

**NOT ADDING PARKING SPACES

***REPLACEMENT ONLY OF EXISTING RESTROOM BUILDING

TREE ORDINANCE PLAN REVIEW

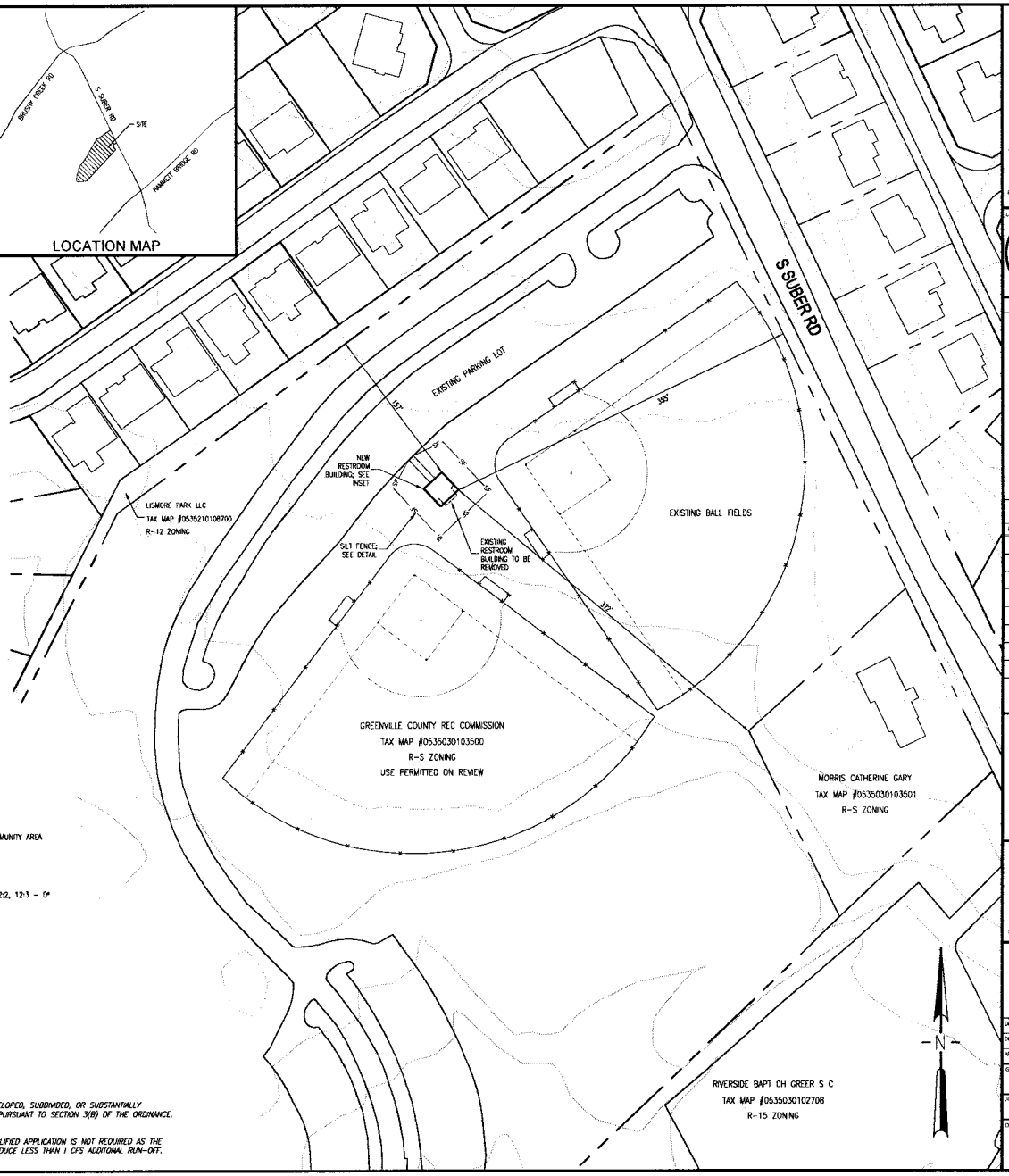
N/A ACRES DISTURBED
N/A DENSITY UNITS REQUIRED

A TREE PRESERVATION/PROTECTION PLAN IS ON FILE: NO

A TREE PLANTING PLAN IS ON FILE: NO

DUE TO THE FACT THAT THIS SITE IS NOT BEING REDEVELOPED, SUBDIVIDED, OR SUBSTANTIALLY CHANGED, A TREE PROTECTION PLAN IS NOT REQUIRED PURSUANT TO SECTION 3(B) OF THE ORDINANCE.

NOTE:
PURSUANT TO LAND DEVELOPMENT REGULATIONS, A SIMPLIFIED APPLICATION IS NOT REQUIRED AS THE DISTURBED AREA IS LESS THAN 5000 SF AND WILL PRODUCE LESS THAN 1 CFS ADDITIONAL RUN-OFF.



ARBOR ENGINEERING
Box 263 Greenville, S.C. 29602
Telephone: (864) 235-3589 Fax: 233-6274
Email: arbor@arborengineering.com
LANDSCAPE ARCHITECTS - CIVIL ENGINEERS
RECREATIONAL PLANNERS - LAND PLANNERS - URBAN PLANNERS

L.S.A. SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION NUMBER C00533 ARBOR ENGINEERING, INC.

SEAL

LEGEND

REVISIONS

NO.	DATE	DESCRIPTION	BY
-	-	-	-

GREENVILLE COUNTY REC
EAST RIVERSIDE PARK

GREENVILLE COUNTY SC

NEW RESTROOM SITE PLAN

DRAWN	JRS	DATE	MAY 11, 2016
DESIGN	JRS	HORIZONTAL SCALE	1:50
APPROVED	JMS	VERTICAL SCALE	-

GRAPHIC SCALE 50' 0' 50' 100'
SCALE: 1"=50'

JOB NO. 16033

DRAWING NO. C-101

SHEET NO. 1 OF 1

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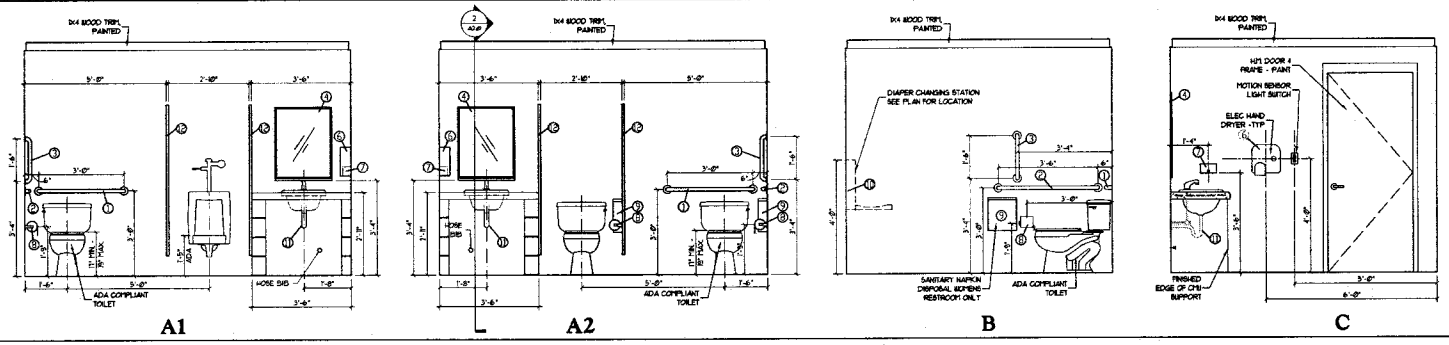
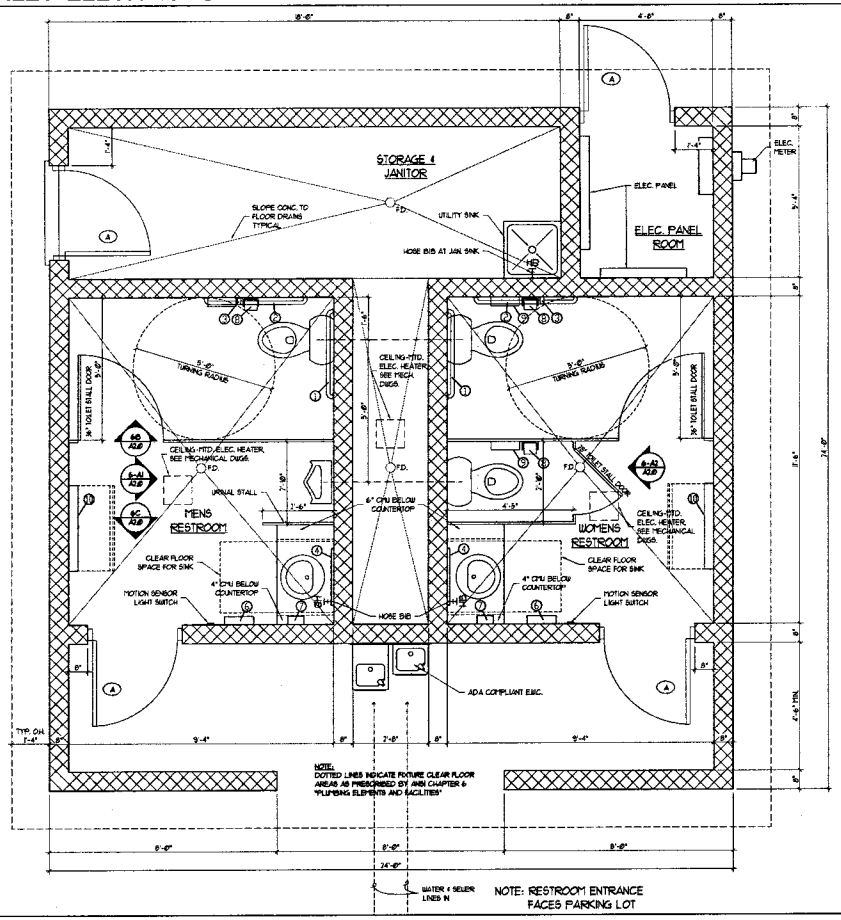


TOILET ACCESSORY SCHEDULE		
1	36" LONG GRAB BAR	ASI 3600BP SERIES, TYPE 01 CONFIGURATION, PEENED FINISH (OR APPROVED EQUAL)
2	42" LONG GRAB BAR	ASI 3600BP SERIES, TYPE 01 CONFIGURATION, PEENED FINISH (OR APPROVED EQUAL)
3	18" LONG GRAB BAR	ASI 3600BP SERIES, TYPE 01 CONFIGURATION, PEENED FINISH (OR APPROVED EQUAL)
4	MIRROR UNIT (24" X 36") (ADA MOUNTING HEIGHT)	ASI 0620 SERIES, STAINLESS STEEL (OR APPROVED EQUAL)
5	PAPER TOWEL DISPENSER	----NOT USED----
6	ELECTRIC HAND DRYER	XLERATOR XL-SB, STAINLESS STEEL (OR APPROVED EQUAL)
7	LIQUID SOAP DISPENSER	OWNER FURNISHED, CONTRACTOR INSTALLED
8	TOILET TISSUE DISPENSER	OWNER FURNISHED, CONTRACTOR INSTALLED
9	SANITARY NAPKIN DISPOSAL	ASI 0892, S.T. STEEL (OR APPROVED EQUAL)
10	DIAPER CHANGING STATION	OWNER FURNISHED, CONTRACTOR INSTALLED
11	UNDERSINK PIPE COVER	LAVGUARD 262 SERIES (OR APPROVED EQUAL)
12	TOILET PARTITIONS	REFER TO SPECIFICATIONS

NOTE: PROVIDE ANCHORS IN WALLS FOR ACCESSORY ITEMS AS INDICATED. SEE ACCESSORY SCHEDULE FOR NAME, AND MODEL

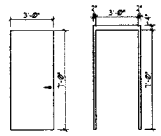
6 TOILET ELEVATIONS

SCALE: 1/2" - 1'-0"



1 FLOOR PLAN

SCALE: 1/2" - 1'-0"

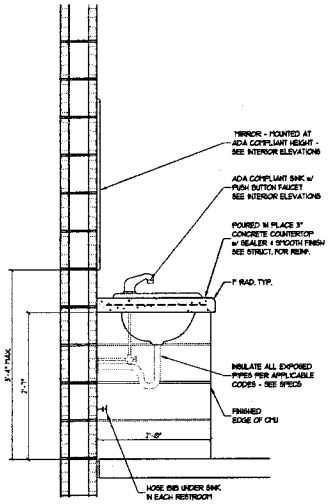


NOTE: ALL DOORS TO BE METAL DOORS FACTORY PRIMED, FIELD PAINTED

4 DOOR ELEV.

ROOM FINISH SCHEDULE							
ROOM NAME	FLOOR	BASE	WALL	CEILING			REMARKS
				HEIGHT	MAT'L	FINISH	
MENS RESTROOM	CONC.- SEALED w/ EPOXY	-	EPOXY PAINTED CMU	8'-3"	PLYWOOD	PAINT	1x4 TRIM AT CLG. -PAINT
STORAGE AND JANITOR	CONC.- SEALED	-	-	8'-3"	PLYWOOD	PAINT	-
WOMEN RESTROOM	CONC.- SEALED w/ EPOXY	-	EPOXY PAINTED CMU	8'-3"	PLYWOOD	PAINT	1x4 TRIM AT CLG. -PAINT
ELEC. PANEL ROOM	CONC.- SEALED	-	EPOXY PAINTED CMU	8'-3"	PLYWOOD	PAINT	-

5 ROOM SCHEDULE



2 SINK SECTION

SCALE: 1" - 1'-0"

3 NOT USED

SCALE: N/A

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FLOOR PLAN & ELEVATIONS

JOB NO: 2015-13E
DATE: 04-15-2016
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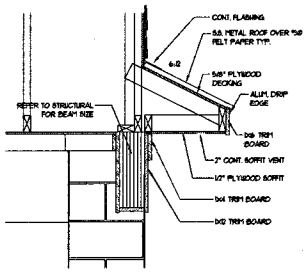
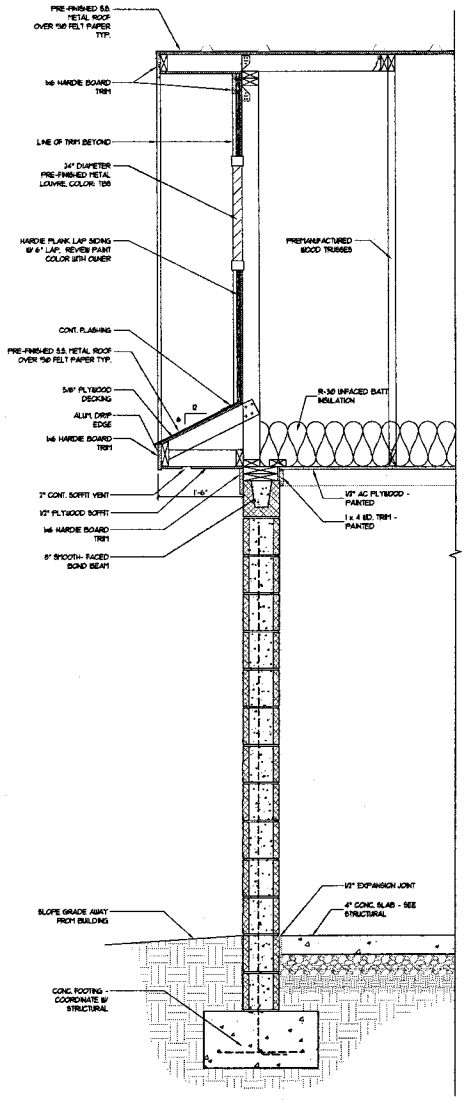
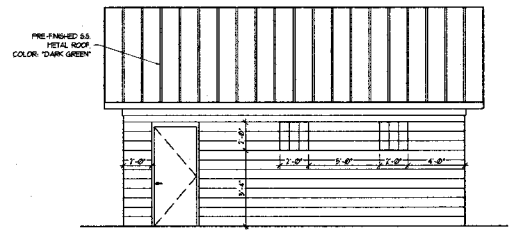
-- NOT USED SCALE: N/A



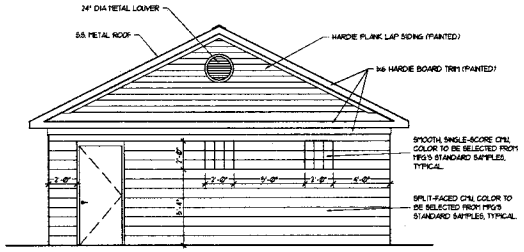
1 SECTION @ BEAM SCALE: 1" - 1'-0"



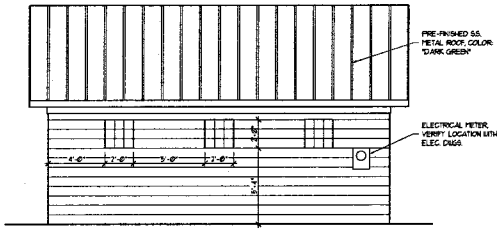
2 WALL SECTION @ GABLE END SCALE: 1" - 1'-0"



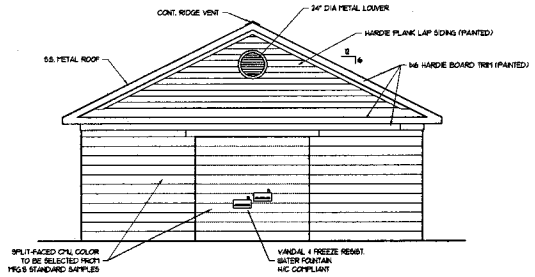
6 LEFT ELEVATION SCALE: 1/4" - 1'-0"



5 REAR ELEVATION SCALE: 1/4" - 1'-0"



4 RIGHT ELEVATION SCALE: 1/4" - 1'-0"



3 FRONT ELEVATION SCALE: 1/4" - 1'-0"

STATE OF SOUTH CAROLINA
Langley & Associates
Greer, SC
99912
REGISTERED ARCHITECT

STATE OF SOUTH CAROLINA
DAVID E. LANGLEY
GREER, SC
4719
REGISTERED ARCHITECT
04-15-2016

REVISIONS
NO. DATE DESCRIPTION

LA ARCHITECTS

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EXTERIOR ELEVATIONS

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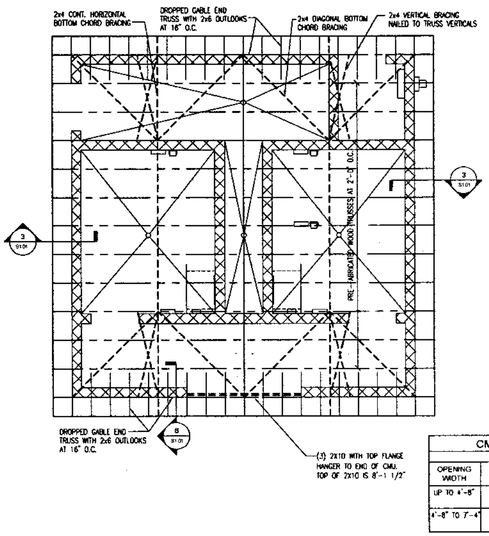
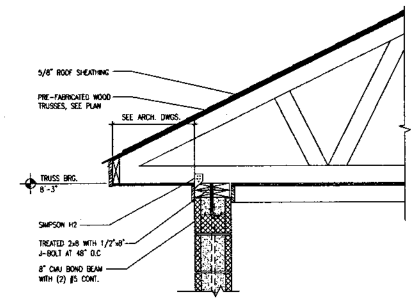


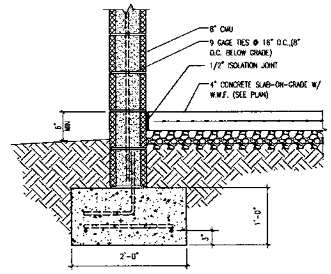
2 ROOF FRAMING PLAN
S101 1/4" = 1'-0"

CMU Lintel Schedule		
OPENING WIDTH	LINTEL BLOCK	MINIMUM BEARING
UP TO 4'-8"	8"x8" W/ (2) #5	8"
4'-8" TO 7'-4"	8"x16" W/ (2) #6	16"

1. (1) #5 AT ALL JAMBS AND SILLS OF OPENINGS.
2. SIZES SHOWN ARE FOR RUNNING BOND CMU ONLY.



3 SECTION
S101 1" = 1'-0"



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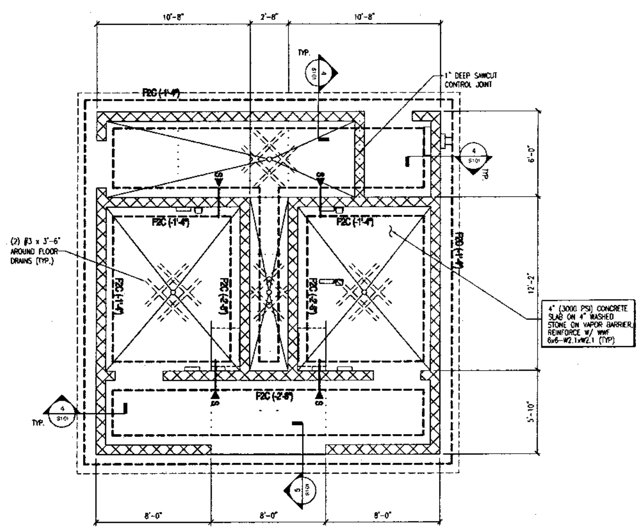
S101 1" = 1'-0"

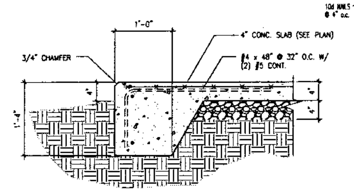


1 FOUNDATION / SLAB PLAN
S101 1/4" = 1'-0"

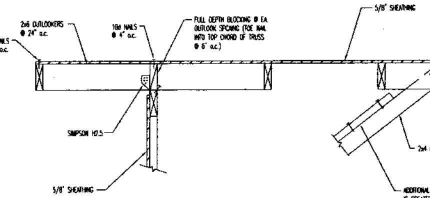
LEGEND:

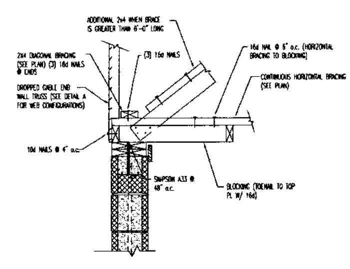
FX = FOOTING TYPE, SEE SCHEDULE ON THIS SHEET
(-X'-X") = TOP OF FOOTING ELEVATION FROM REF. T/SLAB ELEV. 0'-0"
S ▶—— = FOOTING ELEVATION STEP, SEE A/S101

Foundation Schedule			
TYPE	WIDTH X LENGTH	THICKNESS	REINFORCING
F2C	2'-0"xCONTINUOUS	12"	(2) #5 CONT

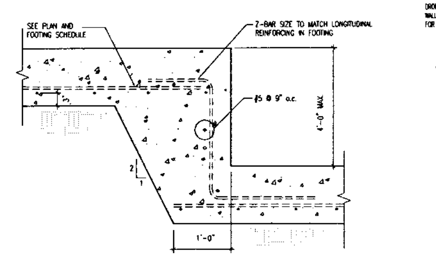


5 SECTION
S101 1" = 1'-0"





6 SECTION
S101 1" = 1'-0"



A DETAIL - STEP-FOOTING
S101

01000 GENERAL

1. The structure reflected on the drawings is structurally sound in its completed condition only. The design of any and all temporary shoring and bracing prior to the completed condition shall be the contractor's responsibility. The Structural Engineer of Record (EOR) shall not be responsible for the means, methods, techniques, sequences, procedures nor safety programs which are employed by the contractor to build the completed structure. Any deviations from the completed structure represented in the drawings must be submitted to the EOR for approval in writing.
2. The Contractor shall verify all conditions including existing structures (above and below grade) and shall notify of the EOR of any discrepancies. The Contractor shall perform all required field measurements.
3. The Sections and Details shown shall be considered to be typical for all similar conditions. The Contractor shall submit written Requests for Information for areas in question.
4. The Contractor shall submit shop drawings for each of the structural components shown on the drawings.

03000 FOUNDATIONS:

1. The Contractor shall notify the EOR of any below grade structure which may affect the foundation performance.
2. Foundations shall bear on residual soils or engineered fill capable of supporting an allowable pressure of 3000 psf.

03300 CAST-IN-PLACE CONCRETE:

1. All concrete work and materials shall be in accordance with ACI 318 2008 and ACI 301.
2. Minimum Material Specifications:
   a. Portland Cement: ASTM C150, Type 1
   b. Fly Ash: ASTM C 618, Type F (limit to 20% of cementitious content)
   c. Maximum water/cementitious material ratio: 0.5.
   d. No water may be added at the site without consent of the engineer.
3. Slabs-on-grade:
   a. Slabs-on-grade and foundations shall have a 28 day compressive strength of 3000 psi. Concrete shall have air-entraining admixture.
   b. Slabs to receive a light broom finish with overall F_f =35 and F_l = 25, and minimum local values of F_f = 24 and F_l = 17.
   c. Slabs shall be cured using a curing compound containing 30% solids following the manufacturer's specifications. Curing compound shall be compatible with floor finishes.
   d. Provide sawcut control joints or construction joints at 12'-0" (maximum) square pattern (see slab plan for other requirements). Cut 1" joints as soon as possible after finishing (within 12 hours of placement). Joint filler specification to be by the architect.
   e. Welded Wire Fabric (ASTM A185) shall be installed 1" from the top face of the slab, lapping edges 6". WWF to be supplied in sheet stock only.
   f. Specification of exterior concrete paving or sidewalks is by the Civil Engineer.
4. Reinforcing Steel:
   a. All detailing, fabrication, and placing shall be in accordance with ACI 315.
   b. Reinforcing steel shall be new billet bars conforming to ASTM A615, grade 60.
   c. Provide 3" concrete cover for all concrete cast against earth.

04300 MASONRY:

1. Masonry work and materials shall comply with ACI 530 08. All CMU shall conform to ASTM C90, ASA A79.1 for light weight block. Mortar shall conform with ASTM C270, Type S.
2. The minimum compressive strength of the system, f'm, shall be 1900 psi.
3. As a minimum, reinforce CMU with #5 at 48" o.c., at jambs and at corners. Splice #5 3'-0". Provide 9 gage joint reinforcing at 16" o.c. above grade and 8" o.c. below grade. Fill all cells containing reinforcing with 3000 psi grout. Fill all cells below grade.

06100 ROUGH CARPENTRY

1. Structural framing lumber shall conform to the minimum material properties listed in the National Design Specification for Wood Construction (2001) for the sizes, species, and grades listed below:
   a. Rafters, fascia, blocking, etc. shall be Yellow Pine #2 or better.
2. Laminated Veneer Lumber (LVL) shall meet or exceed the following properties:
   a. Modulus of Elasticity, E: 2,000,000 psi
   b. Bending Stress, Fb: 2,900 psi
   c. Horizontal Shear, Fv: 285 psi
   d. Compression Parallel, Fc: 2,750 psi.
3. Bolts shall conform to ASTM A307. Steel connection plates shall conform to ASTM A36. Bolts and plates for post connections shall be hot-dip galvanized (G90).
4. ROOF CONSTRUCTION
   a. Roof to be sheathed with 5/8" 20/40 rated sheathing, grade C-D, nailed to rafters or trusses with 10d ring shank nails at 6" o.c. at panel edges and 12" o.c. elsewhere. Provide plywood clips at each rafter or truss space. Stagger end joints of panels.
   b. Metal Plate Connected Wood Trusses
      i. Design by fabricator shall be in accordance with the applicable provisions of the latest edition of the American Forest & Paper Associations (AF&PA's) National Design Specification® (NDS®) for Wood Construction, ANSI/TPI 1, and all applicable legal requirements. Truss Manufacturer shall furnish Truss Design Drawings and a Truss Placement Plan. See the roof framing plan and design criteria for design loads. Deflection criteria of L/360 (LL) and L/240 (total) shall be calculated with pin/roller support conditions and one end moving laterally 1" max.
      ii. The design and placement drawings shall include as a minimum:
         1. Slope, span, and spacing
         2. Location of joints
         3. Required bearing widths
         4. Design loads (top and bottom chord live and dead loads, wind uplift forces at bearing)
         5. End Reactions and directions
         6. Lumber grades, sizes, and species
         7. Truss to truss girder, truss ply to ply, and field assembly connections (manufacturer to design and supply)
         8. Deflections (horizontal and vertical)
         9. Size, connections, and anchorage of the permanent continuous lateral bracing required for axial force buckling resistance.
      iii. Lumber shall be Yellow Pine #2 or better for chords and webs. Lumber shall have moisture content of no less than 7% at time of manufacturing. Adjustment factors shall be in accordance with NDS
      iv. Metal connector plates shall be manufactured by a Wood Truss Council of America ("WTCA") member plate manufacturer and shall not be less than 0.036 inches in thickness (20 gauge) and shall meet or exceed ASTM A653/A653M grade 33, and galvanized coating shall meet or exceed ASTM A924/924M, coating designation G60. Working stresses in steel are to be applied to effectiveness ratios for plates as determined by test and in accordance with ANSI/TPI 1.
      v. Trusses shall be handled during manufacturing, delivery and by the Contractor at the job site so as not to be subjected to excessive handling. Unload trusses in a manner to minimize lateral strain.
      vi. Contractor shall be responsible for the handling, installation, and temporary bracing of the Trusses in a good workmanlike manner and in accordance with the recommendations set forth in WTCA/TPI's *Building Component Safety Information BCSI 1-03: Guide to Good Practice For Handling, Installing & Bracing of Metal Plate Connected Wood Trusses*.
      vii. Cutting and altering of Trusses is not permitted. If any Truss should become broken, damaged, or altered, written concurrence and approval by a licensed design professional is required.
      viii. Trusses shall be permanently braced in a manner consistant with good building practices and in accordance with sections in the drawings. Trusses shall furthermore be anchored or restrained to prevent out-of-plane movement so as to keep all Truss members from simultaneously buckling together in the same direction. Such permanent lateral bracing shall be accomplished by: (a) anchorage to solid end walls; (b) permanent diagonal bracing in the plane of the web members; or (c) other suitable means.

Structural Design Criteria

Structural Type
Pre-fabricated Wood Roof Trusses with Reinforced CMU Walls Bearing on Reinforced Concrete Spread Footings

Building Code
2012 International Building Code

Building Use
Occupancy Category II (all importance factors 1.0)

Vertical Loads	
Roof Dead Loads	
Shingles	3 psf
Wood Trusses	4 psf
5/8" Plywood Sheathing	2 psf
HVAC allowance	4 psf
Electrical	2 psf
Suspended AT Ceiling	2 psf
Insulation	1 psf
Live Loads at Roof	
Occupancy (Reducible for Area)	20 psf
Snow Loads	
Ground Snow Load	10 psf
Lateral Loads	
Wind Loads	
Velocity (Ultimate)	115 mph
Exposure	B
Importance Factor	1.0
Enclosed Structure:	
Internal Pressure Coefficient	+/-0.18
Seismic Loads (34.9 Lat. -82.5 Long)	
2008 USGS Mapped 1 second	
Spectral Response, S_1	10.7%g
2008 USGS Mapped short term	
Spectral Response, S_s	28.2%g
Site Class (assumed)	D
Design Category	C
Analysis Type	ELF

arrowood + arrowood

Arrowood & Arrowood, PC
412-B Pettigru St.
Greenville, SC 29601
864.233.9383 (t)
864.232.7855 (f)
A&A #15-LAN-30

REVISIONS		
NO.	DATE	DESCRIPTION

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GREER, SOUTH CAROLINA 29650
PHONE: (864) 968 - 0224
FAX: (864) 968 - 9550
www.la-architects.com
LANGLEY & ASSOCIATES ARCHITECTS, LLC

NEW RESTROOM BUILDING
EAST RIVERSIDE PARK
GREENVILLE, SC

NOTES, PLAN & SECTIONS

JOB NO: 2014-65
DATE: April 26, 2016
DESC: ISSUE FOR PERMIT

S101

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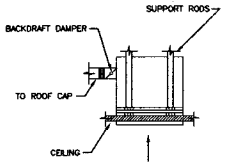
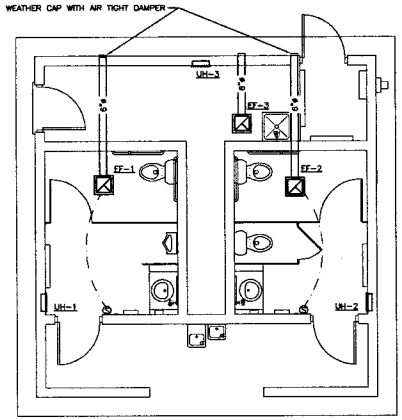
MECHANICAL NOTES

ALL MATERIALS AND EQUIPMENT SHALL BE OF NEW AND OF FIRST QUALITY. WORKMANSHIP SHALL CONFORM TO THE BEST PRACTICE FOR SUCH WORK. ALL INSTALLERS OF THE SYSTEMS SHALL BE TRAINED IN THE INSTALLATION OF THE TYPES OF SYSTEMS BEING

1. MECHANICAL CONTRACTOR SHALL INSTALL EQUIPMENT PER MANUFACTURERS' INSTRUCTIONS AND SHALL HAVE MANUFACTURERS' INSTALLATION INSTRUCTIONS ON SITE DURING FINAL INSPECTION.
2. THESE DRAWINGS ARE OF A SCHEMATIC NATURE AND THE CONTRACTOR MUST OBTAIN ANY ADDITIONAL INFORMATION REQUIRED FOR THE WORK AND INTERFACE WITH OTHER DISCIPLINES ON SITE.
3. PREPARER OF THESE DRAWINGS SHALL NOT BE RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES OF CONSTRUCTION SELECTED BY THE CONTRACTOR OR OF THE SAFETY, PRECAUTIONS AND PROGRAMS INCIDENTAL TO THE WORK OF THE CONTRACTOR.
4. SUBSTITUTIONS – ALL PRODUCTS LISTED ARE TO ESTABLISH DESIGN AND QUALITY STANDARDS, NOT TO LIMIT SUBMITTALS. CONTACT ENGINEER IN WRITING PRIOR TO BID WITH ANY QUESTIONS. ALL SUBSTITUTIONS MUST BE SUBMITTED IN WRITING WITHIN 10 DAYS AFTER BID OR SUPPLY AS SPECIFIED. HIGHLIGHT SUBSTITUTION DEVIATIONS FROM MATERIALS SPECIFIED. COST INCURRED TO MODIFY PROJECT TO INSTALL SUBSTITUTED MATERIALS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR REQUESTING THE SUBSTITUTION.
5. RIGID DUCTWORK SHALL BE GALVANIZED SHEET METAL. DUCTWORK SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE SMACNA MANUAL. ALL DIMENSIONS ARE NET INSIDE CLEAR. PROVIDE FLEX CONNECTIONS AT ALL EQUIPMENT. PROVIDE TURNING VANES IN RECTANGULAR DUCT. FLEX DUCTWORK IS ALLOWED FOR THE FINAL 14 FEET OF DUCT LEADING UP TO GRILLES, DIFFUSERS AND AIR TERMINATION DEVICES UNLESS OTHERWISE SPECIFIED ON THE MECHANICAL PLANS.
6. COMPLETED INSTALLATION SHALL BE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL CODES AND STANDARDS.
7. MECHANICAL CONTRACTOR SHALL COORDINATE EXACT LOCATION OF ALL EQUIPMENT WITH CEILING AND LIGHTING LAYOUT ON SITE BEFORE CONSTRUCTION IS TO BE STARTED. ANY INTERFERENCES IS TO BE CORRECTED BY MECHANICAL CONTRACTOR OR REPORTED TO GENERAL CONTRACTOR.
8. DUCT TRANSITIONS FOR INTERFERENCE ISSUES CAN BE MADE USING EQUIVALENT AREA.
9. MAINTAIN DUCTWORK LEVEL AND AS HIGH AS POSSIBLE UNLESS OTHERWISE NOTED. TRANSITION RECTANGULAR DUCTWORK ON THE BOTTOM AND SIDES TO KEEP DUCTWORK AS HIGH AS POSSIBLE. TAPS, TAKE-OFFS AND SPIN IN FITTINGS ARE NOT ACCEPTABLE IN THE END OF CAPPED DUCTS AND SHOULD BE PLACED NOT LESS THAN 12" FROM THE END OF THE DUCT LINE. FOR PRESSURIZATION. OPENINGS THROUGH WALLS, FLOORS AND ROOFS SHALL BE FLASHED AND SEALED WATER TIGHT AND SHALL BE PER CODE.
10. SUPPORTS FOR DUCTWORK TO COMPLY WITH IMC AND IBC CODES.
11. INSTALL DUCT BALANCING DAMPERS AT ALL BRANCH TAKE OFFS UNLESS OTHERWISE NOTED ON DRAWINGS.
12. UNLESS OTHERWISE NOTED, MECHANICAL CONTRACTOR REQUIRED TO SUPPLY STARTERS AND DISCONNECTS FOR EQUIPMENT SHOWN ON ALL MECHANICAL SCHEDULES. COORDINATE WITH ELECTRICAL CONTRACTOR TO INSTALL AND WIRE CONNECTIONS.
13. UNLESS OTHERWISE NOTED, MECHANICAL CONTRACTOR IS RESPONSIBLE FOR ALL CONDUIT AND WIRING FOR THERMOSTATS AND ANY OTHER CONTROLS REQUIRED BY THE HVAC SYSTEM.



EXHAUST FAN DETAIL
SCALE: NTS



HVAC PLAN
SCALE: 1/4"=1'-0"

ELECTRIC UNIT HEATER SCHEDULE							
EQUIPMENT NUMBER	MANUFACTURER	MODEL	BTU/HR	HEATER WATTS	ELECTRICAL (V/PH/HZ)	AMPS	WEIGHT (LBS)
UH-1	QMARK (MARLEY)	CWH1208DSF	6826	2000	208/1/60	9.6	20
UH-2	QMARK (MARLEY)	CWH1208DSF	6826	2000	208/1/60	9.6	20
UH-3	QMARK (MARLEY)	CWH1208DSF	6826	2000	208/1/60	9.6	20

NOTES

1. PROVIDE FOR SURFACE MOUNTING KIT (WALL MOUNT).
2. UNIT SHALL BE PROVIDED WITH THERMOSTAT. SET T-STAT TO 40° F.
3. FAN FORCED HEATING TO 65 CFM.

EXHAUST FAN SCHEDULE									
EQUIPMENT TAG	MANUFACTURER	MODEL	AIRFLOW (CFM)	E.S.P. (IN. WC)	FAN RPM	DRIVE	WATTS	ELECTRICAL (V/PH/HZ)	ACCESSORIES
EF-1,2	GREENHECK	SP-B150	154	0.25	1,050	DIRECT	128	115/1/60	1-4
EF-3	GREENHECK	SP-B150	50	0.25	675	DIRECT	18	115/1/60	1-4

* THE BRAND OF EQUIPMENT SHOWN ON SCHEDULE IS BASIS OF DESIGN. EQUAL PRODUCTS BY COOK, TWIN CITY, CARNES, PENN-BARRY.

* CONTRACTOR MUST VERIFY UNIT CONFIGURATION TO FIT THE LAYOUT DESIGN.

ACCESSORIES:

1. BACKDRAFT DAMPER
2. EXHAUST FAN/LIGHT COMBINATION SWITCH WITH LIGHT. PROVIDE WITH LED LIGHTING OPTION IF AVAILABLE FROM MANUFACTURER.
3. FACTORY DISCONNECT
4. ROUND DUCT CONNECTION

CES
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REV NO	DATE	DESCRIPTION

NEW RESTROOM BLDG.
EAST RIVERSIDE PARK
1155 S. BUNER ROAD · GREER, SC

HVAC PLAN

JOB NO: 2013-80
DATE: 7/31/15
DESC: FOR CONSTRUCTION

M1.1

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PLUMBING NOTES

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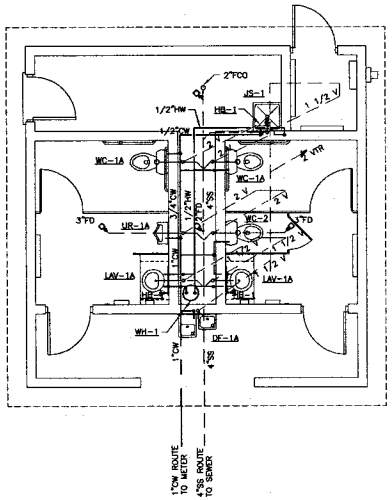
1. ALL WORK SHALL CONFORM TO THE 2012 INTERNATIONAL PLUMBING CODE, OSHA REQUIREMENTS AND ALL APPLICABLE LOCAL CODES AND ORDINANCES. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL PERMITS AND FINAL APPROVALS.
2. THE CONTRACTOR SHALL VERIFY ALL CLEARANCES, DIMENSIONS, INVERTS AND SIZES OF PIPING AND EQUIPMENT WITH THE CONTRACT DOCUMENTS AND CONDITIONS IN THE FIELD BEFORE FABRICATION OF ANY MATERIALS OR WORK TO BE PERFORMED.
3. THE CONTRACTOR SHALL INSTALL SYSTEMS AS DESIGNED AND SET FORTH BY THE CONTRACT DOCUMENTS AND THE DESIGN CONCEPT INTENDED BY THE DOCUMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DIMENSIONS WHICH SHALL BE CONFIRMED AND CORRELATED AT THE JOB SITE, FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION, COORDINATION OF HIS WORK WITH THAT OF ALL OTHER TRADES, AND THE SATISFACTORY PERFORMANCE OF THIS WORK.
4. POTABLE HOT AND COLD WATER PIPE IN THE BUILDING SHALL BE ASTM B88 HARD COPPER TUBING, TYPE L WITH WROUGHT COPPER SOLDER JOINTS. GATE VALVES TO BE CRANE NO 1700 CLASS 125 BRONZE BODY, THREADED JOINT. FOR PIPING SIZES 1" AND SMALLER, ALTERNATE USE OF CROSS-LINKED POLYETHYLENE MADE BY "PEX" OR APPROVED EQUIVALENT PER ASTM F876/877.ADSF
5. ALL HOT AND COLD DOMESTIC WATER PIPING SHALL BE INSULATED WITH 1" FLEXIBLE, UNICELLULAR PIPING INSULATION. ALL JOINTS TO BE BONDED WITH ADHESIVE.
6. ALL ABOVE GRADE AND BELOW GRADE DWV PIPING SHALL BE SCHEDULE 40 PVC.
7. ALL PIPING AND WATER HEATER SUPPORTS MUST MEET THE MANUFACTURERS' STANDARDIZATION SOCIETY SP-69. ALL THREADED ROD DIAMETERS SHALL BE ⅜" DIAMETER MINIMUM AND SUPPORTS SHALL BE SPACED IN ACCORDANCE WITH INTERNATIONAL PLUMBING CODE. NO SEISMIC SUPPORTS ARE REQUIRED IF PIPING IS LESS THAN 1.5 INCHES IN DIAMETER AND IS HUNG WITHIN 12" OF CEILING SUPPORT STRUCTURE.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DIGGING OF THE TRENCHES REQUIRED FOR THE UNDERGROUND PIPING AS INDICATED ON THE DRAWINGS WITH 4 FEET OF EXTERIOR WALL OUTSIDE THE BUILDING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER BACKFILLING OF ALL TRENCHING AND TAMPING SO THAT SLABS CAST ABOVE THE LINES SHALL BE ADEQUATELY SUPPORTED. TRENCHES SHALL BE GRADED EVENLY ACCORDING TO THE STANDARD OF BEST PRACTICE SUCH THAT PIPE IS UNIFORMLY SUPPORTED.
9. PRESSURE TESTING OF THE SUPPLY WATER AND DWV SYSTEMS SHALL BE DONE IN ACCORDANCE WITH THE IPC AND LOCAL INSPECTION REQUIREMENTS.
10. ALL POTABLE WATER SYSTEM PIPING, FITTINGS AND FIXTURES SHALL BE STERILIZED AND FLUSHED PRIOR TO USE IN ACCORDANCE WITH THE LATEST EDITION OF AMERICAN WATER WORKS ASSOCIATION STANDARDS.
11. THE CONTRACTOR IS RESPONSIBLE TO VERIFY THAT THE COLD WATER SUPPLY FROM THE WATER MAIN HAS A BACK FLOW PREVENTOR INSTALLED BEFORE CONNECTING THE SUPPLY PIPING.
12. PROVIDE DRAIN VALVES IN THE HOT AND COLD WATER SYSTEM AT ALL LOW POINTS TO ALLOW FOR COMPLETE DRAINAGE.

PLUMBING FIXTURE SCHEDULE

ITEM	DESCRIPTION	FIXTURE	WASTE	VENT	HOT SUPPLY	COLD SUPPLY
WC-1A	AMERICAN STANDARD CADET 3, 16-1/2"H, WHITE, VITREOUS CHINA, FLUSH TANK, 1.6 GPF, ELONGATED BOWL, OPEN FRONT SEAT WATER CLOSET OR EQUAL. TANK HANDLES SHALL BE ON RIGHT OR LEFT SIDE, TO MATCH THE WIDE SIDE OF THE HANDICAPPED STALL.	FLOOR MOUNTED WATER CLOSET FLUSH TANK (HANDICAP ACCESSIBLE)	4	2	-	1/2
LAV-1A	AMERICAN STANDARD AQUALYN 20-3/8" x 17-3/8" SELF RIMMING OVAL COUNTERTOP LAVATORY, VITREOUS CHINA. , FAUCET HOLES ON 4" CENTERS W/ T&S BRASS #B-2711 DECK MOUNT FAUCET WITH A.D.A. APPROVED, PREMOLDED INSULATED COVERS FOR WASTE & SUPPLIES BELOW LAVATORY.	COUNTER LAVATORY (HANDICAP ACCESSIBLE)	2	1 1/2	1/2	1/2
UR-1A	AMERICAN STANDARD TRIMBROOK, VITREOUS CHINA, 3/4" TOP SPUD (OR EQUAL) PROVIDE W/ SLOAN ROYAL 8180 BATTERY AUTO FLUSH VALVE & HEAVY DUTY WALL CARRIER. RIM MOUNTED AT 17" AFF.	WALL HUNG URINAL (HANDICAP ACCESSIBLE)	2	1 1/2	-	3/4
JS-1	FIAT FLOOR MOUNTED MSBID2424, FAUCET- 830-AA W/ VACUUM BREAKER, HOSE & HOSE BRACKET #832-AA, MOP BRACKET 889-CC, BUMPERGUARDS #1239BB & MSG2424 WALL GUARDS - STAINLESS STEEL.	MOP SINK	3	1 1/2	3/4	3/4
DF-1A	ELKAY MODEL EZSTL-8-C, TWO LEVEL, WALL MOUNTED, BARRIER-FREE ELECTRIC WATER COOLER WITH FRONT AND SIDE EASY TOUCH CONTROLS, FLEXI-GUARD SAFETY BUBBLER AND EXTRA DEEP BASIN OR EQUAL. 115V, 8 GPH, 4 OZ, 370 W	ELECTRIC WATER COOLER (9-LEVEL)	2	1 1/2	-	1/2
WH-1	10 GALLON, ELECTRIC, 208V, 2.0KW 8 GPH RECOVERY @ 90° RISE, STATE MODEL #PCE 10MSA-2. B&G MODEL EXPANSION TANK PTA-5 OR EQUAL	WATER HEATER	-	-	3/4	3/4
HB	WOODFORD #24, ANTI-SIPHON, VACUUM BREAKER PROTECTED WALL HYDRANT OR EQUAL.	HOSE BIBB	-	-	-	3/4
FCO	FLOOR CLEANOUT - ZURN MODEL ZN-1400, WITH SATIN BRONZE TOP, ADJUSTABLE CAST IRON HOUSING, PVC TAPERED PLUG AND OUTLET CONNECTION TO MATCH PIPING. PROVIDE CLAMPING FLANGE FOR FLOORS HAVING A WATERPROOF MEMBRANE. SIZE AS INDICATED ON DRAWINGS.	FLOOR CLEAN OUT	SEE PLAN	-	-	-
FD	FLOOR DRAIN - ZURN MODEL ZN-415, 8" TYPE B STRAINER, WITH CAST IRON HOUSING, ADJUSTABLE SATIN BRONZE TOP, CLAMPING COLLAR, AND OUTLET CONNECTION TO MATCH PIPING SIZE AS INDICATED ON DRAWINGS. INSTALL SURE SEAL INLINE 3" FLOOR DRAIN TRAP SEALER #SS3000.	FLOOR DRAIN	3	1 1/2	-	-
YCO	YARD CLEANOUT-ZURN MODEL Z-1456-DX WITH DECK PLUG AND O-RING SEAL.	YARD CLEANOUT	SEE PLAN	-	-	-

GENERAL PLUMBING FIXTURE NOTES: (THESE NOTES APPLY TO ALL APPLICABLE PLUMBING FIXTURES)

1. ROUGH-IN ALL WASTE AND SUPPLIES TO SPECIAL EQUIPMENT ACCORDING TO MANUFACTURER'S APPROVED SHOP DRAWINGS AND MAKE FINAL CONNECTIONS. ALL SUPPLIES SHALL HAVE SHUT-OFF VALVES.



PLUMBING PLAN
SCALE: 1/4"=1'-0"

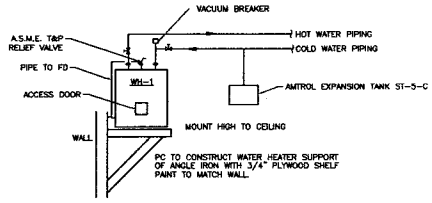
ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	NTS	NOT TO SCALE
CONT	CONTINUATION	PC	PLUMBING CONTRACTOR
CO	CLEAN OUT	SS	SANITARY SEWER
CW	COLD WATER	TYP	TYPICAL
DN	DOWN	U/G	UNDERGROUND
FD	FLOOR DRAIN	V	VENT
FCO	FLOOR CLEAN OUT	VTR	VENT THRU ROOF
FS	FLOOR SINK		
GC	GENERAL CONTRACTOR	W	WASTE
GPH	GALLONS PER HOUR	W/	WITH
GPM	GALLONS PER MINUTE	WCO	WALL CLEAN OUT
HB	HOSE BIBB	WH	WATER HEATER
HD	HUB DRAIN	WHD	WALL HYDRANT
HW	HOT WATER	YCO	YARD CLEANOUT

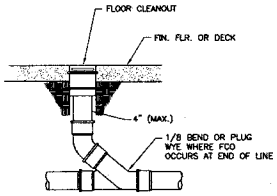
NOT ALL ABBREVIATIONS ARE USED

PLUMBING LEGEND & SYMBOLS

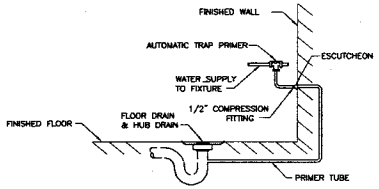
- HOT WATER (DOMESTIC)
- SANITARY WASTE PIPING
- SANITARY VENT PIPING
- COLD WATER (DOMESTIC)
- WALL HYDRANT OR HOSE BIBB
- VALVE
- FLOOR DRAIN, CLEANOUT
- PIPE RISING UP
- PIPE DROPPING DOWN



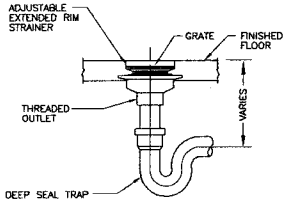
WATER HEATER DETAIL
SCALE: NTS



FLOOR CLEANOUT DETAIL
SCALE: NTS



TRAP PRIMER DETAIL
SCALE: NTS



FLOOR DRAIN DETAIL
SCALE: NTS

CES
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REV.	DATE	DESCRIPTION

NEW RESTROOM BLDG.
EAST RIVERSIDE PARK
1155 S. BUSBEE ROAD - GREER, SC

PLUMBING PLAN

JOB NO: 2013-10
DATE: 3/31/14
DESC: FOR CONSTRUCTION

P1.1

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SYMBOL	DESCRIPTION
(home run symbol, A-1,3)	HOME RUN TO LIGHTING/SERVICE PANEL. HASH MARKS, WHEN SHOWN, INDICATE NUMBERS OF CONDUCTORS. "/" INDICATES HOT WIRE, "/\" INDICATES NEUTRAL CONDUCTOR, "ρ" INDICATES GROUND CONDUCTOR. HOME RUN NOTE INDICATES PANEL NAME AND CIRCUIT NAME OR FEEDER TAG. CONDUCTORS SHALL BE #12 AWG IN 3/4" CONDUIT UNLESS NOTED OTHERWISE. ANY HOME RUN OR CONDUIT WITHOUT HASH MARKS IS TO CONTAIN 3 CONDUCTORS; 1 HOT, 1 NEUTRAL, AND 1 EQUIPMENT GROUND. EACH HOT CIRCUIT SHALL BE PAIRED WITH A SEPARATE NEUTRAL CONDUCTOR. SHARING OF NEUTRAL CONDUCTORS BETWEEN CIRCUITS IS NOT ALLOWED.
	EXPOSED CONDUIT
	CONDUIT RUN IN SLAB OR UNDERGROUND.
	CONDUIT RUN CONCEALED ABOVE CEILING OR IN WALLS, UNLESS NOTED OTHERWISE.
	LIGHTING OR SERVICE PANEL, SURFACE MOUNTED.(208V)
	LIGHTING OR SERVICE PANEL, SURFACE MOUNTED.(480V)
EF	EXHAUST FAN. SEE MECHANICAL DRAWINGS FOR FAN SPECIFICATIONS.
WH	WATER HEATER.
30/20/3P/3R	SAFETY DISCONNECT SWITCH. "30" INDICATES AMP RATING, "20" INDICATES FUSE SIZES. "3P" INDICATES NUMBER OF POLES. ENCLOSURE TO BE NEMA 1 UNLESS NOTED OTHERWISE (3R, 4X, ETC.) SQUARE D H300 SERIES HEAVY DUTY SAFETY SWITCH
PE	PHOTOELECTRIC CELL, SPEC GRADE, TO BE MOUNTED ON ROOF, FACING NORTH. TORK MODEL 2101 OR EQUAL.

WIRING DEVICES

NOTE: ALL WIRING DEVICES TO BE IVORY, WITH #302 STAINLESS STEEL COVERPLATE (FLUSH MOUNTED) UNLESS NOTED OTHERWISE ON THE DRAWING OR SPECIFICATIONS.

SWITCH SYMBOLS

SYMBOL	DESCRIPTION
SM	MANUAL MOTOR STARTER
S	SINGLE POLE LIGHTING SWITCH 120-277 VOLT, 20 AMP, SPEC GRADE. LETTER ("a") DESIGNATES WHICH FIXTURES ARE CONTROLLED FROM WHICH SWITCHES WHEN MULTIPLE SWITCHES ARE USED ON ONE CIRCUIT
ST	TIMER SWITCH WITH DIGITAL TIMER, WATTSTOPPER # TS-400
(sensor)	OMNI-DIRECTIONAL DUAL TECHNOLOGY CEILING OCCUPANCY SENSOR - WATTSTOPPER # DT-300

STRAIGHT BLADE DEVICE SYMBOLS

SYMBOL	DESCRIPTION
(duplex)	20A, 125V, 2P, 3W, NEMA 5-20R, DUPLEX RECEPTACLE. HUBBELL 5362-I OR EQUAL. STANDARD POWER. "WP" DENOTES WEATHERPROOF COVER PLATE. "GFI" DENOTES GFCI TYPE
(duplex)	SAME AS "(duplex)" ABOVE EXCEPT BOTTOM OF OUTLET MOUNTED ABOVE COUNTER HEIGHT
D	HAND DRYER CONNECTION

LIGHTING SYMBOLS:

SYMBOL	DESCRIPTION
	2' X 4' CEILING MOUNTED FIXTURE
	SWITCHED FIXTURE WITH EMERGENCY LIGHTED BATTERY BACKUP. ROUTE 'HOT' SENSING CIRCUIT TO BATTERY
	4' STRIP FIXTURE
	EXTERIOR WALL PACK
O	SURFACE CEILING MOUNTED OR RECESSED DOWNLIGHT

GENERAL LIGHTING NOTES:

1. MANUFACTURERS & NUMBERS ARE LISTED TO ESTABLISH QUALITY ONLY AND NOT TO LIMIT COMPETITION. PRIOR TO BIDDING, SUBSTITUTIONS ARE ALLOWED SUBJECT TO SUBMITTAL DATA, PHOTOMETRICS & ENGINEERS APPROVAL AS REQUIRED BY SPECIFICATIONS.
2. ALL FIXTURES TO BE U.L. LABELED. ALL EXTERIOR FIXTURES SHALL HAVE U.L. WET LABEL OR DAMP LABEL AS REQUIRED BY LOCATION. CONTRACTOR SHALL VERIFY BEFORE SUBMITTING FIXTURE.
3. PROVIDE ALL MOUNTING ACCESSORIES, BAR HANGARS & HARDWARE REQUIRED.
4. EMERGENCY BATTERY BALLAST SHALL PROVIDE A MINIMUM OF 1100 LUMEN OUTPUT. BALLAST SHALL CONTAIN INTEGRAL SENSING CIRCUIT TO ALLOW FIXTURE TO BE SWITCHED WITH AREA FIXTURES FOR NORMAL OPERATION AND ENERGIZE BATTERY POWERED LAMP UPON LOSS OF POWER CIRCUIT, REGARDLESS OF SWITCH POSITION. MANUFACTURER SHALL BE BODINE OR APPROVED EQUAL.

LIGHTING FIXTURE SCHEDULE

FIXTURE TYPE	FIXTURE DESCRIPTION	ACCEPTABLE MANUFACTURERS	MOUNTING HEIGHT	LAMPS	FIXTURE WATTAGE	VOLTAGE
LA	4', LED CHANNEL STRIP LIGHT, STEEL HOUSING, FROSTED ACRYLIC LENS, WHITE FINISH, PAF, 0-10V DIMMING DRIVER	LITHONIA # ZL1D-L48-5000LM-FST-MVOLT-35K-80CRI-WH LSI # SDL-4-LED-HO-WW-UE COLUMBIA # LCL4-35-ML-EDU-PAF	-	NOMINAL 5000 LUMEN LED PANEL 3500K	48	UNIVERSAL VOLTAGE
LAE	SAME AS 'LA' ABOVE EXCEPT PROVIDED WITH EMERGENCY BATTERY BACKUP.	LITHONIA # ZL1D-L48-5000LM-FST-MVOLT-35K-80CRI-E7W-WH LSI # SDL-4-LED-HO-WW-UE-EM COLUMBIA # LCL4-35-ML-EDU-PAF-ELL14	-	NOMINAL 5000 LUMEN LED PANEL 3500K	48	UNIVERSAL VOLTAGE
RL	6" DIA. RECESSED 2000 LUMEN LED CAN LIGHT, SELF-FLANGED WITH CLEAR SEMI-SPECULAR FINISH AND 0-10V DIMMING DRIVER. SPEC GRADE.	GOTHAM # EVO-35/20-6AR-MWD-LSS-MVOLT-EZ1 CREE # KR6-20L-35K-VOLT-10V-EB7/KR6T-SSCC-FF/KR6TA PRESCOLITE # LF6LEDG4-6LFLED7G4-35K	RECESSED	NOMINAL 2000 LUMEN LED PANEL 3500K	30	UNIVERSAL VOLTAGE
RLE	SAME AS 'RL' ABOVE EXCEPT PROVIDED WITH EMERGENCY BATTERY BACKUP.	GOTHAM # EVO-35/20-6AR-MWD-LSS-MVOLT-EZ1-EL CREE # KR6-20L-35K-VOLT-10V-EB7/KR6T-SSCC-FF/KR6TA PRESCOLITE # LF6LEDG4-EM-6LFLED7G4-35K-EM	RECESSED	NOMINAL 2000 LUMEN LED PANEL 3500K	30	UNIVERSAL VOLTAGE
VL	SURFACE MOUNTED VANDAL RESISTANT LED 4' WRAP AROUND, PAF.	COOPER # HVL8-4-LD4-2-LO-35-UNV-C-EDD-PAF LUMINAIRE LED # VPFB-46-50W-3500K-120-277-CP-PNA WILLIAMS # AYX-4-LEDPH40/835-DRV-UNV	SURFACE	NOMINAL 4000 LUMEN LED PANEL 3500K	80	UNIVERSAL VOLTAGE OR MULTI-TAP
VLE	SAME AS 'VL' ABOVE EXCEPT WITH EMERGENCY BATTERY BACKUP	COOPER # HVL8-4-LD4-2-LO-35-UNV-C-EDD-PAF-EL10W LUMINAIRE LED # VPFB-46-50W-3500K-120-277-CP-PNA-EMB310 WILLIAMS # AYX-4-LEDPH40/835-DRV-EM/BSL310-UNV	SURFACE	NOMINAL 4000 LUMEN LED PANEL 3500K	80	UNIVERSAL VOLTAGE OR MULTI-TAP
WRE	WALL MOUNTED MINI-SCONCE, CUTOFF, MEDIUM THROW, DIE CAST ALUMINUM HOUSING AND DOOR FRAME, 1/8" TEMPERED GLASS GASKETED LENS, SPECULAR EXTRUDED POLISHED ANODIZED SEALED REFLECTOR, WET LOCATION WITH REMOTE MOUNTED 90 MINUTE BACKUP EMERGENCY BALLAST COMPLETE WITH REQUIRED INTERCONNECTING WIRING, TEST SWITCH MOUNTING TRAY AND INDICATOR LIGHT. (BATTERY UNIT TO BE MOUNTED IN CONDITIONED SPACE), COLOR TO MATCH BUILDING FINISH COLOR. TEN DEGREES F OPERATION.	LITHONIA # WST-2/26DTT-MD-MVOLT-PSDL1-2LP-ELARTS3-ELAPSDMT LUMARK # PLP-T-52-MT-EM40 WILLIAMS - APPROVED EQUAL		2-26W DTT COMPACT FLUORESCENT	32	UNIVERSAL VOLTAGE OR MULTI-TAP

ELECTRICAL GENERAL NOTES:

1. INSPECT SITE PRIOR TO SUBMITTING BID. DRAWINGS ARE INTENDED TO COVER THE REQUIRED ELECTRICAL SYSTEMS. DRAWINGS MAY NOT SHOW COMPLETE OR ACCURATE DETAILS OF THE BUILDING OR SYSTEM IN EVERY RESPECT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ANY ADDITIONAL INFORMATION AS REQUIRED.
2. CONFORM TO THE NATIONAL ELECTRICAL CODE (2011), IBC (2012), IECC (2009), APPLICABLE NEMA, ANSI AND IEEE PUBLICATIONS, U.L. AND ADA STANDARDS AND OSHA REQUIREMENTS. COMPLY WITH LOCAL, COUNTY, STATE AND NATIONAL CODES HAVING JURISDICTION.
3. FURNISH AND INSTALL ALL MATERIALS IN A NEAT AND WORKMANLIKE FASHION. ALL MATERIALS SHALL BE NEW, WITH FIRST QUALITY AND UL LABEL.
4. VERIFY ALL DIMENSIONS AND CLEARANCES PRIOR TO INSTALLATION OF EQUIPMENT AND RACEWAYS. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF WORK WITH THAT OF ALL OTHER TRADES AS REQUIRED.
5. CONDUIT SHALL BE EMT FOR BRANCH CIRCUIT WIRING AS ALLOWED BY NEC, EXCEPT THAT SET SCREW OR CRIMP FITTINGS ARE NOT ALLOWED. WHERE EXPOSED TO PHYSICAL DAMAGE CONDUITS SHALL BE RIGID GALVANIZED STEEL. MINIMUM CONDUIT SIZE SHALL BE 3/4". ALL CONDUCTORS SHALL BE TYPE THHN/THWN, STRANDED 600V COPPER BUILDING WIRE. MINIMUM SIZE SHALL BE #12 AWG COPPER UNLESS NOTED. UNDERGROUND CONDUITS SHALL BE PVC SCHEDULE 40 WITH TRANSITION TO RIGID GALVANIZED STEEL FOR EXPOSED CONDUITS.
6. PROVIDE GROUNDING FOR ALL EQUIPMENT IN ACCORDANCE WITH ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE. GROUND SERVICE TO BUILDING STEEL, DRIVEN GROUND ROD AND COLD WATER PIPE.
7. ALL ENCLOSURES SHALL BE OF THE NEMA TYPE WHICH IS SUITABLE FOR THE APPLICATION.
8. SEAL ALL CONDUIT PENETRATIONS TO MATCH RATING OF WALL BEING PENETRATED.
9. ALL WORK SHALL HAVE PROPER LABELING AND NAMEPLATES. ALL CIRCUITS SHALL BE LABELED AT PANELS AND BOXES AS INDICATED. ALL PANELS AND DISCONNECTS ARE TO BE PERMANENTLY MARKED WITH NAME OR EQUIPMENT SERVED. ALL PANELS ARE TO BE PROVIDED WITH TYPEWRITTEN PANEL SCHEDULES.
10. ALL BREAKERS ON CIRCUITS SUPPLYING HVAC EQUIPMENT SHALL BE TYPE HACR BREAKERS.
11. COORDINATE WITH ELECTRICAL UTILITY AS REQUIRED FOR SERVICE ENTRY. INSTALL METER AND CONDUITS PER UTILITY REQUIREMENTS AND PAY ALL REQUIRED FEES OR CHARGES FOR SERVICES SHOWN.
12. THOROUGHLY CLEAN ALL EQUIPMENT AND SYSTEMS BEFORE PLACING IN OPERATION. RESTORE FINISHED SURFACES IF DAMAGED AND DELIVER THE ENTIRE INSTALLATION IN AN APPROVED CONDITION. INSTRUCT THE OWNERS' PERSONNEL IN THE PROPER OPERATION AND MAINTENANCE OF THE SYSTEMS. FURNISH TO THE OWNER THREE SETS OF OPERATION AND MAINTENANCE MANUALS FOR EACH SYSTEM.
13. GUARANTEE THE WORK INSTALLED FOR A PERIOD OF ONE YEAR AFTER DATE OF FINAL ACCEPTANCE. DEFECTS WHICH APPEAR AS A RESULT OF NORMAL USAGE SHALL BE REMEDIED BY THE CONTRACTOR TO THE COMPLETE SATISFACTION OF THE OWNER WITHOUT COST TO THE OWNER.
14. CONTRACTOR SHALL KEEP CURRENT A SET OF PLANS FOR THE DURATION OF CONSTRUCTION WITH ALL CHANGES TO WORK NEATLY AND ACCURATELY MARKED IN RED AND SHALL TURN OVER TO OWNER AT COMPLETION OF PROJECT.
15. ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED TO MEET SEISMIC REQUIREMENTS OF 2012 IBC.
16. ALL PANELBOARDS SHALL BE FURNISHED WITH COPPER BUS BARS AND A COPPER GROUNDING BUS BAR.

ABBREVIATIONS:

AFF	ABOVE FINISHED FLOOR	RECPT	RECEPTACLE (R.)
AFG	ABOVE FINISHED GRADE	REQD	REQUIRED
ACH	ABOVE COUNTER HEIGHT	RGS	RIGID GALVANIZED STEEL
BKR	BREAKER	SW	SWITCH
CU	COPPER	TYP	TYPICAL
CKT	CIRCUIT	UNO	UNLESS NOTED OTHERWISE
DWG	DRAWING	UGND	UNDERGROUND
EC	ELECTRICAL CONTRACTOR	W/	WITH
EMT	ELECTRICAL METALLIC TUBING	WH	WATER HEATER
EWC	ELECTRIC WATER COOLER	WP	WEATHER PROOF
FU	FUSE	XFMR	TRANSFORMER
FWE	FURNISHED WITH EQUIPMENT		
GFI	GROUND FAULT INTERRUPTER DEVICE		
IMC	INTERMEDIATE METAL CONDUIT		
LTG	LIGHTING (L)		
MLO	MAIN LUGS ONLY		
MCB	MAIN CIRCUIT BREAKER		
MFR	MANUFACTURER		
MDP	MAIN DISTRIBUTION PANEL		
NTS	NOT TO SCALE		
PH	PHASE		
PNL	PANEL		
PVC	POLYVINYL CHLORIDE CONDUIT		

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BEI JOB NO. 15100C1

HVAC SCHEDULE

TAG	ELECTRICAL CHAR. AMPS	KW	HP	V/P	PANEL	WIRE/COND.	DISCONNECT
EF-1	1.3	-	-	120/1P	SEE PLAN	1#12, 1#12G, 3/4"C	SM
EF-2	1.3	-	-	120/1P	SEE PLAN	1#12, 1#12G, 3/4"C	SM
UH-1	9.6	-	-	240/1P	P	2#12, 1#12G, 3/4"C	SM (HUBBELL #HBL78320)
UH-2	9.6	-	-	240/1P	P	2#12, 1#12G, 3/4"C	SM (HUBBELL #HBL78320)
UH-3	9.6	-	-	240/1P	P	2#12, 1#12G, 3/4"C	SM (HUBBELL #HBL78320)
WH-1	21.6	-	-	240/1P	P	2#10, 1#10G, 3/4"C	30/NF/2P

CABLE/CONDUIT SCHEDULE

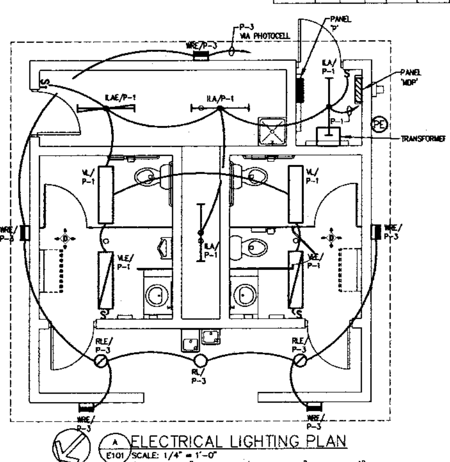
TAG	WIRE AND CONDUIT
70	2 #4, 1 #8G, 1"C
N150	3 #1/0, 1 #6G, 1 1/2"C

PANEL: MDP — VOLTAGE: 480Y/277V, 3Ø, 4W — CABINET: SURFACE MOUNTED — FEEDER: BOTTOM — TYPE: SQUARE D NF — MAINS: 100A MCB, SE RATED

AMPS TRIP	POLES	NOTES	DESIGNATION	No.	ØA	ØB	ØC	No.	DESIGNATION	NOTES	POLES	AMPS TRIP
20	1		L-PARKING LOT	1	750 / 6154			2	PANEL 'P' VIA TRANSFORMER		2	70
20	1		SPARE	3		7374		4				
20	1		SPARE	5				6	SPACE			
			SPACE	7				8	SPACE			
			SPACE	9				10	SPACE			
			SPACE	11				12	SPACE			
			SPACE	13				14	SPACE			
			SPACE	15				16	SPACE			
			SPACE	17				18	SPACE			
INTEGRATED EQUIPMENT RATING: 14KAIC			KVA TOTAL		8.9	7.4	9.0		PANELBOARD KVA LOAD TOTAL:			18.3

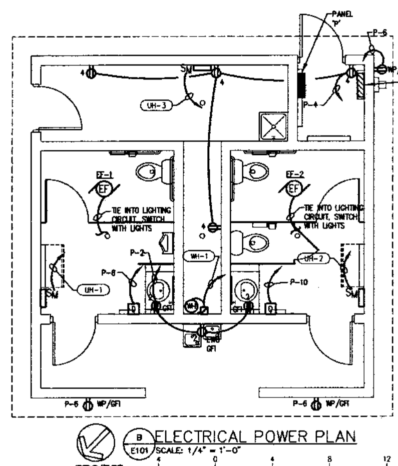
PANEL: P — VOLTAGE: 120/240V, 1Ø, 3W — CABINET: SURFACE MOUNTED — FEEDER: BOTTOM — TYPE: SQ D NQ — MAINS: 150A MCB

AMPS TRIP	POLES	NOTES	DESIGNATION	No.	ØA	ØB	No.	DESIGNATION	NOTES	POLES	AMPS TRIP
20	1		L-MENS, WOMENS, STG/JAN	1	704 / 960		2	R-MENS, WOMENS, EWC		1	20
20	1		L-EXTERIOR	3		404 / 720	4	R-STORAGE/JANITOR		1	20
20	1		SPARE	5	540		6	R-EXTERIOR BUILDING		1	20
20	1		SPARE	7		1000	8	HAND DRYER MENS		1	20
20	1		SPARE	9	1000		10	HAND DRYER WOMENS		1	20
20	1		SPARE	11			12	SPARE		1	20
20	1		SPARE	13			14	SPARE		1	20
20	1		SPARE	15			16	SPARE		1	20
20	1		SPARE	17			18	SPARE		1	20
20	1		SPARE	19			20	SPARE		1	20
20	1		SPARE	21			22	SPARE		1	20
20	1		SPARE	23			24	SPACE			
20	1		SPARE	25			26	SPACE			
15	2		UH-1	27		1000	28	SPACE			
				29	1000		30	SPACE			
15	2		UH-2	31		1000	32	SPACE			
				33	1000		34	SPACE			
15	2		UH-3	35		1000	36	SPACE			
				37	1000		38	SPACE			
30	2		WH-1	39		2250	40	SPACE			
				41	2250		42	SPACE			
INTEGRATED EQUIPMENT RATING: 10KAIC			KVA TOTAL		5.2	7.4		PANELBOARD KVA LOAD TOTAL:			12.5



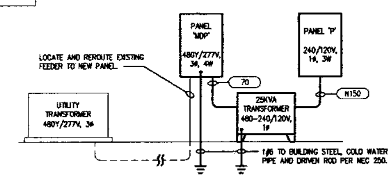
A ELECTRICAL LIGHTING PLAN
E101 SCALE: 1/4" = 1'-0"

PROJECT NORTH

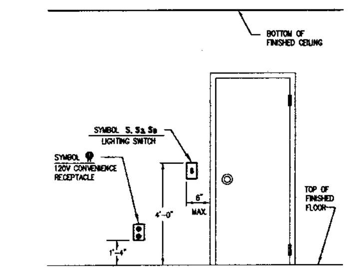


B ELECTRICAL POWER PLAN
E101 SCALE: 1/4" = 1'-0"

PROJECT NORTH



D ELECTRICAL RISER DIAGRAM
E101 NOT TO SCALE



NOTES:
1. DEVICE BOXES MOUNTED IN THE SAME WALL BUT IN SEPARATE ROOMS OR SPACES SHALL NOT BE MOUNTED IN THE SAME WALL CAVITY.

TYPICAL DEVICE MOUNTING HEIGHT — C

REVISIONS		
NO.	DATE	DESCRIPTION

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NEW RESTROOM BLDG
EAST RIVERSIDE PARK
1155 S. SUBER ROAD - GREER, SC

LEGEND, SCHEDULES & PLANS

JOB NO: 2015-13E
DATE: 04-15-2016
DESC.:

E101

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PROJECT MANUAL

NEW RESTROOM BUILDING FOR EAST RIVERSIDE PARK 1155 S. SUBER ROAD GREER, SC 29650

L&A PROJECT NO: 2015-13E
APRIL 15, 2016

PREPARED BY:

Langley & Associates Architects, LLC
109 South Main Street
Greer, SC 29650
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074113.16	STANDING-SEAM METAL ROOFING	8
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SECTION 000115 – DRAWINGS INDEX

GENERAL
A0.0 CODE REVIEW & COVER SHEET
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CIVIL
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ARCHITECTURAL
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A5.0 EXTERIOR ELEVATIONS & SECTIONS

STRUCTURAL
S-101 NOTES, PLANS & SECTIONS

MECHANICAL
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PLUMBING
P1.1 PLUMBING PLANS

ELECTRICAL
E101 ELECTRICAL LEGEND, SCHEDULE & PLANS

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SECTION 002113 - INSTRUCTIONS TO BIDDERS

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. "Instructions to Bidders" AIA Document A701, 1997 Edition by reference.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 002113

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SECTION 002213 - SUPPLEMENT TO "INSTRUCTIONS TO BIDDERS"

Supplement to AIA Document A701, May 1997 Edition

This document shall be and is hereby modified, by addition to the deletion from existing paragraphs, and by insertion of additional paragraphs as indicated. Wherever the word "ARCHITECT" appears, substitute therefore: "ARCHITECT/ENGINEER". Specific modifications follow:

ARTICLE 1 - DEFINITIONS

1.1 Add the following to the end of the existing section:

The Contractor's Proposal and all Bidding Requirements shall also be included as a part of the Contract Documents.

ARTICLE 2 - BIDDER'S REPRESENTATIONS

2.1.5 Add the following section:

"Failure or omission of bidder to receive or examine any form, instrument, addendum or other document, or to visit site and acquaint himself with conditions there existing shall in no wise relieve bidder from obligation with respect to bid or contract. Submission of bid shall be taken as prima facie evidence of compliance with this section."

ARTICLE 3 - BIDDING DOCUMENTS

3.1 COPIES

3.1.1 Delete *deposit sum, if any, stated therein* from the first sentence of this section and substitute the following:

cost of printing the bid documents.

3.1.1 Delete the second and following sentences of this section without substitution.

3.1.2 Add the following to the end of the existing section:

"The General Contractor shall be responsible for distribution of documents for sub-bidders. Complete plans are available for examination in the office of the Architect, in General Contractor's offices, and in plan rooms. Partial sets of documents will not be issued."

3.3 SUBSTITUTIONS

3.3.5 Add the following to the end of the existing section:

"No oral requests or approvals will be considered as a part of the Contract."

3.4 ADDENDA

3.4.3 Change "four days" to *forty-eight hours.*

ARTICLE 4 - BIDDING PROCEDURES

4.4 MODIFICATION OR WITHDRAWAL OF BID

4.4.5 Add the following section:

"Bids may be withdrawn ONLY on written or faxed request dispatched by bidder in time for delivery in normal course of business prior to time fixed for opening; provided, that faxed withdrawal is confirmed in writing over signature of bidder within 48 hours thereafter. Negligence on part of bidder in preparing bid confers no rights for withdrawal of bid after it has been opened. No bid may be withdrawn after the date and hour set for the opening."

ARTICLE 9 - SPECIAL REQUIREMENTS (Additional Article)

9.1 In order for the bid to be considered as responsive, the Contractor shall list their subcontractors on the Bid Form. All unit costs, acknowledgement of addenda and alternate prices must also be listed as provided on the bid form.

END OF SECTION 002213

SECTION 003120 – CLIMATOLOGICAL RECORDS

The following are climatological records of precipitation collected by the National Climatic Data Center at the GSP Airport location in Greer, SC. This information is not a warranty or guarantee of rainfall but merely information the Contractor may wish to utilize as information only. Precipitation records for the months beginning January, 2008 thru December, 2013 are included.

The average (rounded down to the nearest integer in the Contractor's favor) of this data for the number of days with precipitation greater than 0.10 inch is as follows:

Month	Precipitation > 0.10 Inch (Days)
January	6
February	6
March	7
April	7
May	6
June	5
July	9
August	6
September	4
October	5
November	5
December	7

END OF SECTION 003120

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SECTION 004313 – BID BOND

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. "Bid Bond" AIA Document A310, 2010 Edition by reference.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 004313

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SECTION 005200 - CONTRACT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. "Standard form of Agreement Between Owner and Contractor Where the Basis of Payment Is a Stipulated Sum" AIA Document A101, 2007 Edition by reference.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 005200

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SECTION 006276 – APPLICATION FOR PAYMENT

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. "Application and Certificate for Payment" AIA Document G702, 1992 Edition by reference."
2. "Continuation Sheet" AIA Document G703, 1992 Edition by reference.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 006276

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SECTION 007200 - GENERAL CONDITIONS

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. "General Conditions of the Contract for Construction" AIA Document A201, 2007 Edition by reference.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 007200

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SECTION 007300 – SUPPLEMENT TO "GENERAL CONDITIONS"

GENERAL

0.1 Supplement to the General Conditions of the Contract for Construction, AIA® Document A201™–2007:

0.2 The following supplements modify, delete and/or add to the General Conditions of the Contract for Construction, AIA® Document A201™–2007. Where any articles, paragraph or subparagraph in the General Conditions is supplemented by one of the following paragraphs, the provision of such article, paragraph, or subparagraph shall remain in effect and the supplemental provisions shall be considered as added thereto. Where any article, paragraph or subparagraph in the General Conditions is amended, voided, or superseded by any of the following paragraphs, the unaltered portions of the General Conditions shall remain in effect.

0.3 General:

A. Wherever the word "Architect" appears in the General Conditions, substitute therefore: "Architect/Engineer".

ARTICLE 1 - GENERAL PROVISIONS

1.1 BASIC DEFINITIONS

1.1.1 THE CONTRACT DOCUMENTS

A. Revise the last sentence of the paragraph to read as follows:

The Contract Documents shall also include other documents such as bidding requirements (advertisement or invitation to bid, Instructions to Bidders, sample forms, the contractor's bid or portions of addenda relating to bidding requirements.)

1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

A. Add Section 1.2.1.1 & 1.2.1.2 to Section 1.2.1:

1.2.1.1 In the event of conflicts or discrepancies among the Contract Documents, interpretations will be based on the following priorities:

.1 Modifications.
.2 The Agreement.
.3 Addenda, with those of later date having precedence over those of earlier date.
.4 The Supplementary Conditions.
.5 The General Conditions of the Contract for Construction.
.6 Division 1 of the Specifications.
.7 Drawings and Divisions 2-16 of the Specifications.

.8 Other documents specifically enumerated in the Agreement as part of the Contract Documents

1.2.1.2 In the case of conflicts or discrepancies between Drawings and Divisions 2-16 of the Specifications or within either Document not clarified by Addendum, the Architect will determine which takes precedence in accordance with Section 4.2.11,4.2.12, and 4.2.13.

ARTICLE 2 - OWNER

2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

A. Add Section 2.2.6 to Section 2.2:

2.2.6 The Owner will procure and bear costs of structural tests and special inspections as required by the applicable building code.

ARTICLE 3 - CONTRACTOR

3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

A. Add the following Sub-Sections to Section 3.2:

3.2.5 The following principles shall govern the settlement of disputes which may arise over discrepancies in the contract documents: (a) as between figures given on drawings and the scaled measurements, the figures shall govern - no measurements should be taken by scale as working dimensions except on large-scale drawings not dimensioned in detail; (b) as between large-scale drawings and small-scale drawings, the larger scale shall govern; (c) as between drawings and specifications, requirements of the specifications shall govern; and (d) as between the Form of Agreement and the Specifications, requirements of the form of Agreement shall govern. The principles set forth herein shall not alter provisions of Article I, Paragraph 1.2."

3.2.6 "Requests for written approval to substitute materials or equipment considered by the Contractor as equal to those specified must have been submitted for approval ten (10) calendar days prior to bid opening date to the Architect/Engineer. Requests must have been accompanied by samples, descriptive literature, and engineering information as necessary to fully identify and allow appraisal of the product, as well as the product for which it is being substituted. Requests must have been made in writing."

3.2.7 The Owner shall be entitled to deduct from the Contract Sum amounts paid to the Architect for the Architect to evaluate and respond to the Contractor's requests for information, where such information was available to the Contractor from a careful study and comparison of the Contract Documents, field conditions, other Owner-provided information, Contractor-prepared coordination drawings, or prior Project correspondence or documentation.

3.4 LABOR AND MATERIALS

A. Add the following Section 3.4.2.1:

3.4.2.1 After the Contract has been executed, the Owner and Architect will consider a formal request for the substitution of products in place of those specified only under the conditions set forth in the General Requirements (Division 1 of the Specifications). By making requests for substitutions, the Contractor:

.1 represents that the Contractor has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to that specified;

.2 represents that the Contractor will provide the same warranty for the substitution that the Contractor would for that specified;

.3 certifies that the cost data presented is complete and includes all related costs under this Contract except the Architect's redesign costs, and waives all claims for additional costs related to the substitution which subsequently become apparent; and

.4 will coordinate the installation of the accepted substitute, making such changes as may be required for the Work to be complete in all respects.

B. Add the following Section to Section 3.4:

3.4.4 The Owner shall be entitled to deduct from the Contract Sum amounts paid to the Architect to evaluate the Contractor's proposed substitutions and to make agreed-upon changes in the Drawings and Specifications made necessary by the Owner's acceptance of such substitutions.

3.9 SUPERINTENDENT

A. Add the following Sections 3.9.4 and 3.9.5 to Section 3.9:

3.9.4 The Contractor shall employ a superintendent or an assistant to the superintendent who will perform as a coordinator for mechanical and electrical Work. The coordinator shall be knowledgeable in mechanical and electrical systems and capable of reading, interpreting and coordinating Drawings, Specifications, and shop drawings pertaining to such systems. The coordinator shall assist the Subcontractors in arranging space conditions to eliminate interference between the mechanical and electrical systems and other Work and shall supervise the preparation of coordination drawings documenting the spatial arrangements for such systems within restricted spaces. The coordinator shall assist in planning and expediting the proper sequence of delivery of mechanical and electrical equipment to the site.

3.9.5 Contractor shall employ and maintain continuously on this project a competent person acceptable to Architect/Engineer for furnishing lines, grades and elevations during entire period of need for their establishment and maintenance. Contractor as shall assume sole responsibility for correctness of work to dimension, lines, grades and elevations.

3.10 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Add the following Sections 3.10.4 Section 3.10:

3.10.4 Progress Schedule - Contractor shall also indicate by line graph estimated aggregate percentage of completed work (in-place value, not counting value of materials stored in site) at last day of each calendar month. State also in figures estimated percentages of progress to be obtained incrementally and in aggregate to last day of each month. Contractor shall indicate by additional line graph thereon, using different line symbol, aggregate percentage of contract value (in-place value plus value of materials stored on site) at last day of each calendar month. State also in figures total values to be obtained incrementally and in aggregate to last day of each month. Submit Progress Schedule at Preconstruction Conference. Resubmit Progress Schedule monthly with Request for Payment, each amended to show actual periods of work on various stages of construction, actual curve for completed value and actual curve for total value.

3.12 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

A. Add the following Sections 3.12.11 and 3.12.12 to Section 3.12:

3.12.11 The Architect's review of Contractor's submittals will be limited to examination of an initial submittal and one (1) resubmittal. The Architect's review of additional submittals will be made only with the consent of the Owner after notification by the Architect. The Owner shall be entitled to deduct from the Contract Sum amounts paid to the Architect for evaluation of such additional resubmittals.

3.12.12 If the Contractor's submittals have not been adequately reviewed by the contractor for compliance with the Contract Documents for coordination with other trades, dimensions, quantities, or fabrication; the Architect may return the submittal to the Contractor or proceed with their review. If the Architect anticipates an extended review; he will notify the contractor prior to proceeding. The time for the review will be extended and the Architect will be entitled to additional compensation. The Owner shall be entitled to deduct from the Contract Sum amounts paid to the Architect for evaluation of inadequately reviewed submittals.

3.12.13 At completion of construction, furnish Owner with two (2) unused copies of all shop drawings, manufacturer's diagrams, literature, etc., for his permanent files.

ARTICLE 4 - ARCHITECT

4.1 GENERAL

A. Add the following Sub-Section 4.1.2.1 to Section 4.1.2:

4.1.2.1 In the Specifications or on the Drawings, where the words "as directed", "as required", "as approved", "as permitted" or words of like effect are used, Contractor shall understand that direction, requirement, approval or permission of Architect/Engineer is

intended. Similar words "approved", "acceptable", "satisfactory", or words of like import mean approved by, acceptable to or satisfactory to Architect/Engineer.

4.2 ADMINISTRATION OF THE CONTRACT

A. Add the following Section 4.2.2.1 to Section 4.2.2:

4.2.2.1 The Contractor shall reimburse the Owner for compensation paid to the Architect for additional site visits made necessary by the fault, neglect or request of the Contractor.

ARTICLE 5 - SUBCONTRACTORS

5.2 AWARD OF SUBCONTRACTS AND CONTRACTS FOR PORTIONS OF THE WORK

5.2.1 Change the first sentence to read as follows:

5.2.1 Not later than fifteen (15) days after the date of commencement of the Work, the Contractor shall furnish in writing to the Owner through the Architect the names of persons or entities (including those who are to furnish material or equipment fabricated to a special design) proposed for each principal portion of the Work.

ARTICLE 7 - CHANGES IN THE WORK

7.1 General

A. Add the following Section 7.1.4 through 7.1.6 to Section 7.1:

7.1.4 The contractor must seek owner authorization for additional work prior to performing the work if the contractor requires a change in contract time or the contract amount. If the contractor proceeds with additional work without first submitting a change order request, that work will be considered part of the scope of work covered by the contract amount and the contractor will not be authorized to submit a change order request at a later date.

7.1.5 It is the responsibility of the contractor to submit change order requests in a format that is sufficient for the Architect's review. Change order requests must include, at a minimum, a breakdown of materials with unit costs, breakdown of labor with hourly rates, breakdown of applicable taxes, and itemized markups for the contractor and subcontractor if applicable. The failure of the contractor to provide sufficient information for evaluation of a change order request will be returned by the architect for resubmittal. The 21 day time period for submitting change order claims will not be extended for insufficient claim submittals. It is the responsibility of the contractor to submit a change order request in the proper format within the 21 day window provided in the "General Conditions".

7.1.6 The architect will respond to a change order request in fifteen (15) calendar days with approval, rejection, or a request to the contractor for clarification. If a request is approved, the architect will prepare a change order and send it to the owner for their review and approval. Final change order approval comes from the owner.

7.1.7 The contractor proceeds at his own risk if he performs additional work associated with a change order request that is pending review and approval by the owner.

7.1.8 In determining the cost or credit to the Owner resulting from a change in the work, the allowances for overhead and profit combined, shall not exceed the percentages herein scheduled, as follows:

.1 For the Contractor, for Work performed by the Contractor's own forces, five percent (5%) of the cost.

.2 For the Contractor, for Work performed by the Contractor's Subcontractors, five percent (5%) of the amount due the Subcontractors.

.3 For each Subcontractor involved, for Work performed by that Subcontractor's own forces, five percent (5%) of the cost.

.4 For each Subcontractor involved, for Work performed by the Subcontractor's Sub-subcontractors, five percent (5%) of the amount due the Sub-subcontractor.

.5 Cost to which overhead and profit is to be applied shall be determined in accordance with Section 7.3.7.

.6 In order to facilitate checking of quotations for extras or credits, all proposals, except those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of costs including labor, materials and Subcontracts. Labor and materials shall be itemized in the manner prescribed above. Where major cost items are Subcontracts, they shall be itemized also. In no case will a change involving over $500.00 be approved without such itemization.

ARTICLE 9 - PAYMENTS AND COMPLETION

9.3 APPLICATIONS FOR PAYMENT

9.3.1 Add the following sentence to 9.3.1

The form of Application for Payment, duly notarized, shall be a current authorized edition of AIA Document G702™–1992, Application and Certificate for Payment, supported by a current authorized edition of AIA Document G703™–1992, Continuation Sheet.

A. Add the following Sub-Sections to Section 9.3.1:

9.3.1.4 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Owner, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided in the Contract Documents for the period ending the last day of the month as follows:

Not later than thirty (30) days following the Owner's receipt of the Application for Payment ninety percent (90%) of the portion of the Contract Sum properly allocable to labor, materials, and equipment incorporated in the Work and ninety percent (90%) of the portion of the Contract Sum properly allocable to materials and equipment suitably stored at the site or at some other location agreed upon in writ-

ing, for the period covered by the Application for Payment, less the aggregate of previous payments made by the Owner.

Passage to owner of Title for all work, materials, and equipment, etc. shall not relieve Contractor of his obligations and liabilities faithfully to protect such properties from damage or loss with due diligence, provision of adequate security and/or insurance against theft and to deliver all such work, materials, and equipment as per-condition for acceptance of his contract.

9.3.1.5 Until Substantial Completion, the Owner shall pay ninety percent of the amount due the Contractor on account of progress payments.

9.8 SUBSTANTIAL COMPLETION

A. Add the following Sub-Sections to Section 9.8.3:

9.8.3.1 "The Work will not be considered for Substantial Completion review until all project systems are operational as designed, all governmental inspections and certificates have been made and posted, instruction of Owner's personnel in the operation of systems has been completed, and all final finishes are in place. In general, the only remaining work shall be minor in nature, such that the Owner could occupy the building on the following day and the completion of the work by the Contractor would not materially interfere or hamper the Owner's normal operations. Also for Substantial Completion acceptance, the Contractor shall certify that all remaining work will be completed; within sixty consecutive calendar days following the date of Substantial Completion. Incomplete work will be covered by retainage of funds at 3 times its value, as estimated by the Architect."

9.8.3.2 "Exceptions to the above conditions for acceptance of portions of the project, or other conditions of whatever kind, may be instituted by the Owner, subject to concurrence of the Contractor. The Owner may not unreasonably withhold acceptance of the total project."

9.8.3.3 In the event that it becomes necessary for the Owner to occupy the premises before completion of the project, a "Certificate of Substantial Completion" may be issued in accordance with AIA Form G-704.

9.8.3.4 Except with the consent of the Owner, the Architect will perform no more than three (3) inspections to determine whether the Work or a designated portion thereof has attained Substantial Completion in accordance with the Contract Documents. The Owner shall be entitled to deduct from the Contract Sum amounts paid to the Architect for any additional inspections.

B. 9.8.5 Delete the second sentence and substitute the following:

Upon such acceptance and consent of surety, if any, the Owner shall make payment sufficient to increase the total payments to ninety-five percent (95%) of the Contract Sum, less such amounts as the Architect shall determine for incomplete Work, not in accordance with the requirements of the Contract Documents, or unsettled claims.

9.10 FINAL COMPLETION AND FINAL PAYMENT

A. Add the following Sections to Section 9.10.1:

9.10.1.1 Except with the consent of the Owner, the Architect will perform no more than two (2) inspections to determine whether the Work or a designated portion thereof has attained Final Completion in accordance with the Contract Documents. The Owner shall be entitled to deduct from the Contract Sum amounts paid to the Architect for any additional inspections.

9.10.1.2 When the Contractor is ready for final inspection; he shall give notice to the Architect in the following words:

> *The work on the contract for (show name of improvement or project as it appears in the Form of Agreement), having been fully completed, except as stipulated herein below, it is requested that a final inspection be made promptly by the Owner. The following work is incomplete through no fault or negligence of the Contractor. (List any work the Contractor regards as exceptionable and after each item substantiate why its incompleteness is not due to his fault or negligence.)*
>
> *No final inspection shall be made until such time as Architect has received a letter in exact form indicated above."*

B. Add the following Section to Section 9.10.2:

9.10.2.1 Contractor shall submit to Owner Contractor's Affidavit of Payment of Debts and Claims on AIA Document G706, latest edition, together with all supporting documents as called for thereon, including (as applicable):

Contractor's Release or Waiver of Liens, conditional upon receipt of final payment. Submit in letter form under Contractor's letterhead.

Separate Releases or Waivers of Liens from all Subcontractors and Materials and Equipment Suppliers. Accompany with a list thereof.

Contractor's Affidavit of Release of Liens on AIA Document G706A, latest edition."

C. Add the following Section to Section 9.10.3:

9.10.3.1 The balance payable under conditions stated shall reflect retainage for three times the value of uncompleted work, as determined by the Owner, but not more than 5% of the Contract amount."

9.11.2 The Contractor and the Contractor's surety, if any, shall be liable for and shall pay the Owner the sums hereinafter stipulated as liquidated damages for each calendar day of delay after the date established for Substantial Completion in the Contract Documents until the Work is substantially complete: two hundred fifty dollars ($250.00)

ARTICLE 10 - PROTECTION OF PERSONS AND PROPERTY

10.2 SAFETY OF PERSONS AND PROPERTY

A. Add the following Section 10.2.4.1 to Section 10.2.4:

10.2.4.1 When use or storage of explosives, or other hazardous materials, substances or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall give the Owner reasonable advance notice.

ARTICLE 11 - INSURANCE AND BONDS

11.1 CONTRACTOR'S LIABILITY INSURANCE

A. 11.1.1.1 Delete the semicolon at the end of Section 11.1.1.1 and add:

, including private entities performing Work at the site and exempt from the coverage on account of number of employees or occupation, which entities shall maintain voluntary compensation coverage at the same limits specified for mandatory coverage for the duration of the Project;

B. 11.1.1.2 Delete the semicolon at the end of Section 11.1.1.2 and add:

or persons or entities excluded by statute from the requirements of Section 11.1.1.1 but required by the Contract Documents to provide the insurance required by that section;

C. Add the following Sections 11.1.2.1 through 11.1.2.4 to Section 11.1.2:

11.1.2.1 The limits for Worker's Compensation and Employers' Liability insurance shall meet statutory limits mandated by State and Federal Laws. If (1) limits in excess of those required by statute are to be provided or (2) the employer is not statutorily bound to obtain such insurance coverage or (3) additional coverages are required, additional coverages and limits for such insurance shall be as follows:

500,000.00 each accident
500,000.00 Disease, Policy limit
500,000.00 Disease, Each employee

11.1.2.2 The limits for Commercial General Liability insurance including coverage for Premises-Operations, Independent Contractors' Protective, Products-Completed Operations, Contractual Liability, Personal Injury and Broad Form Property Damage (including coverage for Explosion, Collapse and Underground hazards) shall be as follows:

1,000,000.00 Each Occurrence
2,000,000.00 General Aggregate
1,000,000.00 Personal and Advertising Injury
2,000,000.00 Products-Completed Operations Aggregate

.1 The policy shall be endorsed to have the General Aggregate apply to this Project only.

.2 The Contractual Liability insurance shall include coverage sufficient to meet the obligations in AIA® Document A201™–2007 under Section 3.18.

.3 Products and Completed Operations insurance shall be maintained for a minimum period of at least two (2) year(s) after either 90 days following Substantial Completion or final payment, whichever is earlier. Contractor shall continue to provide evidence of such coverage to Owner on an annual basis during the aforementioned period.

11.1.2.3 Automobile Liability insurance (owned, non-owned and hired vehicles) for bodily injury and property damage:

1,000,000.00 Each Person or minimum for umbrella
1,000,000.00 Each Accident or minimum for umbrella
1,000,000.00 Each Occurrence or minimum for umbrella

11.1.2.4 Umbrella or Excess Liability coverage: $4,000 over primary insurance with no more than $25 retention.

D. 11.1.3 Add the following sentence to Section 11.1.3:

If this insurance is written on a Commercial General Liability policy form, the certificates shall be ACORD form 25-S, completed and supplemented in accordance with AIA® Document G715™–1991, Instruction Sheet and Supplemental Attachment for ACORD Certificate of Insurance 25-S.

E. Delete Section 11.3.1.4 and substitute the following:

11.3.1.4 The Contractor shall at the Contractor's own expense provide insurance coverage for materials stored off the site after written approval of the Owner at the value established in the approval, and also for portions of the Work in transit until such materials are permanently attached to the Work.

F. Add the following Section 11.3.1.6 to Section 11.3.1:

11.3.1.6 The insurance required by Section 11.3 is not intended to cover machinery, tools or equipment owned or rented by the Contractor that are utilized in the performance of the Work but not incorporated into the permanent improvements. The Contractor shall, at the Contractor's own expense, provide insurance coverage for owned or rented machinery, tools or equipment, which shall be subject to the provisions of Section 11.3.7.

11.4 PERFORMANCE BOND AND PAYMENT BOND

A. Delete Section 11.4.1 and substitute the following:

11.4.1 The Contractor shall furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder. Bonds may be obtained through the Contractor's usual source and the cost thereof shall be included in the Contract Sum. The amount of each bond shall be equal to 125% percent of the Contract Sum.

11.4.1.1 The Contractor shall deliver the required bonds to the Owner not later than three days following the date the Agreement is entered into, or if the Work is to be commenced prior thereto in response to a letter of intent, the Contractor shall, prior to the commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished.

11.4.1.2 The Contractor shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of the power of attorney

ARTICLE 12 - UNCOVERING AND CORRECTION OF WORK

12.2 CORRECTION OF WORK

A. Add the following Section 12.2.2.4 to Section 12.2.2:

12.2.2.4 Upon request by the Owner and prior to the expiration of one year from the date of Substantial Completion, the Architect will conduct and the Contractor shall attend a meeting with the Owner to review the facility operations and performance.

ARTICLE 15 – CLAIMS AND DISPUTES

15.1.5 CLAIMS FOR ADDITIONAL COST

A. Add the following to Section 15.1.4

If the contractor proceeds with additional work without first submitting a request for additional compensation, that work will be considered part of the scope of work covered by the contract amount and the contractor will not be authorized to submit a change order request at a later date.

15.1.5 CLAIMS FOR ADDITIONAL TIME

A. Add the following to Section 15.1.5.1

If the contractor proceeds with additional work without first submitting a request for additional time, that work will be considered part of the scope of work covered by the contract amount and the contractor will not be authorized to submit a change order request at a later date.

B. Add the following to Section 15.1.5.2

15.1.5.2.1 Extensions of the Contract Time due to excusable delays for adverse weather conditions shall be as determined herein. Contractor should expect to encounter a normal number of days of precipitation each month. The normal number of days is defined as the ten year average of the monthly number of days with greater than .10 inch of precipitation as reported by the U.S. Weather Bureau. This data is provided herewith for the convenience of the parties. If the actual number of days per month with greater than .10 inch of precipitation exceeds 100% of the norm, the excess will be allowable as excusable delay provided that the total shall not exceed twenty percent (20%) of the initial Contract Time.

Records of Climatological observation data are available in Climatological Records, Section 003120 of the Contract Documents for contractor use in preparation of his Bids.

15.1.5.2 Normal weather conditions for the project area are taken into consideration in the time for completion of the contract; therefore, no extension of time will be extended for normal weather conditions, with the exception of hurricanes and tornadoes. Normal rainfall shall be as determined by the average from the local weather service office or section 003120 Climatological Records of the Specifications.

C. Add the following Sections 15.1.5.3 and 15.1.5.4 to Section 15.1.5:

15.1.5.3 Claims for increase in the Contract Time shall set forth in detail the circumstances that form the basis for the Claim, the date upon which each cause of delay began to affect the progress of the Work, the date upon which each cause of delay ceased to affect the progress of the Work and the number of days' increase in the Contract Time claimed as a consequence of each such cause of delay. The Contractor shall provide such supporting documentation as the Owner may require including, where appropriate, a revised construction schedule indicating all the activities affected by the circumstances forming the basis of the Claim.

15.1.5.4 The Contractor shall not be entitled to a separate increase in the Contract Time for each one of the number of causes of delay which may have concurrent or interrelated effects on the progress of the Work, or for concurrent delays due to the fault of the Contractor.

END OF SECTION 007300

SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

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

B. Related Requirements:

1. Section 015000 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

1.2 PROJECT INFORMATION

A. Project Identification: New Concessions Restrooms & Building for East Riverside Park
(Langley & Associates Project #2015-13E)

1. Project Location: 1155 South Suber Road, Greer, SC 29650

B. Owner: Greenville County

1. Owner's Representative: Don Shuman, Greenville County Recreation
Phone: 864-288-6470 E-Mail: DShuman@greenvillecounty.org

C. Architect: Langley & Associates Architects, LLC - David E. Langley, AIA, Project Architect
109 South Main Street, Greer, SC 29650 Phone: 864-968-0224

1.3 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of Project is defined by the Contract Documents and consists of the following:

1. Work will include all items shown on drawings and written in the specifications unless otherwise noted. The major items of work are:

a. All work necessary for a completed structure, including but not limited to:

1) Concrete slab and footings
2) Concrete masonry block

3) Wood truss roof
4) Snap-Seam Metal Roofing
5) Plywood ceiling
6) HVAC, plumbing & electrical systems
7) All plumbing fixtures, toilet partitions and toilet accessories
8) Doors & Frames
9) Painting
10) All site lighting, panels and controller for site lighting
11) All grading and storm water systems
12) All plaza paving and surfacing

2. Site lighting and grading shall be included in the Contractor's scope of work.

B. Type of Contract.

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

1.4 ACCESS TO SITE

A. General: Contractor shall have full use of Project site for construction operations, as indicated on the Drawings by the Contract limits, and by the requirements of this Section, during construction period. Contractor's use of Project site is limited only by Owner's right to perform work or to retain other contractors on portions of Project.

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

1.5 WORK RESTRICTIONS

A. Work Restrictions, General: Comply with restrictions on construction operations.

1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.

B. Nonsmoking Building: Smoking is not permitted within the building or within 25 feet of entrances, operable windows, or outdoor-air intakes.

C. Controlled Substances: Use of tobacco products and other controlled substances on the Project site is not permitted.

1.6 SPECIFICATION AND DRAWING CONVENTIONS

A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.

B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:

1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
2. Abbreviations: Materials and products are identified by abbreviations scheduled on Drawings.
3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

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SECTION 012300 - ALTERNATES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for alternates.

1.2 DEFINITIONS

A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be added to or deducted from the base bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.3 PROCEDURES

A. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.

1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.

B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated revisions to alternates.

C. Execute accepted alternates under the same conditions as other work of the Contract.

D. Schedule: A schedule of alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

A. Alternate: No Alternates.

END OF SECTION 012300

SECTION 012500 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for substitutions.

B. Related Requirements:

1. Section 016000 "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.

1.2 DEFINITIONS

A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

1. Substitutions for Cause: Changes proposed by the Contractor or Owner that are required due to changed project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.

2. Substitutions for Convenience: Changes proposed by the Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.

1.3 ACTION 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.

2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
b. Coordination information, including a list of changes or revisions 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. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size,

durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.

d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
e. Samples, where applicable or requested.
f. Certificates and qualification data, where applicable or requested.
g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
i. Research reports evidencing compliance with building code in effect for Project, from ICC-ES.
j. 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 date of receipt of purchase order, lack of availability, or delays in delivery.
k. Cost information, including a proposal of change, if any, in the Contract Sum.
l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
m. 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 Action: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.

   a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
   b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.4 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.5 PROCEDURES

Coordination: Modify or adjust affected work as necessary to integrate work of the approved substitutions.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.

1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied:

a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
b. Requested substitution will not adversely affect Contractor's construction schedule.
c. Requested substitution has received necessary approvals of authorities having jurisdiction.
d. Requested substitution is compatible with other portions of the Work.
e. Requested substitution has been coordinated with other portions of the Work.
f. Requested substitution provides specified warranty.
g. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
h. Substitution request is fully documented and properly submitted.

2. If the above conditions are not satisfied, Architect will return requests without action, except to record non-compliance with the requirements.

B. Substitutions for Convenience: Architect will consider requests for substitution if received within 60 days after the Notice to Proceed. Requests received after that time may be considered or rejected at discretion of the Architect.

1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied:

a. 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 for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
b. Requested substitution does not require extensive revisions to the Contract Documents.
c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
d. Requested substitution will not adversely affect Contractor's construction schedule.
e. Requested substitution has received necessary approvals of authorities having jurisdiction.
f. Requested substitution is compatible with other portions of the Work.

g. Requested substitution has been coordinated with other portions of the Work.
h. Requested substitution provides specified warranty.
i. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
j. Substitution request is fully documented and properly submitted.

2. If the above conditions are not satisfied, Architect will return requests without action, except to record non-compliance with the requirements.

PART 3 - EXECUTION (Not Used)

END OF SECTION 012500

SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for handling and processing Contract modifications.

1.2 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 Document G710, "Architect's Supplemental Instructions."

1.3 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. Work Change Proposal Requests issued by Architect are not instructions either to stop work in progress or to execute the proposed change.
2. Within time specified in Proposal Request or 15 days, when not otherwise specified, 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 and supervision 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. Quotation Form: Use forms acceptable to Architect.

B. Contractor-Initiated Work Change Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Architect within 21 calendar days of the Contractor's knowledge of such conditions. Requests after 21 calendar days of the discovery of such conditions will be rejected.

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.
2. 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.

3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Include costs of labor and supervision directly attributable to the change.
5. 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.
6. Comply with requirements in Section 012500 "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.
7. Work Change Proposal Request Form: Use form acceptable to Architect.

1.4 ADMINISTRATIVE CHANGE ORDERS

A. Allowance Adjustment: See Section 012100 "Allowances" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect actual costs of allowances.

B. Unit-Price Adjustment: See Section 012200 "Unit Prices" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect measured scope of unit-price work.

1.5 CHANGE ORDER PROCEDURES

A. On Owner's approval of a Work Changes Proposal Request, Architect will issue a Change Order for signatures of Owner and Contractor on AIA Document G701.

1.6 CONSTRUCTION CHANGE DIRECTIVE

A. Construction Change Directive: Architect may issue a Construction Change Directive on AIA Document G714. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.

1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.

B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.

1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012600

SECTION 012900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.

B. Related Requirements:

1. Section 012100 "Allowances" for procedural requirements governing the handling and processing of allowances.

2. Section 012200 "Unit Prices" for administrative requirements governing the use of unit prices.

3. Section 012600 "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.

4. Section 013200 "Construction Progress Documentation" for administrative requirements governing the preparation and submittal of the Contractor's construction schedule.

5. Section 013300 "Submittal Procedures" for administrative requirements governing the preparation and submittal of the submittal schedule.

1.2 SCHEDULE OF VALUES

A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.

1. Coordinate line items in the schedule of values with other required administrative forms and schedules, including the following:

a. Application for Payment forms with continuation sheets.
b. Submittal schedule.
c. Items required to be indicated as separate activities in 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. Sub-schedules for Phased Work: Where the Work is separated into phases requiring separately phased payments, provide sub-schedules showing values coordinated with each phase of payment.

B. Format and Content: Use 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. Arrange schedule of values in column-form, consistent with format of AIA Document G703, indicating the following for each item listed:

   a. Related specification section or division.
   b. Description of the Work
   c. Name of subcontractor
   d. Name of manufacturer or fabricator
   e. Name of supplier
   f. Change Orders (numbers) that affect value
   g. Dollar value of the following, as a percentage of Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent:

3. 1) Labor

4. 2) Materials

5. 3) Equipment

6. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with Project Manual table of contents. Provide multiple line items for principal subcontract amounts in excess of five percent of the Contract Sum.

   a. Differentiate between items stored on-site and items stored off-site. If required, include evidence of insurance.

7. Round amounts to nearest whole dollar; total shall equal the Contract Sum.

8. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.

   a. Include separate line items under Contractor and principal subcontracts for Project closeout requirements in an amount totaling five percent of the Contract Sum and subcontract amount.

9. 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.

10. 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.

11. Purchase Contracts: Provide a separate line item in the schedule of values for each purchase contract. Show line-item value of purchase contract. Indicate Owner payments or deposits, if any, and balance to be paid by Contractor.

12. 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.

13. 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: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.

C. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 as form for Applications for Payment.

D. Application Preparation: Complete every entry on form. Notarize and execute 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 for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at the time of Application for Payment.

    3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.

    4. Include separate amounts for work being carried out under Owner-requested project acceleration.

E. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.

1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment, for stored materials.

2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.

3. Provide summary documentation for stored materials indicating the following:

   a. Materials previously stored and included in previous Applications for Payment.
   b. Work completed for this Application utilizing previously stored materials.
   c. Additional materials stored with this Application.
   d. Total materials remaining stored, including materials with this Application.

F. Transmittal: Submit three signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt. One copy shall include waivers of lien and similar attachments if required.

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 entities 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 conditional final or full waivers.

3. Owner reserves the right to designate which entities involved in the Work must submit waivers.

4. Waiver Forms: Submit executed waivers of lien on forms 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. List of subcontractors.
2. Schedule of values.
3. Contractor's construction schedule (preliminary, if not final).
4. Products list (preliminary, if not final).
5. Schedule of unit prices.
6. Submittal schedule (preliminary, if not final).
7. List of Contractor's staff assignments.
8. List of Contractor's principal consultants.

9. Copies of building permits.
10. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
11. Initial progress report.
12. Report of preconstruction conference.
13. Certificates of insurance and insurance policies.
14. Performance and payment bonds.
15. Data needed to acquire Owner's insurance.

I. Application for Payment at Substantial Completion: After Architect issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.

1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

J. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:

1. Evidence of completion of Project closeout requirements.
2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
3. Updated final statement, accounting for final changes to the Contract Sum.
4. AIA Document G706-1994, "Contractor's Affidavit of Payment of Debts and Claims."
5. AIA Document G706A-1994, "Contractor's Affidavit of Release of Liens."
6. AIA Document G707-1994, "Consent of Surety to Final Payment."
7. Evidence that claims have been settled.
8. 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.
9. Final liquidated damages settlement statement.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

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SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:

1. General project coordination procedures
2. Administrative and supervisory personnel
3. Coordination drawings.
4. Requests for Information (RFIs).
5. Project meetings.

B. Related Requirements:

1. Section 013200 "Construction Progress Documentation" for preparing and submitting Contractor's construction schedule.
2. Section 017300 "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
3. Section 017700 "Closeout Procedures" for coordinating closeout of the contract.

1.2 DEFINITIONS

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

1.3 INFORMATIONAL SUBMITTALS

A. 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. Include the following information in tabular form:

1. Name, address, and telephone number of entity performing subcontract or supplying products.
2. Number and title of related Specification Section(s) covered by subcontract.
3. Drawing number and detail references, as appropriate, covered by subcontract.

1.4 GENERAL COORDINATION PROCEDURES

A. Coordination: 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, that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of Contractor's construction schedule.
2. Preparation of the schedule of values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Pre-installation conferences.
7. Project closeout activities.

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

1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. Refer to other sections for disposition of salvaged materials that are designated as Owner's property.

1.5 COORDINATION DRAWINGS

A. Coordination Drawings, General: Prepare coordination drawings according to requirements in individual Sections, where installation is not completely shown on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.

1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:

a. Use applicable 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. Coordinate the addition of trade-specific information to the coordination drawings by multiple contractors in a sequence that best provides for coordination of the information and resolution of conflicts between installed components before submitting for review.

c. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.

d. Indicate space requirements for routine maintenance and for anticipated replacement of components during the life of the installation.

e. Show location and size of access doors required for access to concealed dampers, valves, and other controls.

f. Indicated required installation sequences.

g. Indicate dimensions shown on the Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Architect indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.

B. Coordination Drawing Organization: Organize coordination drawings as follows:

1. Floor Plans and Reflected Ceiling Plans: Show architectural and structural elements, and mechanical, plumbing, fire-protection, fire-alarm, and electrical Work. Show locations of visible ceiling-mounted devices relative to acoustical ceiling grid.

2. Mechanical Rooms: Provide coordination drawings for mechanical rooms showing plans and elevations of mechanical, plumbing, fire-protection, fire-alarm, and electrical equipment.

3. Structural Penetrations: Indicate penetrations and openings required for all disciplines.

4. Slab Edge and Embedded Items: Indicate slab edge locations and sizes and locations of embedded items for metal fabrications, sleeves, anchor bolts, bearing plates, angles, door floor closers, slab depressions for floor finishes, curbs and housekeeping pads, and similar items.

5. Mechanical and Plumbing Work: Show the following:

a. Sizes and bottom elevations of ductwork, piping, and conduit runs, including insulation, bracing, flanges and support systems.

b. Dimensions of major components such as dampers, valves, diffusers, access doors, cleanouts and electrical distribution equipment.

6. Electrical Work: Show the following:

a. Runs of vertical and horizontal conduit 1-1/4 inch 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.

7. Review: Architect 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 the Architect determines that the coordination drawings are not being prepared in sufficient scope or detail, or are otherwise deficient, the Architect will so inform the Contractor, who shall make changes as directed and resubmit.

8. Coordination drawing prints: Prepare coordination drawing prints in accordance with requirements of Section 013300 "Submittal Procedures".

1.6 KEY PERSONNEL

A. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Keep list current at all times.

1. Identify individuals and their duties and responsibilities.

2. List addresses and telephone numbers, including home, office, and cellular telephone numbers and e-mail addresses.

3. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.

4. Post copies of list in project meeting room, in temporary field office, and by each temporary telephone.

1.7 REQUESTS FOR INFORMATION (RFIs)

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

1. Architect will return RFIs submitted to Architect by other entities controlled by Contractor with no response.

2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.

B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:

1. Project name.

2. Project number.

3. Date.

4. Name of Contractor.

5. Name of Architect.

6. RFI number, numbered sequentially.

7. RFI subject.

8. Specification Section number and title and related paragraphs, as appropriate.

9. Drawing number and detail references, as appropriate.

10. Field dimensions and conditions, as appropriate.

11. Contractor's suggested resolution. If Contractor's solution(s) impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.

12. Contractor's signature.

13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.

14. a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.

C. RFI Forms: AIA Document G716, or Software-generated form with substantially the same content as indicated above, acceptable to Architect.

D. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow seven working days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.

1. The following 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 inaccurately prepared RFIs.

2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt of additional information.

3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Section 012600 "Contract Modification Procedures."

   a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within 10 days of receipt of the RFI response.

E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly. Use CSI Log Form 13.2B, or Software log with not less than the following:

1. Project name.

2. Name and address of Contractor.

3. Name and address of Architect.

4. RFI number including RFIs that were dropped and not submitted.

5. RFI description.

6. Date the RFI was submitted.

7. Date Architect's response was received.

8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.

9. Identification of related Field Order, Work Change Directive, and Proposal for Request as appropriate.

F. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within seven days if Contractor disagrees with response.

1.8 PROJECT MEETINGS

A. General: Schedule and conduct meetings and conferences at Project site unless otherwise indicated.

1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.

2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.

3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within three days of the meeting.

B. Preconstruction Conference: Schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 15 days after execution of the Agreement.

1. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.

2. Agenda: Discuss items of significance that could affect progress, including the following:

a. Tentative construction schedule.
b. Phasing.
c. Critical work sequencing and long-lead items.
d. Designation of key personnel and their duties.
e. Lines of communication.
f. Procedures for processing field decisions and Change Orders.
g. Procedures for RFIs.
h. Procedures for testing and inspecting.
i. Procedures for processing Applications for Payment.
j. Distribution of the Contract Documents.
k. Submittal procedures.
l. Sustainable design requirements.
m. Preparation of record documents.
n. Use of the premises.
o. Work restrictions.
p. Working hours.
q. Owner's occupancy requirements.
r. Responsibility for temporary facilities and controls.

s. Procedures for moisture and mold control.
t. Procedures for disruptions and shutdowns.
u. Construction waste management and recycling.
v. Parking availability.
w. Office, work, and storage areas.
x. Equipment deliveries and priorities.
y. First aid.
z. Security.
aa. Progress cleaning.

3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.

C. Pre-installation Conferences: Conduct a pre-installation conference at Project site before each construction activity that requires coordination with other construction.

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. Advise Architect of scheduled meeting dates.

2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:

a. Contract Documents.
b. Options.
c. Related RFIs.
d. Related Change Orders.
e. Purchases.
f. Deliveries.
g. Submittals.
h. Sustainable design requirements.
i. Review of mockups.
j. Possible conflicts.
k. Compatibility problems.
l. Time schedules.
m. Weather limitations.
n. Manufacturer's written instructions.
o. Warranty requirements.
p. Compatibility of materials.
q. Acceptability of substrates.
r. Temporary facilities and controls.
s. Space and access limitations.
t. Regulations of authorities having jurisdiction.
u. Testing and inspecting requirements.
v. Installation procedures.
w. Coordination with other work.
x. Required performance results.
y. Protection of adjacent work.
z. Protection of construction and personnel.

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 other parties requiring information.

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 regular intervals.

1. Coordinate dates of meeting with preparation of payment requests.

2. Attendees: In addition to representatives of Owner and Architect, 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 meeting shall be familiar with Project and authorized to conclude matters relating to the Work.

3. 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, including the following:
      1) Interface requirements.
      2) Sequence of operations.
      3) Status of submittals.
      4) Status of sustainable design documentation.
      5) Deliveries.
      6) Off-site fabrication.
      7) Access.
      8) Site utilization.
      9) Temporary facilities and controls.
      10) Progress cleaning.
      11) Quality and work standards.
      12) Status of correction of deficient items.
      13) Field observations.
      14) Status of RFIs.
      15) Status of proposal requests.
      16) Pending changes.
      17) Status of Change Orders.
      18) Pending claims and disputes.
      19) Documentation of information for payment requests.

3. 4. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.

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 concurrently with the report of each meeting.

E. Coordination Meetings: Conduct coordination meetings at bi-weekly intervals. Project coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and pre-installation conferences.

1. Attendees: In addition to representatives of Owner and Architect, 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 meeting shall be familiar with Project and authorized to conclude matters relating to the Work.

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

a. Combined Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each contract is on time, ahead of schedule, or behind schedule, in relation to combined 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.

b. Schedule Updating: Revise combined Contractor's construction schedule after each coordination meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting.

c. Review present and future needs of each contractor present, including the following:

1) Interface requirements
2) Sequence of Operations
3) Status of Submittals
4) Deliveries
5) Off-site fabrication
6) Access
7) Site utilization
8) Temporary facilities and controls
9) Work hours
10) Hazard and risks
11) Progress cleaning
12) Quality and work standards

3. Reporting: Record meeting results and distribute copies to anyone in attendance and to others affected by decisions or actions resulting from each meeting.

F. Project Closeout Conference: Schedule and conduct a Project closeout conference, at a time convenient to Owner and Architect, but no later than 60 days prior to the scheduled date of Substantial Completion.

1. Conduct the conference to review requirements and responsibilities related to Project closeout.

2. Attendees: Authorized representatives of the Owner and Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at meeting shall be familiar with Project and authorized to conclude matters relating to the Work.

3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:

   a. Preparation of record documents.
   b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
   c. Submittal of written warranties.
   d. Requirements for preparing operations and maintenance data.
   e. Requirements for demonstrating and training.
   f. Preparation of Contractor's punch list.
   g. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
   h. Submittal procedures.
   i. Owner's partial occupancy requirements.
   j. Installation of Owner's furniture, fixtures and equipment.

4. Minutes: Entity conducting meeting will record and distribute meeting minutes.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

SECTION 013200 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:

1. Contractor's construction schedule.
2. Construction schedule updating reports.
3. Daily construction reports.
4. Site condition reports.

B. Related Requirements:

1. Section 011200 "Multiple Contract Summary" for preparing a combined Contractor's construction schedule.

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 Activity: An activity on the critical path that 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.

1.3 INFORMATIONAL SUBMITTALS

A. Format for Submittals: Submit required submittals in the following format:

1. Working electronic copy of schedule file, where indicated.
2. PDF electronic file.

B. Startup Network Diagram: Of size required to display entire network for entire construction period. Show logic ties for activities.

C. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.

1. Submit a working electronic copy of schedule, using software indicated, 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 each of the following reports. Format for each activity in reports shall contain activity number, activity description, 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.
4. Earnings Report: Compilation of Contractor's total earnings from commencement of the Work until most recent Application for Payment.

E. Construction Schedule Updating Reports: Submit with Applications for Payment.

F. Daily Construction Reports: Submit at monthly intervals.

G. Site Condition Reports: Submit at time of discovery of differing conditions.

1.4 COORDINATION

A. Coordinate Contractor's construction schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests, and other required schedules and reports.

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

PART 2 - PRODUCTS

2.1 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

A. Time Frame: Extend schedule from date established for the Notice to Proceed 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 Change Order.

B. Activities: Treat each story or separate area as a separate numbered activity for each main 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.
2. Procurement Activities: Include procurement process activities for long lead items and major items, requiring a cycle of more than 60 days, 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 Section 013300 "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's construction schedule with submittal schedule.
4. Startup and Testing Time: Include no fewer than 15 days for startup and testing.
5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.
6. Punch List and Final Completion: Include not more than 30 days for completion of punch list items and final completion.

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.

6. Other Constraints: As determined by Contractor.

D. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and final completion.

E. Upcoming Work Summary: Prepare summary report indicating activities scheduled to occur or commence prior to submittal of next schedule update. Summarize the following issues:

1. Unresolved issues.
2. Unanswered Requests for Information.
3. Rejected or unreturned submittals.
4. Notations on returned submittals.
5. Pending modifications affecting the Work and Contract Time.

F. Recovery Schedule: When periodic update indicates the Work is 14 or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule.

G. Computer Scheduling Software: Prepare schedules using current version of a program that has been developed specifically to manage construction schedules.

1. Use Scheduling component of Project Web site software specified in Section 013100 "Project Management and Coordination," for Windows 10 operating system.

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE (CPM SCHEDULE)

A. General: Prepare network diagrams using AON (activity-on-node) format.

B. Startup Network Diagram: Submit diagram within 14 days of date established for the Notice to Proceed. Outline significant construction activities for the first 90 days of construction. 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 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 60 days after date established for the 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 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 for individual activities. Indicate nonworking days and holidays incorporated into the schedule in order to coordinate with the Contract Time.

D. CPM Schedule Preparation: Prepare a list of all activities required to complete the Work. Using the startup 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.
    j. Punch list and final completion.
    k. Activities occurring following final completion.

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. Sub-networks on separate sheets are permissible for activities clearly off the critical path.

E. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using a network fragment to demonstrate the effect of the proposed change on the overall project schedule.

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

1. Contractor or subcontractor and the Work or activity.
2. Description of activity.
3. Main 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.
10. Dollar value of activity (coordinated with the schedule of values).

G. 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.

2.3 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. List of separate contractors at Project site.
3. Approximate count of personnel at Project site.
4. Equipment at Project site.
5. Material deliveries.
6. High and low temperatures and general weather conditions, including presence of rain or snow.
7. Accidents.
8. Meetings and significant decisions.
9. Unusual events.
10. Stoppages, delays, shortages, and losses.
11. Meter readings and similar recordings.
12. Emergency procedures.
13. Orders and requests of authorities having jurisdiction.
14. Change Orders received and implemented.
15. Construction Change Directives received and implemented.
16. Services connected and disconnected.
17. Equipment or system tests and startups.
18. Partial completions and occupancies.
19. Substantial Completions authorized.

B. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. 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 monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.

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 final completion percentage for each activity.

B. Distribution: Distribute copies of approved schedule to Architect, Owner, 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

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SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

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

B. Related Requirements:

1. Section 012900 "Payment Procedures" for submitting Applications for Payment and the schedule of values.
2. Section 013200 "Construction Progress Documentation" for submitting schedules and reports, including Contractor's construction schedule.
3. Section 017823 "Operation and Maintenance Data" for submitting operation and maintenance manuals.
4. Section 017839 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
5. Section 017900 "Demonstration and Training" for submitting video recordings of demonstration of equipment and training of Owner's personnel.

1.2 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action.

B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements.

1.3 ACTION SUBMITTALS

A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and additional time for handling and reviewing submittals required by those corrections.

1.4 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

A. Architect's Digital Data Files: Electronic copies of digital data files of the Contract Drawings will not be provided by Architect for Contractor's use in preparing submittals.

B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.

2. Submit all substantial items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approve submittal schedule.

3. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.

   a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

C. Processing Time: Allow time for submittal review, including time for re-submittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including re-submittals.

1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.

2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.

3. Re-submittal Review: Allow 15 days for review of each re-submittal.

D. Identification and Information: Place a permanent label or title block on each paper copy submittal item for identification.

1. Indicate name of firm or entity that prepared each submittal on label or title block.

2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect.

3. Include the following information for processing and recording action taken:

   a. Project name.
   b. Date.
   c. Name and address of Architect.
   d. Name of Contractor.
   e. Names of subcontractor, manufacturer, and supplier.
   f. Submittal number or other unique identifier, including revision identifier.

      1) File name shall use project identifier and Specification Section number followed by a decimal point and then a sequential number (e.g., LNHS-061000.01). Re submittals shall include an alphabetic suffix after another decimal point (e.g., LNHS-061000.01.A).

   g. Number and title of appropriate Specification Section.
   h. Drawing number and detail references, as appropriate.
   i. Other necessary information.

E. Electronic Submittals: Identify and incorporate information in each electronic submittal file as follows:

1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.

2. Name file with submittal number or other unique identifier, including revision identifier.

   a. File name shall use project identifier and Specification Section number followed by a decimal point and then a sequential number (e.g., LNHS-061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., LNHS-061000.01.A).

3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Architect.

4. Transmittal Form for Electronic Submittals: Use electronic form acceptable to Owner, containing the following information:

   a. Project name.
   b. Date.
   c. Name and address of Architect.
   d. Name of Construction Manager.
   e. Name of Contractor.
   f. Name of firm or entity that prepared submittal.
   g. Names of subcontractor, manufacturer, and supplier.
   h. Submittal purpose and description.
   i. Specification Section number and title.
   j. Drawing number and detail references, as appropriate.
   k. Location(s) where product is to be installed, as appropriate.
   l. Related physical samples submitted directly.
   m. Indication of full or partial submittal.
   n. Submittal and transmittal distribution record.
   o. Remarks.

5. Metadata: Include the following information as keywords in the electronic submittal file metadata:

   a. Project name.
   b. Number and title of appropriate Specification Section.
   c. Manufacturer name.
   d. Product name.

F. Options: Identify options requiring selection by Architect.

G. Deviations: Identify deviations from the Contract Documents on submittals.

H. Re-submittals: Make re-submittals in same form and number of copies as initial submittal.

1. Note date and content of previous submittal.

2. Note date and content of revision in label or title block and clearly indicate extent of revision.

3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.

I. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

J. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.

PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES

A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specifications Sections.

1. Submit electronic submittals via email as PDF electronic files.

a. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.

2. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.

2. Mark each copy of each submittal to show which products and options are applicable.

3. Include the following information, as applicable:

a. Manufacturer's catalog cuts.
b. Manufacturer's product specifications.
c. Standard color charts.
d. Statement of compliance with specified referenced standards.
e. Testing by recognized testing agency.
f. Application of testing agency labels and seals.
g. Notation of coordination requirements.
h. Availability and delivery time information.

4. For equipment, include the following in addition to the above, as applicable:

a. Wiring diagrams showing factory-installed wiring.
b. Printed performance curves.
c. Operational range diagrams.

d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.

5. Submit Product Data before or concurrent with Samples.

6. Submit Product Data in the following format:

a. PDF electronic file.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

a. Identification of products.
b. Schedules.
c. Compliance with specified standards.
d. Notation of coordination requirements.
e. Notation of dimensions established by field measurement.
f. Relationship and attachment to adjoining construction clearly indicated.
g. Seal and signature of professional engineer if specified.

2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches, but no larger than 24 by 36 inches.

3. Submit Shop Drawings in the following format:

a. PDF electronic file.

D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.

2. Identification: Attach label on unexposed side of Samples that includes the following:

a. Generic description of Sample.
b. Product name and name of manufacturer.
c. Sample source.
d. Number and title of applicable Specification Section.

3. For projects where electronic submittals are required, provide corresponding electronic submittal of Sample transmittal, digital image file illustrating Sample characteristics, and identification information for record.

4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.

b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.

5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.

   a. Number of Samples: Submit one full set of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.

6. 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 sets of Samples. Architect will retain two Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a project record sample.

      1) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.

E. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:

1. Type of product. Include unique identifier for each product.
2. Manufacturer and product name, and model number if applicable.
3. Number and name of room or space.
4. Location within room or space.
5. Submit product schedule in the following format:

   a. PDF electronic file.

F. Coordination Drawings Submittals: Comply with requirements specified in Section 013100 "Project Management and Coordination."

G. Contractor's Construction Schedule: Comply with requirements specified in Section 013200 "Construction Progress Documentation."

H. Application for Payment and Schedule of Values: Comply with requirements specified in Section 012900 "Payment Procedures.

I. Test and Inspection Reports and Schedule of Tests and Inspections Submittals: Comply with requirements specified in Section 014000 "Quality Requirements."

J. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Section 017700 "Closeout Procedures."

K. Maintenance Data: Comply with requirements specified in Section 017823 "Operation and Maintenance Data."

L. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.

M. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.

N. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

O. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

P. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

Q. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

R. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.

S. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

T. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project.

1. Name of evaluation organization.
2. Date of evaluation.
3. Time period when report is in effect.
4. Product and manufacturer's names.
5. Description of product.
6. Test procedures and results.
7. Limitations of use.

U. Schedule of Tests and Inspections: Comply with requirements specified in Section 014000 "Quality Requirements."

V. Preconstruction Test Reports: Submit 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.

W. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

X. Field Test Reports: Submit written reports 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.

Y. Maintenance Data: Comply with requirements specified in Section 017823 " Operation and Maintenance Data".

Z. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

2.2 DELEGATED-DESIGN SERVICES

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.

B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF electronic file and three paper copies of certificate, 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. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.

B. Project Closeout and Maintenance Material Submittals: See requirements in Section 017700 "Closeout Procedures."

C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S ACTION

A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.

B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or revisions required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.

C. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.

D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for re-submittal without review.

E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION 013300

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SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

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

B. Related Requirements:

1. Section 011000 "Summary" for work restrictions and limitations on utility interruptions.

1.2 USE CHARGES

A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Owner's construction forces, Architect, occupants of Project, testing agencies, and authorities having jurisdiction.

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

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

1.3 INFORMATIONAL SUBMITTALS

A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.

B. Erosion- and Sedimentation-Control Plan: Show compliance with requirements of EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.

C. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire prevention program.

1.4 QUALITY ASSURANCE

A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

C. Accessible Temporary Egress: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1.

1.5 PROJECT CONDITIONS

A. Temporary Use of Permanent Facilities: Engage Installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Chain-Link Fencing: Minimum 2-inch, 0.148-inch-thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet high with galvanized-steel pipe posts; minimum 2-3/8-inch-OD line posts and 2-7/8-inch-OD corner and pull posts, with 1-5/8-inch-OD top rails.

B. Portable Chain-Link Fencing: Minimum 2-inch, 0.148-inch-thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet high with galvanized-steel pipe posts; minimum 2-3/8-inch-OD line posts and 2-7/8-inch-OD corner and pull posts, with 1-5/8-inch-OD top and bottom rails. Provide galvanized-steel bases for supporting posts.

C. Wood Enclosure Fence: Plywood, 8 feet high, framed with four 2-by-4-inch rails, with preservative-treated wood posts spaced not more than 8 feet apart.

D. Polyethylene Sheet: Reinforced, fire-resistive sheet, 10 mils minimum thickness, with flame-spread rating of 15 or less, per ASTM E 84.

E. Dust Control Adhesive-Surface Walk-Off Mats: Provide mats, minimum 36 x 60 inches.

F. Insulation: Un-faced mineral-fiber blanket, manufactured from glass, slag wool, or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively.

2.2 TEMPORARY FACILITIES

A. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.

B. Common-Use Field Office: Of sufficient size to accommodate needs of Owner, Architect, and construction personnel office activities and to accommodate Project meetings specified in other Division 01 Sections. Keep office clean and orderly.

C. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.

1. Store combustible materials apart from building.

2.3 EQUIPMENT

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

B. HVAC Equipment: Unless Owner authorizes use of permanent HVAC system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.

1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.

2. Heating Units: Listed and labeled for type of fuel being consumed, by a qualified testing agency acceptable to authorities having jurisdiction, and marked for intended location and application.

3. Permanent HVAC System: If Owner authorizes use of permanent HVAC system for temporary use during construction, provide filter with MERV of 8 at each return-air grille in system and remove at end of construction and clean HVAC system as required in Section 017700 "Closeout Procedures".

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.

1. Locate facilities to limit site disturbance as specified in Section 011000 "Summary."

B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

A. General: Install temporary service or connect to existing service.

1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.

B. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction.

C. Water Service: Connect to Owner's existing water service facilities. Clean and maintain water service facilities in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.

D. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.

1. Toilets: Use of Owner's existing toilet facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.

E. Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.

F. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.

1. Provide dehumidification systems when required to reduce substrate moisture levels to level required to allow installation or application of finishes.

G. Electric Power Service: Connect to Owner's existing electric power service. Maintain equipment in a condition acceptable to Owner.

H. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.

1. Install electric power service underground unless otherwise indicated.
2. Connect temporary service to Owner's existing power source, as directed by Owner.

I. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.

1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
2. Install lighting for Project identification sign.

J. Electronic Communication Service: Provide a laptop computer in the primary field office adequate for use by Architect and Owner to access project electronic documents and maintain electronic communications. Equip computer with not less than the following:

1. Processor: Intel Core i3, 2.2 GHz processing speed.
2. Memory: 4 gigabyte.
3. Disk Storage: 1 terabyte hard-disk drive and combination DVD-RW/CD-RW drive.
4. Display: 15.6-inch monitor with integrated graphics card.
5. Desktop Display: 24-inch LeD monitor
6. Network Connectivity: 10/100BaseT Ethernet.
7. Productivity Software:

a. Microsoft Office Professional 2007 or higher, including Word, Excel, and Outlook.
b. Adobe Reader 9.0 or higher.
c. WinZip 7.0 or higher.

8. Printer: "All-in-one" unit equipped with printer server, combining color printing, photocopying, scanning, and faxing, or separate units for each of these three functions.

9. Internet Service: Broadband modem, router and ISP, equipped with hardware firewall, providing minimum 384 Kbps upload and 1 Mbps download speeds at each computer.

10. Internet Security: Integrated software, providing software firewall, virus, spyware, phishing, and spam protection in a combined application.

3.3 SUPPORT FACILITIES INSTALLATION

A. General: Comply with the following:

1. Provide construction for temporary offices, shops, and sheds located within construction area or within 30 feet of building lines that is noncombustible according to ASTM E 136. Comply with NFPA 241.

2. Maintain support facilities until Architect schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.

B. Temporary Roads and Paved Areas: Construct and maintain temporary roads and paved areas adequate for construction operations. Locate temporary roads and paved areas as indicated on Drawings.

1. Provide dust-control treatment that is nonpolluting and non-tracking. Reapply treatment as required to minimize dust.

C. Temporary Use of Permanent Roads and Paved Areas: Locate temporary roads and paved areas in same location as permanent roads and paved areas. Construct and maintain temporary roads and paved areas adequate for construction operations. Extend temporary roads and paved areas, within construction limits indicated, as necessary for construction operations.

1. Coordinate elevations of temporary roads and paved areas with permanent roads and paved areas.

2. Prepare subgrade and install subbase and base for temporary roads and paved areas according to Section 312000 "Earth Moving."

3. Recondition base after temporary use, including removing contaminated material, regrading, proofrolling, compacting, and testing.

4. Delay installation of final course of permanent hot-mix asphalt pavement until immediately before Substantial Completion. Repair hot-mix asphalt base-course pavement before installation of final course according to Section 321216 "Asphalt Paving."

D. Traffic Controls: Comply with requirements of authorities having jurisdiction.

1. Protect existing site improvements to remain including curbs, pavement, and utilities.

2. Maintain access for fire-fighting equipment and access to fire hydrants.

E. Parking: Provide temporary parking areas for construction personnel.

F. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.

1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.

2. Remove snow and ice as required to minimize accumulations.

G. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.

1. Identification Signs: Provide Project identification signs as indicated on Drawings.

2. Temporary Signs: Provide other signs as indicated and as required to inform public and individuals seeking entrance to Project.

a. Provide temporary, directional signs for construction personnel and visitors.

3. Maintain and touchup signs so they are legible at all times.

H. Waste Disposal Facilities: Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."

I. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.

1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

J. Temporary Elevator Use: See Section 142100 "Electric Traction Elevators," Section 142113 "Electric Traction Freight Elevators," Section 142400 "Hydraulic Elevators," Section 142413 "Hydraulic Freight Elevators," and Section 142600 "Limited-Use/Limited-Application Elevators" for temporary use of new elevators.

K. Existing Elevator Use: Use of Owner's existing elevators will be permitted, provided elevators are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore elevators to condition existing before initial use, including replacing worn cables, guide shoes, and similar items of limited life.

1. Do not load elevators beyond their rated weight capacity.

2. Provide protective coverings, barriers, devices, signs, or other procedures to protect elevator car and entrance doors and frame. If, despite such protection, elevators become damaged, engage elevator Installer to restore damaged work so no evidence remains of correction work. Return items that cannot be refinished in field to the shop, make required repairs and refinish entire unit, or provide new units as required.

L. Temporary Stairs: Until permanent stairs are available, provide temporary stairs where ladders are not adequate.

M. Existing Stair Usage: Use of Owner's existing stairs will be permitted, provided stairs are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore stairs to condition existing before initial use.

1. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If stairs become damaged, restore damaged areas so no evidence remains of correction work.

N. Temporary Use of Permanent Stairs: Use of new stairs for construction traffic will be permitted, provided stairs are protected and finishes restored to new condition at time of Substantial Completion.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.

B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

C. Temporary Erosion and Sedimentation Control: Comply with requirements of 2003 EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent and requirements specified in Section 311000 "Site Clearing."

D. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent properties and walkways, according to erosion- and sedimentation-control Drawings or requirements of 2003 EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.

E. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.

F. Tree and Plant Protection: Comply with requirements specified in Section 015639 "Temporary Tree and Plant Protection."

G. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.

H. Pest Control: Engage pest-control service to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Perform control operations lawfully, using environmentally safe materials.

I. Site Enclosure Fence: Prior to commencing earthwork, furnish and install site enclosure fence in a manner that will prevent people and animals from easily entering site except by entrance gates.

1. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations.

2. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Furnish one set of keys to Owner.

J. Security Enclosure and Lockup: Install temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. Lock entrances at end of each work day.

K. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

L. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.

M. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.

1. Where heating or cooling is needed and permanent enclosure is not complete, insulate temporary enclosures.

N. Temporary Partitions: Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by Owner and tenants from fumes and noise.

1. Construct dustproof partitions with gypsum wallboard with joints taped on occupied side, and fire-retardant-treated plywood on construction operations side.

2. Construct dustproof partitions with two layers of 6-mil polyethylene sheet on each side. Cover floor with two layers of 6-mil polyethylene sheet, extending sheets 18 inches up the sidewalls. Overlap and tape full length of joints. Cover floor with fire-retardant-treated plywood.

a. Construct vestibule and airlock at each entrance through temporary partition with not less than 48 inches between doors. Maintain water-dampened foot mats in vestibule.

3. Where fire-resistance-rated temporary partitions are indicated or are required by authorities having jurisdiction, construct partitions according to the rated assemblies.

4. Insulate partitions to control noise transmission to occupied areas.

5. Seal joints and perimeter. Equip partitions with gasketed dustproof doors and security locks where openings are required.

6. Protect air-handling equipment.

7. Provide walk-off mats at each entrance through temporary partition.

O. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire prevention program.

1. Prohibit smoking in construction areas.

2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.

3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.

4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

3.5 MOISTURE AND MOLD CONTROL

A. Contractor's Moisture Protection Plan: Avoid trapping water in finished work. Document visible signs of mold that may appear during construction.

B. Exposed Construction Phase: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect materials from water damage and keep porous and organic materials from coming into prolonged contact with concrete.

C. Partially Enclosed Construction Phase: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:

1. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.

2. Keep interior spaces reasonably clean and protected from water damage.

3. Discard or replace water-damaged and wet material.

4. Discard, replace, or clean stored or installed material that begins to grow mold.

5. Perform work in a sequence that allows any wet materials adequate time to dry before enclosing the material in drywall or other interior finishes.

D. Controlled Construction Phase of Construction: After completing and sealing of the building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:

1. Control moisture and humidity inside building by maintaining effective dry-in conditions.

2. Remove materials that cannot be completely restored to their manufactured moisture level within 48 hours.

3.6 OPERATION, TERMINATION, AND REMOVAL

A. Maintenance: Maintain facilities in good operating condition until removal.

1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

B. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

C. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial

Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
2. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 017700 "Closeout Procedures."

END OF SECTION 015000

SECTION 016000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

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

B. Related Requirements:

1. Section 012500 "Substitution Procedures" for requests for substitutions.

1.2 DEFINITIONS

A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
3. Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.

1.3 ACTION SUBMITTALS

A. Comparable Product Requests: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable

product request within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.

a. Form of Approval: As specified in Section 013300 "Submittal Procedures."
b. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.

B. Basis-of-Design Product Specification Submittal: Comply with requirements in 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, select product 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 and vandalism. 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 determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.

C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store 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. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
6. Protect stored products from damage and liquids from freezing.

1.6 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for 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 indicated form properly executed.
3. Refer to other Sections for specific content requirements and particular requirements for submitting special warranties.

C. Submittal Time: Comply with requirements in Section 017700 "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, 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 will make selection.
5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
6. Or Equal: For products specified by name and accompanied by the term "or equal" or "or approved equal" , or "or approved" , comply with requirements in "Comparable Products article to obtain approval for use of an unnamed product.

B. Product Selection Procedures:

1. Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
3. Products:

    a. Restricted List: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.

4. Manufacturers:

    a. Restricted List: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.

5. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated 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 requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.

C. Visual Matching Specification: Where Specifications require "match Architect's sample", provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.

    1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 012500 "Substitution Procedures" for proposal of product.

D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 COMPARABLE PRODUCTS

A. Conditions for Consideration: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with these requirements:

1. Evidence that the proposed product does not require 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

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SECTION 017300 - EXECUTION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:

1. Construction layout.
2. Field engineering and surveying.
3. Installation of the Work.
4. Cutting and patching.
5. Coordination of Owner-installed products.
6. Progress cleaning.
7. Starting and adjusting.
8. Protection of installed construction.
9. Correction of the Work.

B. Related Requirements:

1. Section 011000 "Summary" for limits on use of Project site.
2. Section 017700 "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.
3. Section 078413 "Penetration Firestopping" for patching penetrations in fire-rated construction.

1.2 INFORMATIONAL SUBMITTALS

A. Certificates: Submit certificate signed by professional engineer certifying that location and elevation of improvements comply with requirements.

B. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.

C. Certified Surveys: Submit two copies signed by land surveyor.

D. Final Property Survey: Submit 4 copies showing the Work performed and record survey data.

1.3 QUALITY ASSURANCE

A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.

B. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.

1. Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural element during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection
2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.
4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections.

1. For projects requiring compliance with sustainable design and construction practices and procedures, use products for patching that comply with sustainable design requirements.

B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

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

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services, and other utilities.
2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

C. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Existing Utility Information: Furnish information to Owner that 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. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

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 caused by differing field conditions outside the control of Contractor, submit a request for information to Architect according to requirements in Section 013100 "Project Management and Coordination."

3.3 CONSTRUCTION LAYOUT

A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.

B. General: Engage a land surveyor to lay out the Work using accepted surveying practices.

1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
2. Establish limits on use of Project site.
3. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
4. Inform installers of lines and levels to which they must comply.
5. Check the location, level and plumb, of every major element as the Work progresses.
6. Notify Architect when deviations from required lines and levels exceed allowable tolerances.
7. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.

C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.

D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.

E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect.

3.4 FIELD ENGINEERING

A. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.

B. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.

1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.

C. Certified Survey: On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and sitework.

D. Final Property Survey: Engage a land surveyor to prepare a final property survey showing significant features (real property) for Project. Include on the survey a certification, signed by land surveyor, that principal metes, bounds, lines, and levels of Project are accurately positioned as shown on the survey.

1. Recording: At Substantial Completion, have the final property survey recorded by or with authorities having jurisdiction as the official "property survey."

3.5 INSTALLATION

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

1. Make vertical work plumb and make horizontal work level.
2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
3. Conceal pipes, ducts, and wiring in finished areas unless otherwise 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. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.

F. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.

G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.

1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
2. Allow for building movement, including thermal expansion and contraction.
3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

I. 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.

J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.6 CUTTING AND PATCHING

A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.

C. Temporary Support: Provide temporary support of work to be cut.

D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

E. Adjacent Occupied Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.

G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
6. Proceed with patching after construction operations requiring cutting are complete.

H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.

I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.7 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. 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 waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.
3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

B. Site: Maintain Project site free of waste materials and debris.

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. Where dust would impair proper execution of the Work, 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 specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and 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: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways.

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. 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.

J. 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.

3.8 STARTING AND ADJUSTING

A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

B. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.

C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

D. Manufacturer's Field Service: Comply with qualification requirements in Section 014000 "Quality Requirements"

3.9 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.

END OF SECTION 017300

SECTION 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for the following:

1. Recycling nonhazardous construction waste.
2. Disposing of nonhazardous construction waste.

B. Related Requirements:

1. Section 042000 "Unit Masonry" for disposal requirements for masonry waste.
2. Section 044313.13 "Anchored Stone Masonry Veneer" for disposal requirements for excess stone and stone waste.
3. Section 311000 "Site Clearing" for disposition of waste resulting from site clearing and removal of above- and below-grade improvements.

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.

1.3 PERFORMANCE REQUIREMENTS

A. General: Achieve end-of-Project rates for salvage/recycling of 50 percent by weight of total non-hazardous solid waste generated by the Work. Practice efficient waste management in the use of materials throughout the course of the Work. Use all reasonable means to divert construction and demolition waste from landfills and incinerators. Facilitate recycling and salvage of materials, including the following:

1. Construction Waste:

   a. Site-clearing waste.
   b. Masonry and CMU

c. Lumber
d. Wood sheet materials
e. Wood trim
f. Metals
g. Roofing
h. Insulation
i. Carpet and Pad
j. Gypsum board
k. Piping
l. Electrical conduit
m. Packaging: Regardless of salvage/recycle goal indicated in paragraph above, salvage or recycle 100 percent of the following uncontaminated packaging materials:
    1) Paper
    2) Cardboard
    3) Boxes
    4) Plastic sheet and film
    5) Polystyrene packaging
    6) Wood crates
    7) Plastic pails

1.4 QUALITY ASSURANCE

A. Waste Management Coordinator Qualifications: Experienced firm, with a record of successful waste management coordination of projects with similar requirements.

1. Comply with hauling and disposal regulations of authorities having jurisdiction.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

A. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.

B. Waste Management Coordinator: Engage a waste management coordinator to be responsible for implementing, monitoring, and reporting status of waste management work plan.

C. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at Project site.

1. Distribute waste management plan to everyone concerned within three days of submittal return.

2. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.

D. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.
2. Comply with Section 015000 "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.

3.2 RECYCLING 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 be shared equally by Owner and 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 according to approved construction waste management plan.

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.

   a. Inspect containers and bins for contamination and remove contaminated materials if found.

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 from Owner's property and transport to recycling receiver or processor.

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 on-site.

1. Comply with requirements for use of chipped organic waste as organic mulch.

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 or in container and store in a dry location.

1. Clean Gypsum Board: Grind scraps of clean gypsum board using small mobile chipper or hammer mill. Screen out paper after grinding.

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: Remove waste materials from Owner's property and legally dispose of them.

END OF SECTION 017419

SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:

1. Substantial Completion procedures.
2. Final completion procedures.
3. Warranties.
4. Final cleaning.
5. Repair of the Work.

B. Related Requirements:

1. Section 013233 "Photographic Documentation" for submitting final completion construction photographic documentation.
2. Section 017823 "Operation and Maintenance Data" for operation and maintenance manual requirements.
3. Section 017839 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
4. Section 017900 "Demonstration and Training" for requirements for instructing Owner's personnel.

1.2 ACTION SUBMITTALS

A. Product Data: For cleaning agents.

B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.

C. Certified List of Incomplete Items: Final submittal at Final Completion.

1.3 CLOSEOUT SUBMITTALS

A. Certificates of Release: From authorities having jurisdiction.

B. Certificate of Insurance: For continuing coverage.

C. Field Report: For pest control inspection.

1.4 MAINTENANCE MATERIAL SUBMITTALS

A. Schedule of Maintenance Material Items: For maintenance material submittal items specified in other Sections.

1.5 SUBSTANTIAL COMPLETION PROCEDURES

A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.

B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, property surveys, and similar final record information.
3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Architect. Label with manufacturer's name and model number where applicable.

    a. Schedule of Maintenance Material Items: Prepare and submit schedule of maintenance material submittal items, including name and quantity of each item and name and number of related Specification Section. Obtain Architect's signature for receipt of submittals.

5. Submit test/adjust/balance records.
6. Submit sustainable design submittals not previously submitted.
7. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.

C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Advise Owner of pending insurance changeover requirements.
2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
3. Complete startup and testing of systems and equipment.
4. Perform preventive maintenance on equipment used prior to Substantial Completion.
5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Section 017900 "Demonstration and Training."
6. Advise Owner of changeover in heat and other utilities.
7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.

8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
9. Complete final cleaning requirements, including touchup painting.
10. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect 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, that must be completed or corrected before certificate will be issued.

1. Re-inspection: Request re-inspection 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.

1.6 FINAL COMPLETION PROCEDURES

A. Preliminary Procedures: Before requesting final inspection for determining final completion, complete the following:

1. Submit a final Application for Payment according to Section 012900 "Payment Procedures."
2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
3. Certificate of Insurance: 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.

B. Inspection: Submit a written request for final inspection to determine 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. Re-inspection: Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.7 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Organization 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.
3. Submit list of incomplete items in the following format:

    a. PDF electronic file. Architect will return annotated copy.

1.8 SUBMITTAL OF PROJECT WARRANTIES

A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated, or when delay in submittal of warranties might limit Owner's rights under warranty.

B. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.

1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
4. Warranty Electronic File: Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item. Provide bookmarked table of contents at beginning of document.

C. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

1. Use cleaning products that comply with Green Seal's GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Perform 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 designated 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 building.
f. Clean exposed exterior and interior 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 debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
h. Sweep concrete floors broom clean in unoccupied spaces.
i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
k. Remove labels that are not permanent.
l. Wipe surfaces of mechanical and electrical equipment, elevator equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
m. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
n. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
o. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.
p. Leave Project clean and ready for occupancy.

C. Pest Control: Comply with pest control requirements in Section 015000 "Temporary Facilities and Controls." Prepare written report.

3.2 REPAIR OF THE WORK

A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.

B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.

1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that that already show evidence of repair or restoration.

    a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.

3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

END OF SECTION 017700

SECTION 042200 - CONCRETE UNIT MASONRY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Concrete masonry units.
2. Decorative concrete masonry units.
3. Pre-faced concrete masonry units.
4. Steel reinforcing bars.

1.2 DEFINITIONS

A. CMU(s): Concrete masonry unit(s).

B. Reinforced Masonry: Masonry containing reinforcing steel in grouted cells.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For reinforcing steel. Detail bending, lap lengths, and placement of unit masonry reinforcing bars. Comply with ACI 315.

C. Samples: For each type and color of the following:

1. Decorative CMUs.
2. Pigmented mortar.

1.4 INFORMATIONAL SUBMITTALS

A. Material Certificates: For each type and size of product. For masonry units, include data on material properties.

B. Mix Designs: For each type of mortar and grout. Include description of type and proportions of ingredients.

1.5 QUALITY ASSURANCE

A. Sample Panels: Build sample panels to verify selections made under Sample submittals and to demonstrate aesthetic effects. Comply with requirements in Section 014000 "Quality Requirements" for mockups.

1. Build sample panels for typical interior wall in sizes approximately 60 inches long by 48 inches high by full thickness.

1.6 FIELD CONDITIONS

A. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in TMS 602/ACI 530.1/ASCE 6.

B. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in TMS 602/ACI 530.1/ASCE 6.

PART 2 - PRODUCTS

2.1 UNIT MASONRY, GENERAL

A. Masonry Standard: Comply with TMS 602/ACI 530.1/ASCE 6, except as modified by requirements in the Contract Documents.

B. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to contain chips, cracks, or other defects exceeding limits stated. Do not use units where such defects are exposed in the completed Work.

2.2 CONCRETE MASONRY UNITS

A. Shapes: Provide shapes indicated and as follows, with exposed surfaces matching exposed faces of adjacent units unless otherwise indicated.

1. Provide special shapes for lintels, corners, jambs, sashes, movement joints, headers, bonding, and other special conditions.

B. Integral Water Repellant: Provide Units made with integral water repellant.

C. CMUs: ASTM C 90.

D. Concrete Building Brick: ASTM C 55.

E. Decorative CMUs: ASTM C 90. Basis of Design: Adams Products.

1. Density Classification: Light weight.
2. Pattern and Texture: Match to existing on site:
   a. Standard pattern, split-faced finish.
   b. Standard pattern, matte-face finish.
   c. Single-Score pattern, matte-face finish.
   d. Bond beam, matte-face finish.
3. Color: As selected by Architect from manufacturer's full range.

2.3 CONCRETE LINTELS

A. Concrete Lintels: ASTM C 1623, matching CMUs in color, texture, and density classification; and with reinforcing bars indicated. Provide lintels with net-area compressive strength not less than that of CMUs.

2.4 MORTAR AND GROUT MATERIALS

A. Masonry Cement: ASTM C 91/C 91M.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
   a. Cemex S.A.B. de C.V.
   b. Holcim (US) Inc.
   c. Lafarge North America Inc.

B. Colored Cement Products: Packaged blend made from masonry cement and mortar pigments, complying with specified requirements, and containing no other ingredients.

1. Colored Masonry Cement:
   a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
      1) Cemex S.A.B. de C.V.
      2) Holcim (US) Inc.
      3) Lafarge North America Inc.

C. Aggregate for Mortar: ASTM C 144.

1. White-Mortar Aggregates: Natural white sand or crushed white stone.

2. Colored-Mortar Aggregates: Natural sand or crushed stone of color necessary to produce required mortar color.

D. Aggregate for Grout: ASTM C 404.

E. Water-Repellent Admixture: Liquid water-repellent mortar admixture intended for use with CMUs containing integral water repellent from same manufacturer.

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

a. ACM Chemistries.
b. BASF Corporation - Admixture Systems.
c. GCP Applied Technologies (formerly Grace Construction Products).

F. Cold-Weather Admixture: Non-chloride, noncorrosive, accelerating admixture complying with ASTM C 494/C494M, Type C, and recommended by manufacturer for use in masonry mortar of composition indicated.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. BASF Corporation; Construction Systems
b. ACM Chemistries.
c. Euclid Chemical Company (The); an RPM Company

G. Water: Potable.

2.5 REINFORCEMENT

A. Uncoated-Steel Reinforcing Bars: ASTM A 615/A 615M or ASTM A 996/A 996M, Grade 60.

B. Reinforcing Bar Positioners: Wire units designed to fit into mortar bed joints spanning masonry unit cells and to hold reinforcing bars in center of cells. Units are formed from 0.148-inch steel wire, hot-dip galvanized after fabrication. Provide units designed for number of bars indicated.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Dur-O-Wal; a Hohmann & Barnard company.
b. Heckmann Building Products, Inc.
c. Hohmann & Barnard, Inc.

C. Masonry-Joint Reinforcement, General: ASTM A 951/A 951M.

1. Interior Walls: Hot-dip galvanized, carbon steel.
2. Exterior Walls: Hot-dip galvanized carbon steel.

3. Wire Size for Side Rods: 0.148-inch diameter.
4. Wire Size for Cross Rods: 0.148-inch diameter.
5. Spacing of Cross Rods: Not more than 16 inches o.c.
6. Provide in lengths of not less than 10 feet, with prefabricated corner and tee units.

2.6 MORTAR AND GROUT MIXES

A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures unless otherwise indicated.

1. Do not use calcium chloride in mortar or grout.
2. Use masonry cement mortar unless otherwise indicated.
3. Add cold-weather admixture (if used) at same rate for all mortar that will be exposed to view, regardless of weather conditions, to ensure that mortar color is consistent.

B. Mortar for Unit Masonry: Comply with ASTM C 270, Proportion Specification. Provide the following types of mortar for applications stated unless another type is indicated.

1. For all masonry, use Type S.

C. Pigmented Mortar: Use colored cement product.

1. Pigments shall not exceed 5 percent of masonry cement by weight.
2. Application: Use pigmented mortar for exposed mortar joints with the following units:

a. Decorative CMUs.

D. Grout for Unit Masonry: Comply with ASTM C 476.

1. Use grout of type indicated or, if not otherwise indicated, of type (fine or coarse) that will comply with TMS 602/ACI 530.1/ASCE 6 for dimensions of grout spaces and pour height.
2. Proportion grout in accordance with ASTM C 476, Table 1 or paragraph 4.2.2 for specified 28-day compressive strength indicated, but not less than 2000 psi.
3. Provide grout with a slump of 8 to 11 inches as measured according to ASTM C 143/C 143M.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.

3.2 TOLERANCES

A. Dimensions and Locations of Elements:

1. For dimensions in cross section or elevation, do not vary by more than plus 1/2 inch or minus 1/4 inch.
2. For location of elements in plan, do not vary from that indicated by more than plus or minus 1/2 inch.
3. For location of elements in elevation, do not vary from that indicated by more than plus or minus 1/4 inch in a story height or 1/2 inch total.

B. Lines and Levels:

1. For bed joints and top surfaces of bearing walls, do not vary from level by more than 1/4 inch in 10 feet, or 1/2-inch maximum.
2. For conspicuous horizontal lines, such as lintels, sills, parapets, and reveals, do not vary from level by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2-inch maximum.
3. For vertical lines and surfaces, do not vary from plumb by more than 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2-inch maximum.
4. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2-inch maximum.
5. For lines and surfaces, do not vary from straight by more than 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2-inch maximum.

C. Joints:

1. For bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch, with a maximum thickness limited to 1/2 inch.
2. For head and collar joints, do not vary from thickness indicated by more than plus 3/8 inch or minus 1/4 inch.
3. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch.

3.3 LAYING MASONRY WALLS

A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.

B. Bond Pattern for Exposed Masonry: Unless otherwise indicated, lay exposed masonry in running bond; do not use units with less-than-nominal 4-inch horizontal face dimensions at corners or jambs.

C. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.

D. Fill space between steel frames and masonry solidly with mortar unless otherwise indicated.

E. Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath, wire mesh, or plastic mesh in the joint below, and rod mortar or grout into core.

F. Fill cores in hollow CMUs with grout 24 inches under bearing plates, beams, lintels, posts, and similar items unless otherwise indicated.

3.4 MORTAR BEDDING AND JOINTING

A. Lay hollow CMUs as follows:

1. Bed face shells in mortar and make head joints of depth equal to bed joints.
2. Bed webs in mortar in all courses of piers, columns, and pilasters.
3. Bed webs in mortar in grouted masonry, including starting course on footings.
4. Fully bed entire units, including areas under cells, at starting course on footings where cells are not grouted.

B. Lay solid CMUs with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.

C. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness unless otherwise indicated.

D. Cut joints flush for masonry walls to receive plaster or other direct-applied finishes (other than paint) unless otherwise indicated.

3.5 MASONRY-JOINT REINFORCEMENT

A. General: Install entire length of longitudinal side rods in mortar with a minimum cover of 5/8 inch on exterior side of walls, 1/2 inch elsewhere. Lap reinforcement a minimum of 6 inches.

1. Space reinforcement not more than 16 inches o.c.
2. Space reinforcement not more than 8 inches o.c. in foundation walls and parapet walls.
3. Provide reinforcement not more than 8 inches above and below wall openings and extending 12 inches beyond openings in addition to continuous reinforcement.

B. Interrupt joint reinforcement at control and expansion joints unless otherwise indicated.

3.6 FIELD QUALITY CONTROL

A. Testing and Inspecting: Owner will engage special inspectors to perform tests and inspections and prepare reports. Allow inspectors access to scaffolding and work areas as needed to perform tests and inspections. Retesting of materials that fail to comply with specified requirements shall be done at Contractor's expense.

3.7 REPAIRING, POINTING, AND CLEANING

A. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.

B. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:

1. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes.
2. Clean concrete masonry by applicable cleaning methods indicated in NCMA TEK 8-4A.

END OF SECTION 042200

SECTION 061053 - MISCELLANEOUS ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Framing with dimension lumber.
2. Rooftop equipment bases and support curbs.
3. Wood blocking, cants, and nailers.
4. Wood furring.
5. Wood sleepers.
6. Utility shelving.
7. Plywood backing panels.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product.

1.3 INFORMATIONAL SUBMITTALS

A. Evaluation Reports: For the following, from ICC-ES:

1. Preservative-treated wood.
2. Fire-retardant-treated wood.
3. Power-driven fasteners.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.

1. Factory mark each piece of lumber with grade stamp of grading agency.
2. For exposed lumber indicated to receive a stained or natural finish, mark grade stamp on end or back of each piece.
3. Dress lumber, S4S, unless otherwise indicated.

B. Maximum Moisture Content of Lumber: 15 percent for 2-inch nominal thickness or less, 19 percent for more than 2-inch nominal thickness unless otherwise indicated.

2.7 FASTENERS

A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.

1. Where carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.

B. Screws for Fastening to Metal Framing: ASTM C 954, length as recommended by screw manufacturer for material being fastened.

C. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.

2.8 MISCELLANEOUS MATERIALS

A. Adhesives for Gluing Furring and Sleepers to Concrete or Masonry: Formulation complying with ASTM D 3498 that is approved for use indicated by adhesive manufacturer.

B. Flexible Flashing: Composite, self-adhesive, flashing product consisting of a pliable, butyl rubber or rubberized-asphalt compound, bonded to a high-density polyethylene film, aluminum foil, or spunbonded polyolefin to produce an overall thickness of not less than 0.025 inch.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.

B. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry accurately to other construction. Locate furring, nailers, blocking,and similar supports to comply with requirements for attaching other construction.

C. Install plywood backing panels by fastening to studs; coordinate locations with utilities requiring backing panels. Install fire-retardant-treated plywood backing panels with classification marking of testing agency exposed to view.

D. Do not splice structural members between supports unless otherwise indicated.

E. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.

F. Securely attach carpentry work to substrate by anchoring and fastening as indicated, complying with the following:

1. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code for all projects other than one- and two-family dwellings.
2. Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments," in ICC's International Residential Code for One- and Two-Family Dwellings.
3. ICC-ES evaluation report for fastener.

3.2 PROTECTION

A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION 061053

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SECTION 061600 - SHEATHING

1.1 SUMMARY

A. Section Includes:

1. Wall sheathing.
2. Roof sheathing.
3. Parapet sheathing.
4. Composite nail base insulated roof sheathing.
5. Subflooring.
6. Underlayment.
7. Sheathing joint and penetration treatment.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product.

1.3 INFORMATIONAL SUBMITTALS

A. Evaluation Reports: For the following, from ICC-ES:

1. Wood-preservative-treated plywood.
2. Fire-retardant-treated plywood.
3. Foam-plastic sheathing.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Resistance Ratings: As tested according to ASTM E 119; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Fire-Resistance Ratings: Indicated by design designations from UL's "Fire Resistance Directory" or from the listings of another qualified testing agency.

2.2 WOOD PANEL PRODUCTS

2.3 PRESERVATIVE-TREATED PLYWOOD

A. Preservative Treatment by Pressure Process: AWPA U1; Use Category UC2 for interior construction not in contact with ground, Use Category UC3b for exterior construction not in contact with ground, and Use Category UC4a for items in contact with ground.

B. Mark plywood with appropriate classification marking of an inspection agency acceptable to authorities having jurisdiction.

C. Application: Treat items indicated on Drawings and plywood in contact with masonry or concrete or used with roofing, flashing, vapor barriers, and waterproofing.

2.4 FIRE-RETARDANT-TREATED PLYWOOD

A. General: Where fire-retardant-treated materials are indicated, use materials complying with requirements in this article that are acceptable to authorities having jurisdiction and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.

B. Fire-Retardant-Treated Plywood by Pressure Process: Products with a flame-spread index of 25 or less when tested according to ASTM E 84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet beyond the centerline of the burners at any time during the test.

1. Exterior Type: Treated materials shall comply with requirements specified above for fire-retardant-treated plywood by pressure process after being subjected to accelerated weathering according to ASTM D 2898. Use for exterior locations and where indicated.
2. Interior Type A: Treated materials shall have a moisture content of 28 percent or less when tested according to ASTM D 3201/D 3201M at 92 percent relative humidity. Use where exterior type is not indicated.
3. Design Value Adjustment Factors: Treated lumber plywood shall be tested according to ASTM D 5516 and design value adjustment factors shall be calculated according to ASTM D 6305. Span ratings after treatment shall be not less than span ratings specified. For roof sheathing and where high-temperature fire-retardant treatment is indicated, span ratings for temperatures up to 170 deg F shall be not less than span ratings specified.

C. Kiln-dry material after treatment to a maximum moisture content of 15 percent.

D. Identify fire-retardant-treated plywood with appropriate classification marking of qualified testing agency.

E. Application: Treat plywood indicated on Drawings.

2.5 WALL SHEATHING

A. Plywood Sheathing: Either DOC PS 1 or DOC PS 2, Exterior, Structural I sheathing.

B. Oriented-Strand-Board Sheathing: DOC PS 2, Exposure 1, Structural I sheathing.

C. Paper-Surfaced Gypsum Sheathing: ASTM C 1396/C 1396M, gypsum sheathing; with water-resistant-treated core and with water-repellent paper bonded to core's face, back, and long edges.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

   a. Georgia-Pacific Building Products.
   b. National Gypsum Company.
   c. United States Gypsum.

2. Type and Thickness: Type X, 5/8 inch thick.

D. Glass-Mat Gypsum Sheathing: ASTM C 1177/1177M.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

   a. CertainTeed Corporation.
   b. Georgia-Pacific Building Products.
   c. National Gypsum Company.

2. Type and Thickness: Type X, 5/8 inch thick.

E. Cellulose Fiber-Reinforced Gypsum Sheathing: ASTM C 1278/C 1278M, gypsum sheathing.

1. Product: Subject to compliance with requirements, provide "Fiberock Sheathing with Aqua-Tough" by United States Gypsum Co.
2. Type and Thickness: Type X, 5/8 inch thick.

F. Cementitious Backer Units: ASTM C 1325, Type A.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

   a. Custom Building Products.

   b. United States Gypsum.

2. Thickness: 1/2 inch.

G. Extruded-Polystyrene-Foam Sheathing: ASTM C 578, Type IV, in manufacturer's standard lengths and widths with tongue-and-groove or shiplap long edges as standard with manufacturer.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

   a. Dow Chemical Company (The).

2. Thickness: As indicated.

3. Flame Propagation Test: Materials and construction shall be as tested according to NFPA 285.

H. Foil-Faced, Polyisocyanurate-Foam Sheathing: ASTM C 1289, Type I or Type II, Class 2, rigid, cellular, polyisocyanurate thermal insulation. Foam-plastic core and facings shall have a flame-spread index of 25 or less when tested individually.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Atlas Roofing Corporation.
b. Dow Chemical Company (The).
c. Firestone Building Products.

2. Thickness: As indicated.
3. Flame Propagation Test: Materials and construction shall be as tested according to NFPA 285.

2.6 ROOF SHEATHING

A. Plywood Sheathing: Either DOC PS 1 or DOC PS 2, Exterior, Structural I sheathing.

B. Oriented-Strand-Board Sheathing: DOC PS 2, Exposure 1, Structural I sheathing.

2.7 PARAPET SHEATHING

A. Plywood Sheathing: Either DOC PS 1 or DOC PS 2, Exterior, Structural I sheathing.

B. Oriented-Strand-Board Sheathing: DOC PS 2, Exposure 1, Structural I sheathing.

C. Glass-Mat Gypsum Sheathing: ASTM C 1177/1177M.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. CertainTeed Corporation.
b. Georgia-Pacific Building Products.
c. National Gypsum Company.

2. Type and Thickness: Type X, 5/8 inch thick.

D. Cementitious Backer Units: ASTM C 1325, Type A.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Custom Building Products.

b. United States Gypsum.

2. Thickness: 1/2 inch.

2.8 SUBFLOORING AND UNDERLAYMENT

A. Plywood Subflooring: Either DOC PS 1 or DOC PS 2, Exterior, Structural I single-floor panels or sheathing.

B. Oriented-Strand-Board Subflooring: DOC PS 2, Exposure 1, Structural I sheathing.

C. Underlayment: Provide underlayment in nominal thicknesses indicated or, if not indicated, not less than 1/4 inch over smooth subfloors and not less than 3/8 inch over board or uneven subfloors.

1. Plywood Underlayment for Resilient Flooring: DOC PS 1, Exterior A-C with fully sanded face.
2. Plywood Underlayment for Ceramic Tile: DOC PS 1, Exterior, C-C Plugged, not less than 5/8-inch nominal thickness.
3. Plywood Underlayment for Carpet: DOC PS 1, Exterior, C-C Plugged.
4. Particleboard Underlayment: ANSI A208.1, Grade PBU.
5. Hardboard Underlayment: ANSI A135.4, Class 4 (Service), Surface S1S; with back side sanded.

2.9 FASTENERS

A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.

1. For roof and wall sheathing, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.
2. For roof and wall sheathing, provide fasteners with organic-polymer or other corrosion-protective coating having a salt-spray resistance of more than 800 hours according to ASTM B 117.

2.10 SHEATHING JOINT-AND-PENETRATION TREATMENT MATERIALS

A. Sealant for Paper-Surfaced Gypsum Sheathing: Elastomeric, medium-modulus, neutral-curing silicone joint sealant compatible with joint substrates formed by gypsum sheathing and other materials, recommended by sheathing manufacturer for application indicated and complying with requirements for elastomeric sealants specified in Section 079200 "Joint Sealants."

B. Sealant for Glass-Mat Gypsum Sheathing: Silicone emulsion sealant complying with ASTM C 834, compatible with sheathing tape and sheathing and recommended by tape and sheathing manufacturers for use with glass-fiber sheathing tape and for covering exposed fasteners.

1. Sheathing Tape: Self-adhering glass-fiber tape, minimum 2 inches wide, 10 by 10 or 10 by 20 threads/inch, of type recommended by sheathing and tape manufacturers for use with silicone emulsion sealant in sealing joints in glass-mat gypsum sheathing and with a history of successful in-service use.

C. Sheathing Tape for Foam-Plastic Sheathing: Pressure-sensitive plastic tape recommended by sheathing manufacturer for sealing joints and penetrations in sheathing.

2.11 MISCELLANEOUS MATERIALS

A. Adhesives for Field Gluing Panels to Wood Framing: Formulation complying with APA AFG-01 that is approved for use with type of construction panel indicated by manufacturers of both adhesives and panels.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Do not use materials with defects that impair quality of sheathing or pieces that are too small to use with minimum number of joints or optimum joint arrangement. Arrange joints so that pieces do not span between fewer than three support members.

B. Cut panels at penetrations, edges, and other obstructions of work; fit tightly against abutting construction unless otherwise indicated.

C. Securely attach to substrate by fastening as indicated, complying with the following:

1. Table 2304.9.1, "Fastening Schedule," in the ICC's International Building Code except for one- and two-family dwellings.
2. Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments," in the ICC's International Residential Code for One- and Two-Family Dwellings.
3. ICC-ES evaluation report for fastener.

D. Coordinate wall and roof sheathing installation with flashing and joint-sealant installation so these materials are installed in sequence and manner that prevent exterior moisture from passing through completed assembly.

E. Do not bridge building expansion joints; cut and space edges of panels to match spacing of structural support elements.

3.2 WOOD STRUCTURAL PANEL INSTALLATION

A. General: Comply with applicable recommendations in APA Form No. E30, "Engineered Wood Construction Guide," for types of structural-use panels and applications indicated.

B. Fastening Methods: Fasten panels as indicated below:

1. Combination Subfloor-Underlayment:

   a. Glue and nail to wood framing.
   b. Screw to cold-formed metal framing.
   c. Space panels 1/8 inch apart at edges and ends.

2. Subflooring:

   a. Glue and nail Nail or staple to wood framing.
   b. Screw to cold-formed metal framing.
   c. Space panels 1/8 inch apart at edges and ends.

3. Wall and Roof Sheathing:

   a. Nail to wood framing. Apply a continuous bead of glue to framing members at edges of wall sheathing panels.
   b. Screw to cold-formed metal framing.
   c. Space panels 1/8 inch apart at edges and ends.

4. Underlayment:

   a. Nail or staple to subflooring.
   b. Space panels 1/32 inch apart at edges and ends.
   c. Fill and sand edge joints of underlayment receiving resilient flooring immediately before installing flooring.

3.3 GYPSUM SHEATHING INSTALLATION

A. Comply with GA-253 and with manufacturer's written instructions.

   1. Fasten gypsum sheathing to wood framing with screws.
   2. Fasten gypsum sheathing to cold-formed metal framing with screws.
   3. Install panels with a 3/8-inch gap where non-load-bearing construction abuts structural elements.
   4. Install panels with a 1/4-inch gap where they abut masonry or similar materials that might retain moisture, to prevent wicking.

B. Seal sheathing joints according to sheathing manufacturer's written instructions.

   1. Apply elastomeric sealant to joints and fasteners and trowel flat. Apply sufficient amount of sealant to completely cover joints and fasteners after troweling. Seal other penetrations and openings. This applies to gypsum sheathing.
   2. Apply glass-fiber sheathing tape to glass-mat gypsum sheathing joints and apply and trowel sealant to embed entire face of tape in sealant. Apply sealant to exposed fasteners with a trowel so fasteners are completely covered. Seal other penetrations and openings. This applies only to glass-mat gypsum sheathing.

3.4 CEMENTITIOUS BACKER UNIT INSTALLATION

A. Install panels and treat joints according to ANSI A108.11 and manufacturer's written instructions for type of application indicated.

3.5 FOAM-PLASTIC SHEATHING INSTALLATION

A. Comply with manufacturer's written instructions.

B. Foam-Plastic Wall Sheathing: Install vapor-relief strips or equivalent for permitting escape of moisture vapor that otherwise would be trapped in stud cavity behind sheathing.

C. Apply sheathing tape to joints between foam-plastic sheathing panels and at items penetrating sheathing. Apply at upstanding flashing to overlap both flashing and sheathing.

3.6 PARTICLEBOARD UNDERLAYMENT INSTALLATION

A. Comply with CPA's recommendations for type of subfloor indicated. Fill and sand gouges, gaps, and chipped edges. Sand uneven joints flush.

1. Fastening Method: Glue and nail underlayment to subflooring.

3.7 HARDBOARD UNDERLAYMENT INSTALLATION

A. Comply with CPA's recommendations and hardboard manufacturer's written instructions for preparing and applying hardboard underlayment.

1. Fastening Method: Nail or staple underlayment to subflooring.

END OF SECTION 061600

SECTION 061753 - SHOP-FABRICATED WOOD TRUSSES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Wood roof trusses.
2. Wood floor trusses.
3. Wood girder trusses.

1.2 ACTION SUBMITTALS

A. Product Data: For metal-plate connectors, metal truss accessories, and fasteners.

B. Shop Drawings: Show fabrication and installation details for trusses.

1. Show location, pitch, span, camber, configuration, and spacing for each type of truss required.
2. Indicate sizes, stress grades, and species of lumber.
3. Indicate locations of permanent bracing required to prevent buckling of individual truss members due to design loads.
4. Indicate locations, sizes, and materials for permanent bracing required to prevent buckling of individual truss members due to design loads.
5. Indicate type, size, material, finish, design values, orientation, and location of metal connector plates.
6. Show splice details and bearing details.

C. Delegated-Design Submittal: For metal-plate-connected wood trusses indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.3 INFORMATIONAL SUBMITTALS

A. Product Certificates: For metal-plate-connected wood trusses, signed by officer of truss-fabricating firm.

B. Evaluation Reports: For the following, from ICC-ES:

1. Metal-plate connectors.
2. Metal truss accessories.

1.4 QUALITY ASSURANCE

A. Metal Connector-Plate Manufacturer Qualifications: A manufacturer that is a member of TPI and that complies with quality-control procedures in TPI 1 for manufacture of connector plates.

1. Manufacturer's responsibilities include providing professional engineering services needed to assume engineering responsibility.
2. Engineering Responsibility: Preparation of Shop Drawings and comprehensive engineering analysis by a qualified professional engineer.

B. Fabricator Qualifications: Shop that participates in a recognized quality-assurance program, complies with quality-control procedures in TPI 1, and involves third-party inspection by an independent testing and inspecting agency acceptable to Architect and authorities having jurisdiction.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Handle and store trusses to comply with recommendations in SBCA BCSI, "Building Component Safety Information: Guide to Good Practice for Handling, Installing, Restraining, & Bracing Metal Plate Connected Wood Trusses."

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design metal-plate-connected wood trusses.

B. Structural Performance: Metal-plate-connected wood trusses shall be capable of withstanding design loads within limits and under conditions indicated. Comply with requirements in TPI 1.

C. Comply with applicable requirements and recommendations of TPI 1, TPI DSB, and SBCA BCSI.

D. Wood Structural Design Standard: Comply with applicable requirements in AF&PA's "National Design Specifications for Wood Construction" and its "Supplement."

2.2 DIMENSION LUMBER

A. Lumber: DOC PS 20 and applicable rules of any rules-writing agency certified by the American Lumber Standard Committee (ALSC) Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.

1. Provide dry lumber with 15 percent maximum moisture content at time of dressing.

B. Permanent Bracing: Provide wood bracing that complies with requirements for miscellaneous lumber in Section 061000 "Rough Carpentry."

2.3 METAL CONNECTOR PLATES

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Eagle Metal Products.
2. Jager Building Systems, Inc.
3. MiTek Industries, Inc.

B. General: Fabricate connector plates to comply with TPI 1.

C. Hot-Dip Galvanized-Steel Sheet: ASTM A 653/A 653M; Structural Steel (SS), high-strength low-alloy steel Type A (HSLAS Type A), or high-strength low-alloy steel Type B (HSLAS Type B); G60 coating designation; and not less than 0.036 inch thick.

2.4 FASTENERS

A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.

1. Provide fasteners for use with metal framing anchors that comply with written recommendations of metal framing manufacturer.
2. Where trusses are exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.

B. Nails, Brads, and Staples: ASTM F 1667.

2.5 METAL FRAMING ANCHORS AND ACCESSORIES

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Simpson Strong-Tie Co., Inc.

B. Allowable design loads, as published by manufacturer, shall comply with or exceed those of products of manufacturers listed. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency. Framing anchors shall be punched for fasteners adequate to withstand same loads as framing anchors.

C. Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A 653/A 653M, G60 coating designation.

2.6 FABRICATION

A. Assemble truss members in design configuration indicated; use jigs or other means to ensure uniformity and accuracy of assembly, with joints closely fitted to comply with tolerances in TPI 1. Position members to produce design camber indicated.

1. Fabricate wood trusses within manufacturing tolerances in TPI 1.

B. Connect truss members by metal connector plates located and securely embedded simultaneously in both sides of wood members by air or hydraulic press.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install wood trusses only after supporting construction is in place and is braced and secured.

B. If trusses are delivered to Project site in more than one piece, assemble trusses before installing.

C. Hoist trusses in place by lifting equipment suited to sizes and types of trusses required, exercising care not to damage truss members or joints by out-of-plane bending or other causes.

D. Install and brace trusses according to TPI recommendations and as indicated.

E. Anchor trusses securely at bearing points; use metal truss tie-downs or floor truss hangers as applicable. Install fasteners through each fastener hole in metal framing anchors according to manufacturer's fastening schedules and written instructions.

F. Securely connect each truss ply required for forming built-up girder trusses.

G. Install and fasten permanent bracing during truss erection and before construction loads are applied. Anchor ends of permanent bracing where terminating at walls or beams.

1. Install bracing to comply with Section 061000 "Rough Carpentry."
2. Install and fasten strongback bracing vertically against vertical web of parallel-chord floor trusses at centers indicated.

H. Install wood trusses within installation tolerances in TPI 1.

I. Do not alter trusses in field. Do not cut, drill, notch, or remove truss members.

J. Replace wood trusses that are damaged or do not comply with requirements.

END OF SECTION 061753

SECTION 072100 - THERMAL INSULATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Glass-fiber blanket insulation.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

PART 2 - PRODUCTS

2.1 GLASS-FIBER BLANKET

A. Glass-Fiber Blanket Insulation, Unfaced: ASTM C 665, Type I; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively, per ASTM E 84; passing ASTM E 136 for combustion characteristics.

1. Thickness: 9-1/2 inch.

2. Minimum R-Value: R-30.

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

1. CertainTeed Corporation.
2. Guardian Building Products, Inc.
3. Johns Manville; a Berkshire Hathaway company.
4. Knauf Insulation.
5. Owens Corning.

2.2 ACCESSORIES

A. Eave Ventilation Troughs: Preformed, rigid fiberboard or plastic sheets designed and sized to fit between roof framing members and to provide ventilation between insulated attic spaces and vented eaves.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Comply with insulation manufacturer's written instructions applicable to products and applications.

B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed to ice, rain, or snow at any time.

C. Extend insulation to envelop entire area to be insulated. Cut and fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.

D. Provide sizes to fit applications indicated, selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation units unless multiple layers are otherwise shown or required to make up total thickness or to achieve R-value.

3.2 INSTALLATION OF INSULATION IN FRAMED CONSTRUCTION

A. Glass-Fiber or Mineral-Wool Blanket Insulation: Install in cavities formed by framing members according to the following requirements:

1. Use insulation widths and lengths that fill the cavities formed by framing members. If more than one length is required to fill the cavities, provide lengths that will produce a snug fit between ends.
2. Place insulation in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.
3. Maintain 3-inch clearance of insulation around recessed lighting fixtures not rated for or protected from contact with insulation.
4. Install eave ventilation trough between roof framing members in insulated attic spaces at vented eaves.
5. For wood-framed construction, install blankets according to ASTM C 1320 and as follows:

   a. With faced blankets having stapling flanges, lap blanket flange over flange of adjacent blanket to maintain continuity of vapor retarder once finish material is installed over it.

END OF SECTION 072100

SECTION 072726 - FLUID-APPLIED MEMBRANE AIR BARRIERS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Vapor-permeable, fluid-applied air barriers.

2. Accessory Materials:

a. Joint Treatment (joint tape and joint compound)
b. Flashing
c. Sealant

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For air-barrier assemblies.

1. Include details for substrate joints and cracks, counterflashing strips, penetrations, inside and outside corners, terminations, and tie-ins with adjoining construction.

1.3 INFORMATIONAL SUBMITTALS

A. Product certificates.

B. Product test reports.

C. Field quality-control reports.

D. Warranty: Manufacturer's executed warranty form with authorized signatures and endorsements indicating date of Substantial Completion.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

B. Mockups: Build mockups to set quality standards for materials and execution.

1. Build integrated mockups of exterior wall assembly 10 feet x 10 feet, incorporating backup wall construction, external cladding, window, storefront, door frame and sill, insulation, ties and other penetrations, and flashing to demonstrate surface preparation, crack and joint treatment, application of air barriers, and sealing of gaps, terminations, and penetrations of air-barrier assembly.

    a. Coordinate construction of mockups to permit inspection and testing of air barrier before external insulation and cladding are installed.
    b. Include junction with roofing membrane, building corner condition, and foundation wall intersection.

PART 2 - PRODUCTS

2.1 WEATHER BARRIER

A. A single-component, low VOC, 25 mil thick synthetic polymer fluid-applied product with superior elasticity and flexibility providing resistance to air flow, bulk water and wind-driven rain, yet allows moisture vapor to escape. Basis of Design: DuPont Tyvek Fluid Applied WB System.

B. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. DuPont Building Innovations

2.2 PERFORMANCE REQUIREMENTS

A. Air-Barrier Performance: Air-barrier assembly and seals with adjacent construction shall be capable of performing as a continuous air barrier. Air-barrier assemblies shall be capable of accommodating substrate movement and of sealing substrate expansion and control joints, construction material changes, penetrations, and transitions at perimeter conditions without deterioration and air leakage exceeding specified limits.

    1. Air-Barrier Assembly Air Leakage: Maximum 0.04 cfm/sq. ft. of surface area at 1.57 lbf/sq. ft., when tested according to ASTM E 2357.

    2. Air Permeance: Maximum 0.004 cfm/sq. ft. of surface area at 1.57-lbf/sq. ft. pressure difference; ASTM E 2178.

    3. Vapor Permeance: Minimum 10 perms; ASTM E 96/E 96M, Desiccant Method, Procedure A.

    4. Ultimate Elongation: Minimum 250 percent; ASTM D 412, Die C.

    5. Adhesion to Substrate: Minimum 30 lbf/sq. in. when tested according to ASTM D 4541.

6. Fire Propagation Characteristics: Passes NFPA 285 testing as part of an approved assembly.

7. UV Resistance: Can be exposed to sunlight for 270 days according to manufacturer's written instructions.

2.3 ACCESSORY MATERIALS

A. Requirement: Provide primers, transition strips, termination strips, joint reinforcing fabric and strips, joint sealants, counterflashing strips, flashing sheets and metal termination bars, termination mastic, substrate patching materials, adhesives, tapes, foam sealants, lap sealants, and other accessory materials that are recommended in writing by air-barrier manufacturer to produce a complete air-barrier assembly and that are compatible with primary air-barrier material and adjacent construction to which they may seal.

PART 3 - EXECUTION

3.1 SURFACE PREPARATION

A. Clean, prepare, treat, fill, and seal substrate and joints and cracks in substrate according to manufacturer's written instructions and details. Provide clean, dust-free, and dry substrate for air-barrier application.

B. Mask off adjoining surfaces not covered by air barrier to prevent spillage and overspray affecting other construction.

C. Remove fins, ridges, mortar, and other projections and fill honeycomb, aggregate pockets, holes, and other voids in concrete with substrate-patching material.

D. Remove excess mortar from masonry ties, shelf angles, and other obstructions.

E. At changes in substrate plane, apply sealant or termination mastic beads at sharp corners and edges to form a smooth transition from one plane to another.

F. Bridge isolation joints, expansion joints, and discontinuous wall-to-wall, deck-to-wall, and deck-to-deck joints with air-barrier accessory material that accommodates joint movement according to manufacturer's written instructions and details.

3.2 INSTALLATION

A. Install materials according to air-barrier manufacturer's written instructions and details to form a seal with adjacent construction and ensure continuity of air and water barrier.

1. Coordinate the installation of air barrier with installation of roofing membrane and base flashing to ensure continuity of air barrier with roofing membrane.

2. Install transition strip on roofing membrane or base flashing so that a minimum of 3 inches of coverage is achieved over each substrate.
3. Unless manufacturer recommends in writing against priming, apply primer to substrates at required rate and allow it to dry.
4. Apply primer to substrates at required rate and allow it to dry. Limit priming to areas that will be covered by air-barrier material on same day. Re-prime areas exposed for more than 24 hours.

B. Connect and seal exterior wall air-barrier material continuously to roofing-membrane air barrier, concrete below-grade structures, floor-to-floor construction, exterior glazing and window systems, glazed curtain-wall systems, storefront systems, exterior louvers, exterior door framing, and other construction used in exterior wall openings, using accessory materials.

C. Wall Openings: Prime concealed, perimeter frame surfaces of windows, curtain walls, storefronts, and doors. Apply transition strip so that a minimum of 3 inches of coverage is achieved over each substrate. Maintain 3 inches of full contact over firm bearing to perimeter frames, with not less than 1 inch of full contact.

D. Repair punctures, voids, and deficient lapped seams in strips and transition strips. Slit and flatten fishmouths and blisters. Patch with transition strips extending 6 inches beyond repaired areas in strip direction.

E. Medium-Build Air Barriers: Apply continuous unbroken air-barrier material to substrates according to the following thickness. Apply an increased thickness of air-barrier material in full contact around protrusions such as masonry ties.

1. Vapor-Permeable, Medium-Build Air Barrier: Total dry film thickness as recommended in writing by manufacturer to comply with performance requirements, applied in one coat. Apply additional material as needed to achieve void- and pinhole-free surface, but do not exceed thickness on which required vapor permeability is based.

a. Install fluid-applied weather barrier by power-rolling method (preferred), or by spray-and backrolling method, to achieve 25 mils providing a consistent and uniform thickness.

F. Do not cover air barrier until it has been tested and inspected by testing agency.

G. Correct deficiencies in or remove air barrier that does not comply with requirements; repair substrates and reapply air-barrier components.

3.3 CLEANING AND PROTECTION

A. Protect air-barrier system from damage during application and remainder of construction period, according to manufacturer's written instructions.

B. Remove masking materials after installation.

END OF SECTION 072726

SECTION 074113.16 - STANDING-SEAM METAL ROOF PANELS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes standing-seam metal roof panels.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: Include fabrication and installation layouts of metal panels; details of edge conditions, joints, panel profiles, corners, anchorages, attachment system, trim, flashings, closures, and accessories; and special details.

C. Samples: For each type of metal panel indicated.

1.4 INFORMATIONAL SUBMITTALS

A. Product test reports.

B. Warranties: Sample of special warranties.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

B. UL-Certified, Portable Roll-Forming Equipment: UL-certified, portable roll-forming equipment capable of producing metal panels warranted by manufacturer to be the same as factory-formed products. Maintain UL certification of portable roll-forming equipment for duration of work.

1.7 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of metal panel systems that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Two years from date of Substantial Completion.

B. Special Warranty on Panel Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace metal panels that show evidence of deterioration of factory-applied finishes within specified warranty period.

1. Finish Warranty Period: 20 years from date of Substantial Completion.

C. Special Weathertightness Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace standing-seam metal roof panel assemblies that fail to remain weathertight, including leaks, within specified warranty period.

1. Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Energy Performance: Provide roof panels that are listed on the EPA/DOE's ENERGY STAR "Roof Product List" for low-slope roof products.

B. Energy Performance: Provide roof panels according to one of the following when tested according to CRRC-1:

1. Three-year, aged solar reflectance of not less than 0.55 and emissivity of not less than 0.75.
2. Three-year, aged Solar Reflectance Index of not less than 64 when calculated according to ASTM E 1980.

C. Structural Performance: Provide metal panel systems capable of withstanding the effects of the following loads, based on testing according to ASTM E 1592:

1. Wind Loads: As indicated on Drawings.
2. Other Design Loads: As indicated on Structural Drawings.
3. Deflection Limits: For wind loads, no greater than 1/240 of the span.

D. Air Infiltration: Air leakage of not more than 0.06 cfm/sq. ft. when tested according to ASTM E 1680 or ASTM E 283 at the following test-pressure difference:

1. Test-Pressure Difference: 6.24 lbf/sq. ft..

E. Water Penetration under Static Pressure: No water penetration when tested according to ASTM E 1646 or ASTM E 331 at the following test-pressure difference:

1. Test-Pressure Difference: 6.24 lbf/sq. ft..

F. Hydrostatic-Head Resistance: No water penetration when tested according to ASTM E 2140.

G. Wind-Uplift Resistance: Provide metal roof panel assemblies that comply with UL 580 for wind-uplift-resistance class indicated.

1. Uplift Rating: UL 90.

H. FM Global Listing: Provide metal roof panels and component materials that comply with requirements in FM Global 4471 as part of a panel roofing system and that are listed in FM Global's "Approval Guide" for Class 1 or noncombustible construction, as applicable. Identify materials with FM Global markings.

1. Fire/Windstorm Classification: Class 1A- 105.
2. Hail Resistance: MH.

I. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

2.2 STANDING-SEAM METAL ROOF PANELS

A. General: Provide factory-formed metal roof panels designed to be installed by lapping and interconnecting raised side edges of adjacent panels with joint type indicated and mechanically attaching panels to supports using concealed clips in side laps. Include clips, cleats, pressure plates, and accessories required for weathertight installation.

1. Steel Panel Systems: Unless more stringent requirements are indicated, comply with ASTM E 1514.

B. Vertical-Rib, Snap-Joint, Standing-Seam Metal Roof Panels: Formed with vertical ribs at panel edges and a flat panel between ribs; designed for sequential installation by mechanically attaching panels to supports using concealed clips located under one side of panels, engaging opposite edge of adjacent panels, and snapping panels together.

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

a. Advanced Architectural Products.
b. AEP Span; A BlueScope Steel Company.
c. Architectural Building Components.
d. Architectural Metal Systems.
e. Berridge Manufacturing Company.

f. CENTRIA Architectural Systems.
g. Fabral.
h. Ryerson Tull, Inc.

2. Metallic-Coated Steel Sheet: Zinc-coated (galvanized) steel sheet complying with ASTM A 653/A 653M, G90 coating designation, or aluminum-zinc alloy-coated steel sheet complying with ASTM A 792/A 792M, Class AZ50 coating designation; structural quality. Prepainted by the coil-coating process to comply with ASTM A 755/A 755M.

   a. Nominal Thickness: 0.034 inch.
   b. Exterior Finish: Three-coat fluoropolymer.
   c. Color: As selected by Architect from manufacturer's full range.

3. Clips: One-piece fixed orTwo-piece floating to accommodate thermal movement.

   a. Material : 0.064-inch-nominal thickness, zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet.

4. Panel Coverage: 12 inches.
5. Panel Height: 1.5 inches.

2.3 RIDGE VENT

A. Material: Metal to match roof material.

B. Expanded Metal Support Screen: .050 inch (1.27 mm) Formed Aluminum

C. Continuous Z Brackets: 20ga G90 Galvanized Steel.

D. Vent System: Slope-to-Slope, Standing Seam Version

E. Performance:

1. Ventilation: Must meet the required net free air per linear foot (nfa/lf) as determined by the vented roof deck system and eave condition as indicated on the Drawings.

2. 20 Year, 120 mph Wind and Ventilation Warranty

2.4 UNDERLAYMENT MATERIALS

A. Self-Adhering, High-Temperature Underlayment: Provide self-adhering, cold-applied, sheet underlayment, a minimum of 30 mils thick, consisting of slip-resistant, polyethylene-film top surface laminated to a layer of butyl or SBS-modified asphalt adhesive, with release-paper backing. Provide primer when recommended by underlayment manufacturer.

1. Thermal Stability: Stable after testing at 240 deg F; ASTM D 1970.
2. Low-Temperature Flexibility: Passes after testing at minus 20 deg F; ASTM D 1970.
3. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Carlisle Residential; a division of Carlisle Construction Materials.
b. Drexel Metals.
c. Grace Construction Products; W.R. Grace & Co. -- Conn.

B. Felt Underlayment: ASTM D 226/D 22M, Type II (No. 30), asphalt-saturated organic felts.

C. Slip Sheet: Manufacturer's recommended slip sheet, of type required for application.

2.5 MISCELLANEOUS MATERIALS

A. Miscellaneous Metal Subframing and Furring: ASTM C 645; cold-formed, metallic-coated steel sheet, ASTM A 653/A 653M, G90 coating designation or ASTM A 792/A 792M, Class AZ50 coating designation unless otherwise indicated. Provide manufacturer's standard sections as required for support and alignment of metal panel system.

B. Panel Accessories: Provide components required for a complete, weathertight panel system including trim, copings, fasciae, mullions, sills, corner units, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal panels unless otherwise indicated.

1. Closures: Provide closures at eaves and ridges, fabricated of same metal as metal panels.
2. Backing Plates: Provide metal backing plates at panel end splices, fabricated from material recommended by manufacturer.
3. Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked, polyolefin-foam or closed-cell laminated polyethylene; minimum 1-inch-thick, flexible closure strips; cut or premolded to match metal panel profile. Provide closure strips where indicated or necessary to ensure weathertight construction.

C. Flashing and Trim: Provide flashing and trim formed from same material as metal panels as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, eaves, rakes, corners, bases, framed openings, ridges, fasciae, and fillers. Finish flashing and trim with same finish system as adjacent metal panels.

D. Gutters and Downspouts: Formed from same material as roof panels according to SMACNA's "Architectural Sheet Metal Manual." Finish to match roof fascia and rake trim.

E. Roof Curbs: Fabricated from same material as roof panels, 0.048-inch nominal thickness; with bottom of skirt profiled to match roof panel profiles and with welded top box and integral full-length cricket. Fabricate curb subframing of 0.060-inch-nominal thickness, angle-, C-, or Z-shaped steel sheet. Fabricate curb and subframing to withstand indicated loads of size and height indicated. Finish roof curbs to match metal roof panels.

F. Panel Fasteners: Self-tapping screws designed to withstand design loads.

G. Panel Sealants: Provide sealant type recommended by manufacturer that are compatible with panel materials, are nonstaining, and do not damage panel finish.

1. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene compound sealant tape with release-paper backing; 1/2 inch wide and 1/8 inch thick.
2. Joint Sealant: ASTM C 920; as recommended in writing by metal panel manufacturer.

3. Butyl-Rubber-Based, Solvent-Release Sealant: ASTM C 1311.

2.6 FABRICATION

A. General: Fabricate and finish metal panels and accessories at the factory, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and with dimensional and structural requirements.

B. On-Site Fabrication: Subject to compliance with requirements of this Section, metal panels may be fabricated on-site using UL-certified, portable roll-forming equipment if panels are of same profile and warranted by manufacturer to be equal to factory-formed panels. Fabricate according to equipment manufacturer's written instructions and to comply with details shown.

C. Provide panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of panel.

D. Fabricate metal panel joints with factory-installed captive gaskets or separator strips that provide a weathertight seal and prevent metal-to-metal contact, and that minimize noise from movements.

E. Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with manufacturer's recommendations and recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated.

2.7 FINISHES

A. Panels and Accessories:
1. Three-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in both color coat and clear topcoat.
2. Concealed Finish: White or light-colored acrylic or polyester backer finish.

PART 3 - EXECUTION

3.1 PREPARATION

A. Miscellaneous Supports: Install subframing, furring, and other miscellaneous panel support members and anchorages according to ASTM C 754 and metal panel manufacturer's written recommendations.

3.2 UNDERLAYMENT INSTALLATION

A. Self-Adhering Sheet Underlayment: Apply primer if required by manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation. Apply at locations indicated below, wrinkle free, in shingle fashion to shed water, and with end laps of not less than 6 inches staggered 24 inches between courses. Overlap side edges not less than 3-1/2

inches. Extend underlayment into gutter trough. Roll laps with roller. Cover underlayment within 14 days.

1. Apply over the entire roof surface.
2. Apply over the roof area indicated below:

    a. Roof perimeter for a distance up from eaves of 36 inches Insert dimension beyond interior wall line.
    b. Valleys, from lowest point to highest point, for a distance on each side of 18 inches. Overlap ends of sheets not less than 6 inches.
    c. Rake edges for a distance of 18 inches.
    d. Hips and ridges for a distance on each side of 12 inches.
    e. Roof-to-wall intersections for a distance from wall of 18 inches.
    f. Around dormers, chimneys, skylights, and other penetrating elements for a distance from element of 18 inches.

B. Felt Underlayment: Apply at locations indicated below, in shingle fashion to shed water, and with lapped joints of not less than 2 inches.

1. Apply over the entire roof surface.
2. Apply on roof not covered by self-adhering sheet underlayment. Lap over edges of self-adhering sheet underlayment not less than 3 inches, in shingle fashion to shed water.

C. Slip Sheet: Apply slip sheet over underlayment before installing metal roof panels.

D. Flashings: Install flashings to cover underlayment to comply with requirements specified in Section 076200 "Sheet Metal Flashing and Trim."

3.3 METAL PANEL INSTALLATION

A. Standing-Seam Metal Roof Panel Installation: Fasten metal roof panels to supports with concealed clips at each standing-seam joint at location, spacing, and with fasteners recommended in writing by manufacturer.

1. Install clips to supports with self-tapping fasteners.
2. Install pressure plates at locations indicated in manufacturer's written installation instructions.
3. Snap Joint: Nest standing seams and fasten together by interlocking and completely engaging factory-applied sealant.
4. Seamed Joint: Crimp standing seams with manufacturer-approved, motorized seamer tool so clip, metal roof panel, and factory-applied sealant are completely engaged.
5. Watertight Installation:

    a. Apply a continuous ribbon of sealant or tape to seal joints of metal panels, using sealant or tape as recommend in writing by manufacturer as needed to make panels watertight.
    b. Provide sealant or tape between panels and protruding equipment, vents, and accessories.
    c. At panel splices, nest panels with minimum 6-inch end lap, sealed with sealant and fastened together by interlocking clamping plates.

B. Accessory Installation: Install accessories with positive anchorage to building and weathertight mounting, and provide for thermal expansion. Coordinate installation with flashings and other components.

C. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.

3.4 CLEANING AND PROTECTION

A. Remove temporary protective coverings and strippable films, if any, as metal panels are installed, unless otherwise indicated in manufacturer's written installation instructions. On completion of metal panel installation, clean finished surfaces as recommended by metal panel manufacturer. Maintain in a clean condition during construction.

END OF SECTION 074113.16

SECTION 074646 - FIBER-CEMENT SIDING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Fiber-cement lap siding
2. Fiber-cement trim

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Samples: For fiber-cement siding and trim boards, including related accessories.

1. For each product specified, minimum 6" length x actual height, representing actual product, color and pattern.

1.3 INFORMATIONAL SUBMITTALS

A. Product certificates.

B. Product test reports.

C. Research/evaluation reports.

D. Sample warranty.

1.4 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Minimum of 2 years experience with installation of similar products.

B. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and to set quality standards for fabrication and installation.

1. Build mockup of typical wall area as shown on Drawings.
2. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.6 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace products that fail in materials or workmanship within specified warranty period.

1. Warranty Period: 25 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 FIBER-CEMENT SIDING

A. General: ASTM C 1186, Type A, Grade II, fiber-cement board, noncombustible when tested according to ASTM E 136; with a flame-spread index of 25 or less when tested according to ASTM E 84.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. CertainTeed Corporation.
b. GAF Materials Corporation.
c. James Hardie Building Products, Inc.
d. Nichiha Fiber Cement.

B. Labeling: Provide fiber-cement siding that is tested and labeled according to ASTM C 1186 by a qualified testing agency acceptable to authorities having jurisdiction.

C. Nominal Thickness: Not less than 5/16 inch.

D. Horizontal Pattern: Plank Board, 6-1/4"+/- wide with 5"+/- exposure.

1. Texture: Smooth

E. Factory Priming: Manufacturer's standard acrylic primer.

2.2 FIBER-CEMENT TRIM

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. CertainTeed Corporation.
b. GAF Materials Corporation.
c. James Hardie Building Products, Inc.
d. Nichiha Fiber Cement.

B. Nominal Thickness: Not less than 5/16 inch.

C. Nominal Sizes:

1. Height: 5-1/2"

2. Height: 3-1/2"

D. Texture: Smooth

E. Factory Priming: Manufacturer's standard acrylic primer.

2.3 ACCESSORIES

A. Siding Accessories, General: Provide starter strips, edge trim, outside and inside corner caps, and other items as recommended by siding manufacturer for building configuration.

B. Flashing: Provide aluminum flashing complying with Section 076200 "Sheet Metal Flashing and Trim" at window and door heads and where indicated.

1. Finish for Aluminum Flashing: High-performance organic finish.

C. Fasteners:

1. For fastening to wood, use siding nails of sufficient length to penetrate a minimum of 1 inch into substrate.
2. For fastening to metal, use ribbed bugle-head screws of sufficient length to penetrate a minimum of 1/4 inch, or three screw-threads, into substrate.
3. For fastening fiber cement, use hot-dip galvanized fasteners.

D. Continuous Soffit Vents: Aluminum, hat-channel shape.

1. Net-Free Area: 9 sq. in./linear ft..
2. Finish: White paint.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Comply with manufacturer's written installation instructions applicable to products and applications indicated unless more stringent requirements apply.

1. Install fasteners no more than 24 inches o.c.

B. Install joint sealants as specified in Section 079200 "Joint Sealants" and to produce a weathertight installation.

3.2 ADJUSTING AND CLEANING

A. Remove damaged, improperly installed, or otherwise defective materials and replace with new materials complying with specified requirements.

B. Clean finished surfaces according to manufacturer's written instructions and maintain in a clean condition during construction.

END OF SECTION 074646

SECTION 076200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Manufactured reglets with counterflashing.
2. Formed steep-slope roof sheet metal fabrications.
3. Formed wall sheet metal fabrications.

1.2 QUALITY ASSURANCE

A. Fabricator Qualifications: Employs skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.

1.3 WARRANTY

1. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. General: Sheet metal flashing and trim assemblies shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.

B. Sheet Metal Standard for Flashing and Trim: Comply with NRCA's "The NRCA Roofing Manual" and SMACNA's "Architectural Sheet Metal Manual" requirements for dimensions and profiles shown unless more stringent requirements are indicated.

2.2 SHEET METALS

A. General: Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.

B. Aluminum Sheet: ASTM B 209 alloy as standard with manufacturer for finish required, with temper as required to suit forming operations and performance required.

1. Color: As selected by Architect from manufacturer's full range.

C. Metallic-Coated Steel Sheet: Restricted flatness steel sheet, metallic coated by the hot-dip process and pre-painted by the coil-coating process to comply with ASTM A 755 / A755M.

1. Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653 / A 653M, G90 (Z275) coating designation; structural quality.

2. Surface: Manufacturer's standard clear acrylic coating on both sides.

3. Color: As selected by Architect from manufacturer's full range.

2.3 UNDERLAYMENT MATERIALS

A. Polyethylene Sheet: 6-mil thick polyethylene sheet complying with ASTM D 4397.

B. Slip Sheet: Rosin-sized building paper, 3 lb/100 sq. ft. minimum.

2.4 MISCELLANEOUS MATERIALS

A. General: Provide materials and types of fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and as recommended by manufacturer of primary sheet metal or manufactured item unless otherwise indicated.

B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal or manufactured item.

1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.

a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating. Provide metal-backed EPDM or PVC sealing washers under heads of exposed fasteners bearing on weather side of metal.
b. Blind Fasteners: High-strength aluminum or stainless-steel rivets suitable for metal being fastened.
c. Spikes and Ferrules: Same material as gutter; with spike with ferrule matching internal gutter width.

2. Fasteners for Aluminum Sheet: Aluminum or Series 300 stainless steel.

3. Fasteners for Stainless-Steel Sheet: Series 300 stainless steel.

4. Fasteners for Zinc-Coated (Galvanized) or Aluminum-Zinc Alloy-Coated Steel Sheet: Series 300 stainless steel or hot-dip galvanized steel according to ASTM A 153/A 153M or ASTM F 2329.

C. Solder:

1. For Stainless Steel: ASTM B 32, Grade Sn96, with acid flux of type recommended by stainless-steel sheet manufacturer.
2. For Zinc-Coated (Galvanized) Steel: ASTM B 32, Grade Sn50, 50 percent tin and 50 percent lead or Grade Sn60, 60 percent tin and 40 percent lead with maximum lead content of 0.2 percent.

D. Sealant Tape: Pressure-sensitive, 100 percent solids, grey polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch wide and 1/8 inch thick.

E. Elastomeric Sealant: ASTM C 920, elastomeric polymer sealant; low modulus; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.

F. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.

G. Epoxy Seam Sealer: Two-part, noncorrosive, aluminum seam-cementing compound, recommended by aluminum manufacturer for exterior nonmoving joints, including riveted joints.

H. Bituminous Coating: Cold-applied asphalt emulsion according to ASTM D 1187.

2.5 FABRICATION, GENERAL

A. General: Custom fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, geometry, metal thickness, and other characteristics of item required. Fabricate sheet metal flashing and trim in shop to greatest extent possible.

1. Obtain field measurements for accurate fit before shop fabrication.
2. Form sheet metal flashing and trim to fit substrates without excessive oil canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.
3. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view.

B. Expansion Provisions: Form metal for thermal expansion of exposed flashing and trim.

1. Where lapped expansion provisions cannot be used, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with butyl sealant concealed within joints.

C. Sealant Joints: Where movable, non-expansion type joints are required, form metal to provide for proper installation of elastomeric sealant according to cited sheet metal standard.

D. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.

E. Fabricate cleats and attachment devices of sizes as recommended by cited sheet metal standard for application, but not less than thickness of metal being secured.

F. Seams for metals being soldered: Remove painted, coated or lacquered finishes. Fabricate nonmoving seams with flat-lock seams. Tin edges to be seamed, form seams, and solder.

G. Seams for aluminum sheet and metals with painted, coated or lacquered finishes: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with elastomeric sealant unless otherwise recommended by sealant manufacturer for intended use. Rivet joints where necessary for strength.

2.6 STEEP-SLOPE ROOF SHEET METAL FABRICATIONS

A. Apron, Step, Cricket, and Backer Flashing: Fabricate from the following materials:

1. Galvanized Steel: 0.022 inch thick.

B. Valley Flashing: Fabricate from the following materials:

1. Galvanized Steel: 0.028 inch thick.

C. Drip Edges: Fabricate from the following materials:
1. Aluminum: 0.032 inch thick.

D. Eave, Rake, Ridge, and Hip Flashing: Fabricate from the following materials:

1. Aluminum: 0.032 inch thick.

2.7 WALL SHEET METAL FABRICATIONS

A. Through-Wall Flashing: Fabricate continuous flashings in minimum 96-inch-long, but not exceeding 12-foot-long, sections, under copings, and at shelf angles. Fabricate discontinuous lintel, sill, and similar flashings to extend 6 inches beyond each side of wall openings; and form with 2-inch-high, end dams. Fabricate from the following materials:

1. Stainless Steel: 0.016 inch thick.

B. Opening Flashings in Frame Construction: Fabricate head, sill, jamb, and similar flashings to extend 4 inches beyond wall openings. Form head and sill flashing with 2-inch-high, end dams. Fabricate from the following materials:

1. Aluminum: 0.032 inch thick.
2. Stainless Steel: 0.016 inch thick.
3. Galvanized Steel: 0.022 inch thick.

4. Aluminum-Zinc Alloy-Coated Steel: 0.022 inch thick.

C. Wall Expansion-Joint Cover: Fabricate from the following materials:

1. Aluminum: 0.040 inch thick.
2. Stainless Steel: 0.019 inch thick.
3. Galvanized Steel: 0.028 inch thick.
4. Aluminum-Zinc Alloy-Coated Steel: 0.028 inch thick.

PART 3 - EXECUTION

3.1 UNDERLAYMENT INSTALLATION

A. Polyethylene Sheet: Install polyethylene sheet with adhesive for anchorage. Apply in shingle fashion to shed water, with lapped and taped joints of not less than 2 inches.

3.2 INSTALLATION, GENERAL

A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement so that completed sheet metal flashing and trim shall not rattle, leak or loosen, and shall remain watertight. Use fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.

1. Install sheet metal flashing and trim true to line and levels indicated. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant.
2. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
3. Space cleats not more than 12 inches apart. Attach each cleat with at least two fasteners. Bend tabs over fasteners.
4. Install exposed sheet metal flashing and trim with limited oil-canning, and free of buckling and tool marks.
5. Install sealant tape where indicated.
6. Torch cutting of sheet metal flashing and trim is not permitted.

B. Metal Protection: Where dissimilar metals contact each other, or where metal contacts pressure-treated wood or other corrosive substrates, protect against galvanic action or corrosion by painting contact surfaces with bituminous coating or by other permanent separation as recommended by SMACNA sheet metal standard.

1. Coat concealed side of uncoated-aluminum and stainless-steel sheet metal flashing and trim with bituminous coating where flashing and trim contact wood, ferrous metal, or cementitious construction.

2. Underlayment: Where installing sheet metal flashing and trim directly on cementitious or wood substrates, install a course of felt underlayment and cover with a slip sheet, or install a course of polyethylene sheet.

C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at maximum of 10 feet, with no joints within 24 inches of corner or intersection.

1. Where lapped expansion joints cannot be used, or would not be sufficiently watertight, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with sealant concealed within joints.

D. Fasteners: Use fastener sizes that penetrate wood sheathing not less than 1-1/4 inches for nails, and not less than 3/4" for wood screws.

E. Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.

F. Seal joints as shown, and as required for watertight construction.

G. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pre-tin edges of sheets with solder to width of 1-1/2 inches; however, reduce pre-tinning where pre-tinned surface would show in completed Work.

1. Do not solder metallic-coated steel and aluminum sheet.
2. Do not use torches for soldering.
3. Heat surfaces to receive solder, and flow solder into joint. Fill joint completely. Completely remove flux and spatter from exposed surfaces.

H. Rivets: Rivet joints in uncoated aluminum where necessary for strength.

3.3 ROOF FLASHING INSTALLATION

A. General: Install sheet metal flashing and trim to comply with performance requirements, sheet metal manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual". Provide concealed fasteners where possible, and set units true to line and levels indicated. Install work with laps, joints, and seams that are permanently watertight and weather resistant.

B. Roof Edge Flashing: Anchor to resist uplift and outward forces according to recommendations in SMACNA's "Architectural Sheet Metal Manual", and as indicated. Interlock bottom edge of roof edge flashing with continuous cleat anchored to substrate at staggered 3-inch centers.

C. Copings: Anchor to resist uplift and outward forces according to recommendations in SMACNA's "Architectural Sheet Metal Manual", and as indicated.

1. Interlock exterior bottom edge of coping with continuous cleat anchored to substrate at 24-inch centers.

2. Anchor interior leg of coping with washers and screw fasteners through slotted holes at 24-inch centers.

3.4 CLEANING AND PROTECTION

A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.

B. Clean and neutralize flux materials. Clean off excess solder and sealants.

C. Clean off excess sealants.

D. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions.

END OF SECTION 076200

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SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Silicone joint sealants.
2. Urethane joint sealants.
3. Latex joint sealants.

1.2 ACTION SUBMITTALS

A. Product Data: For each joint-sealant product.

1.3 INFORMATIONAL SUBMITTALS

A. Sample warranties.

1.4 WARRANTY

A. Special Installer's Warranty: Manufacturer's standard form in which Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: Two (2) years from date of Substantial Completion.

B. B. Special Manufacturer's Warranty: Manufacturer's standard form in which joint-sealant manufacturer agrees to furnish joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: Twenty (20) years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 JOINT SEALANTS, GENERAL

A. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

2.2 URETHANE JOINT SEALANTS

A. Urethane, S, NS, 25, T, NT: Single-component, non-sag, plus 25 percent and minus 25 percent movement capability, urethane joint sealant; ASTM C 920, Type S (single component), Grade NS(non-sag), Class 25, Uses T and NT (traffic and non-traffic-use).

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. BASF Corporation; Construction Systems.

B. Urethane, S, P, 25, T, NT: Single-component, pourable, plus 25 percent and minus 25 percent movement capability, urethane joint sealant; ASTM C 920, Type S (single component), Grade P (pourable), Class 25, Uses T and NT (traffic and non-traffic use).

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. BASF Corporation; Construction Systems.
b. Pecora Corporation.
c. Polymeric Systems, Inc.

C. Urethane, M, NS, 25, T, NT: Multi-component, non-sag, plus 25 percent and minus 25 percent movement capability, urethane joint sealant; ASTM C 920, Type M (multi-component), Grade NS (non-sag), Class 25, Uses T and NT (traffic and non-traffic use).

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. BASF Corporation; Construction Systems.
b. Bostik, Inc.

D. Urethane, M, P, 25, T, NT: Multi-component, pourable, plus 25 percent and minus 25 percent movement capability, urethane joint sealant; ASTM C 920, Type M (multi-component), Grade P (pourable), Class 25, Uses T and NT (traffic and non-traffic use).

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. BASF Corporation; Construction Systems.
b. Pecora Corporation.
c. Sherwin-Williams Company (The).
d. Sika Corporation; Joint Sealants.

2.3 MILDEW-RESISTANT JOINT SEALANTS

A. Mildew-Resistant Joint Sealants: Formulated for prolonged exposure to humidity with fungicide to prevent mold and mildew growth.

B. Acrylic Latex: Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. BASF Corporation; Construction Systems.
b. May National Associates, Inc.; a subsidiary of Sika Corporation.
c. Pecora Corporation.
d. Sherwin-Williams Company (The).

2.4 JOINT-SEALANT BACKING

A. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin), Type B (bi-cellular material with a surface skin) or any of the preceding types, as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

B. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer.

2.5 MISCELLANEOUS MATERIALS

A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials.

C. Masking Tape: Non-staining, non-absorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:

1. Remove laitance and form-release agents from concrete.
2. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion.

B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.2 INSTALLATION OF JOINT SEALANTS

A. General: Comply with ASTM C 1193 and joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

1. Do not leave gaps between ends of sealant backings.
2. Do not stretch, twist, puncture or tear sealant backings.
3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.

C. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

D. Install sealants using proven techniques that comply with the following and at the same time backings are installed:

1. Place sealants so they directly contact and fully wet joint substrates.
2. Completely fill recesses in each joint configuration.
3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

E. Tooling of Non-sag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements below, to form smooth, uniform beads of configuration indicated. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.

1. Eliminate air pockets, and ensure contact and adhesion of sealant with sides of joint.
2. Remove excess sealant from surfaces adjacent to joints.
3. Provide concave joint profile per Figure 8A in ASTM C 1193 unless otherwise indicated.

F. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses. Use methods and cleaning materials approved in writing by the manufacturers of joint sealants and of products in which joints occur.

END OF SECTION 079200

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SECTION 081113 - HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes hollow-metal doors and frames.

1.2 DEFINITIONS

B. Minimum Thickness: Minimum thickness of base metal without coatings according to NAAMM-HMMA 803 or SDI A250.8.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: Include elevations, door edge details, frame profiles, metal thicknesses, preparations for hardware, and other details.

C. Samples for Initial Selection: For units with factory-applied color finishes.

D. Schedule: Prepared by or under the supervision of supplier, using same reference numbers for details and openings as those on Drawings.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Ceco Door; ASSA ABLOY.
2. Curries Company; ASSA ABLOY.
3. Republic Doors and Frames.
4. Steelcraft; an Allegion brand.

2.2 STANDARD HOLLOW METAL DOORS

A. General: Comply with ANSI/SDI A250.8.

1. Design: Flush panel.
2. Size: 36"W x 84"H

3. Thickness: 1-3/4"
4. Core Construction: Manufacturer's standard kraft-paper honeycomb, polystyrene, polyurethane, polyisocyanurate, mineral-board, or vertical steel-stiffener core.
   a. Thermal-Rated (Insulated) Doors: R-value of not less than 6.0 deg F x h x sq. ft./Btu (1.057 K x sq. m/W) when tested according to ASTM C 1363.
5. Vertical Edges for Single-Acting Doors: Manufacturer's standard.
6. Top and Bottom Edges: Closed with flush or inverted 0.042-inch- (1.0-mm-) thick, end closures or channels of same material as face sheets.
7. Tolerances: SDI 117, "Manufacturing Tolerances for Standard Steel Doors and Frames."

B. Exterior Doors: Face sheets fabricated from metallic-coated steel sheet. Comply with ANSI/SDI A250.8 for level and model and ANSI/SDI A250.4 for physical performance level:
   1. Level 2 and Physical Performance Level B (Heavy Duty), Model 1 (Full Flush).

C. Interior Doors: Face sheets fabricated from cold-rolled steel sheet unless metallic-coated sheet is indicated. Provide doors complying with requirements indicated below by referencing ANSI/SDI A250.8 for level and model and ANSI/SDI A250.4 for physical performance level:
   1. Level 2 and Physical Performance Level B (Heavy Duty), Model 1 (Full Flush).

D. Hardware Reinforcement: ANSI/SDI A250.6.

2.3 STANDARD HOLLOW METAL FRAMES

A. General: Comply with ANSI/SDI A250.8.
   1. Gauge: 16ga.

B. Exterior Frames: Fabricated from metallic-coated steel sheet.
   1. Fabricate frames with mitered or coped corners.
   2. Fabricate frames as full profile welded unless otherwise indicated.
   3. Frames for Level 2 Steel Doors: 0.053-inch- (1.3-mm-) thick steel sheet.

C. Interior Frames: Fabricated from cold-rolled steel sheet unless metallic-coated sheet is indicated.
   1. Fabricate frames with mitered or coped corners.
   2. Fabricate frames as full profile welded unless otherwise indicated.
   3. Frames for Level 2 Steel Doors: 0.053-inch- (1.3-mm-) thick steel sheet.

D. Hardware Reinforcement: ANSI/SDI A250.6.

2.4 FRAME ANCHORS

A. Jamb Anchors:

1. Masonry Type: Adjustable strap-and-stirrup or T-shaped anchors to suit frame size, not less than 0.042 inch thick, with corrugated or perforated straps not less than 2 inches wide by 10 inches long; or wire anchors not less than 0.177 inch thick.

B. Floor Anchors: Formed from same material as frames, minimum thickness of 0.042 inch, and as follows:

Monolithic Concrete Slabs: Clip-type anchors, with two holes to receive fasteners.

2.5 HOLLOW METAL PANELS

Provide hollow metal panels of same materials, construction, and finish as specified for adjoining hollow metal work.

2.6 STOPS AND MOLDINGS

A. Moldings for Glazed Lites in Doors: Minimum 0.032 inch thick, same material as door face sheet.

B. Fixed Frame Moldings: Formed integral with hollow metal frames, a minimum of 5/8 inch high unless otherwise indicated.

C. Loose Stops for Glazed Lites in Frames: Minimum 0.032 inch thick, same material as frames.

2.7 MATERIALS

A. Cold-Rolled Steel Sheet: ASTM A 1008 / A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.

B. Hot-Rolled Steel Sheet: ASTM A 1011 / A 1011M, Commercial Steel (CS), Type B.

C. Metallic-Coated Steel Sheet: ASTM A 653 / A 653M, Commercial Steel (CS), Type B; with minimum A40 (ZF120) metallic coating.

D. Frame Anchors: ASTM A 879 / A 879M, Commercial Steel (CS), 04Z coating designation; mill phosphatized.

1. For anchors built into exterior walls, steel sheet complying with ASTM A 1008 / A 1008M or ASTM A 1011 / A 1011M, hot-dip galvanized according to ASTM A 153 / A 153M, Class B.

E. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.

F. Power-Actuated Fasteners in Concrete: From corrosion-resistant materials.

G. Grout: ASTM C 476, except with a maximum slump of 4 inches, as measured according to ASTM C 143/C 143M.

H. Mineral-Fiber Insulation: ASTM C 665, Type I (blankets without membrane facing).

I. Glazing: Section 088000 "Glazing."

J. Bituminous Coating: Cold-applied asphalt mastic, compounded for 15-mil dry film thickness per coat.

2.8 FABRICATION

A. Fabricate hollow-metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for metal thickness. Where practical, fit and assemble units in manufacturer's plant. To ensure proper assembly at Project site, clearly identify work that cannot be permanently factory assembled before shipment.

B. Hollow-Metal Doors:

1. Exterior Doors: Provide weep-hole openings in bottoms of exterior doors to permit moisture to escape. Seal joints in top edges of doors against water penetration.
2. Astragals: Provide overlapping astragal on one leaf of pairs of doors where required by NFPA 80 for fire-performance rating or where indicated.

C. Hollow-Metal Frames: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.

1. Welded Frames: Weld flush face joints continuously; grind, fill, dress, and make smooth, flush and invisible.
2. Sidelite and Transom Bar Frames: Provide closed tubular members with no visible face seams or joints, fabricated from same material as door frame. Fasten members at crossings and to jambs by butt welding.
3. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
4. Grout Guards: Weld guards to frame at back of hardware mortises in frames to be grouted.
5. Floor Anchors: Weld anchors to bottoms of jambs with at least four spot welds per anchor.
6. Jamb Anchors: Provide number and spacing of anchors as follows:

    a. Masonry Type: Locate anchors not more than 16 inches from top and bottom of frame. Space anchors not more than 32 inches o.c., to match coursing, and as follows:

        1) Two anchors per jamb up to 60 inches high.
        2) Three anchors per jamb from 60 to 90 inches high.
        3) Four anchors per jamb from 90 to 120 inches high.

4) Four anchors per jamb plus one additional anchor per jamb for each 24 inches or fraction thereof above 120 inches high.

7. Door Silencers: Except on weather-stripped frames, drill stops to receive door silencers.

a. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.
b. Double-Door Frames: Drill stop in head jamb to receive two door silencers.

D. Hardware Preparation: Factory prepare hollow-metal work to receive templated mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to SDI A250.6, the Door Hardware Schedule, and templates.

1. Located hardware as indicated, or if not indicated, according to ANSI/SDI A 250.8.

2. Reinforce doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.
3. Comply with applicable requirements in SDI A250.6 and BHMA A156.115 for preparation of hollow-metal work for hardware.

E. Stops and Moldings: Provide stops and moldings around glazed lites and louvers where indicated. Form corners of stops and moldings with butted or mitered hairline joints.

1. Single Glazed Lites: Provide fixed stops and moldings welded on secure side of hollow-metal work.
2. Multiple Glazed Lites: Provide fixed and removable stops and moldings so that each glazed lite is capable of being removed independently.
3. Provide fixed frame moldings on outside of exterior and on secure side of interior doors and frames.
4. Provide loose stops and moldings on inside of hollow-metal work.
5. Coordinate rabbet width between fixed and removable stops with glazing and installation types indicated.

2.9 STEEL FINISHES

A. Prime Finish: Doors and frames to be cleaned, and chemically treated to insure maximum finish paint adhesion. Surfaces of the door and frame exposed to view to receive a factory applied coat of rust inhibiting shop primer.

1. Shop Primer: Manufacturer's standard, fast-curing, lead and chromate free primer complying with ANSI/SDI A250.10 acceptance criteria; recommended by primer manufacturer for substrate; compatible with substrate and field-applied coatings despite prolonged exposure.

2.10 ACCESSORIES

A. Grout Guards: Formed from same material as frames, not less than 0.016 inch thick.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Hollow-Metal Frames: Install hollow-metal frames for doors, transoms, sidelites, borrowed lites, and other openings, of size and profile indicated. Comply with SDI A250.11 or NAAMM-HMMA 840 as required by standards specified.

1. Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces, leaving surfaces smooth and undamaged.

   a. At fire-rated openings, install frames according to NFPA 80.
   b. Where frames are fabricated in sections because of shipping or handling limitations, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces.
   c. Install frames with removable glazing stops located on secure side of opening.
   d. Install door silencers in frames before grouting.
   e. Remove temporary braces necessary for installation only after frames have been properly set and secured.
   f. Check plumb, square, and twist of frames as walls are constructed. Shim as necessary to comply with installation tolerances.
   g. Field apply bituminous coating to backs of frames that will be filled with grout containing anti-freezing agents.

2. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with post-installed expansion anchors.

   a. Floor anchors may be set with power-actuated fasteners instead of post-installed expansion anchors if so indicated and approved on Shop Drawings.

3. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with grout.

4. Installation Tolerances: Adjust hollow-metal door frames for squareness, alignment, twist, and plumb to the following tolerances:

   a. Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
   b. Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of wall.
   c. Twist: Plus or minus 1/16 inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
   d. Plumbness: Plus or minus 1/16 inch, measured at jambs at floor.

B. Hollow-Metal Doors: Fit hollow-metal doors accurately in frames, within clearances specified below. Shim as necessary.

1. Non-Fire-Rated Steel Doors:

   a. Between Door and Frame Jambs and Head: 1/8 inch plus or minus 1/16 inch.
   b. Between Edges of Pairs of Doors: 1/8 inch to 1/4 inch plus or minus 1/16 inch.
   c. Between Bottom of Door and top of Threshold: Maximum 3/8 inch.
   d. Between Bottom of Door and Top of Finish Floor (No Threshold): Maximum 3/4 inch.
   e. Between Door Face and Stop: 1/16 inch to 1/8 inch plus or minus 1/32 inch.

2. Fire-Rated Doors: Install doors with clearances according to NFPA 80.
3. Smoke-Control Doors: Install doors and gaskets according to NFPA 105.

C. Glazing: Comply with installation requirements in Section 088000 "Glazing" and with hollow-metal manufacturer's written instructions.

1. Secure stops with countersunk flat or oval-head machine screws spaced uniformly not more than 9 inches o.c. and not more than 2 inches o.c. from each corner.

3.2 ADJUSTING AND CLEANING

A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including hollow-metal work that is warped, bowed, or otherwise unacceptable.

B. Remove grout and other bonding material from hollow-metal work immediately after installation.

C. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying, rust-inhibitive primer.

D. Metallic-Coated Surface Touchup: Clean abraded areas and repair with galvanizing repair paint according to manufacturer's written instructions.

E. Touchup Painting: Cleaning and touchup painting of abraded areas of paint are specified in painting Sections.

END OF SECTION 081113

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SECTION 087100 - DOOR HARDWARE

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Mechanical door hardware for the following:

a. Swinging doors.

B. See Section 081113 for astragals and door silencers.

1.2 SUBMITTALS

A. Action Submittals.

1. Door Hardware Sets Schedule: Prepared by or under the supervision of Architectural Hardware Consultant, detailing fabrication and assembly of door hardware, as well as procedures and diagrams.

a. Format: Use the same scheduling sequence and format and use same door numbers as in the Contract Documents.

b. Content: Include the following information:

1) Identification number, location, hand, fire rating and material finish of each door and frame.

2) Type, style, function, size, quantity and finish of each door hardware item. Include description and function of each lockset and exit device.

3) Complete designations of every item required for each door opening including name and manufacturer.

4) Description of each electrified door hardware function, including location, sequence of operation, and interface with other building control systems.

2. Samples: For each exposed product in each finish specified.

1.3 QUALITY ASSURANCE

A. Installer Qualifications: Supplier of products and an employer of workers trained and approved by product manufacturers and of an Architectural Hardware Consultant who is available during the course of the Work to consult Contractor, Architect, and Owner about door hardware and keying.

1. Scheduling Responsibility: Preparation of door hardware and keying schedule.
2. Engineering Responsibility: Preparation of data for electrified door hardware, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.

B. Architectural Hardware Consultant Qualifications: A person who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project, and who is currently certified by DHI as an Architectural Hardware Consultant (AHC).

1.4 COORDINATION

A. Templates: Distribute door hardware templates for doors, frames, and other work specified to be factory prepared for installing door hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

1.5 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Three years from date of Substantial Completion unless otherwise indicated below:

a. Manual Closers: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

A. General: Provide products for each door that comply with requirements indicated in this Section, and door hardware sets indicated in Part 3.

1. Door Hardware Sets: Provide quantity, item, size finish or color indicated, and products equivalent in function and comparable in quality to named products.

B. Designations: Requirements for design, grade, function, finish, size and other distinctive qualities of each type of door hardware are indicated in Part 3. Products are identified by using door hardware designations, as follows:

1. Named Manufacturer's Products: Manufacturer and product designation are listed for each door hardware type required for the purpose of establishing minimum requirements. Manufacturer's names are abbreviated in Part 3.

2.2 HINGES, GENERAL

A. Template Requirements: Except for hinges and pivots to be installed entirely (both leaves) into wood doors and frames, provide only template-produced units.

B. Hinge Base Metal: Unless otherwise indicated, provide the following:

1. Exterior Hinges: Stainless steel, with stainless-steel pin.
2. Interior Hinges: Stainless steel, with stainless-steel pin.

C. Non-removable Pins: Provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for outswinging exterior doors.

D. Fasteners: Comply with the following:

1. Machine Screws: For metal doors and frames. Install into drilled and tapped holes.
2. Screws: Phillips flat-head; machine screws (drilled and tapped holes) for metal doors. Finish screw heads to match surface of hinges.

2.3 HINGES

A. Butts and Hinges: BHMA A156.1.

B. Template Hinge Dimensions: BHMA A156.7.

C. Available Manufacturers:

1. Baldwin Hardware Corporation (BH).
2. Hager Companies (HAG).
3. Lawrence Brothers, Inc. (LB).
4. McKinney Products Company; an ASSA ABLOY Group company (MCK).
5. Stanley Commercial Hardware; Div. of The Stanley Works (STH).

2.4 LOCKS AND LATCHES, GENERAL

A. Accessibility Requirements: Provide operating devices that do not require tight grasping, pinching, or twisting of the wrist and that operate with a force of not more than 5 lbf (22 N).

B. Latches and Locks for Means of Egress Doors: Comply with NFPA 101. Latches shall not require more than 15 lbf (67 N) to release the latch. Locks shall not require use of a key, tool, or special knowledge for operation.

C. Lock Trim:

1. Levers: D Series Rhodes by Schlage
2. Dummy Trim: Match lever lock trim and escutcheons.

D. Backset: 2-3/4 inches (70 mm), unless otherwise indicated.

E. Strikes: Manufacturer's standard strike with strike box for each latchbolt or lock bolt, with curved lip extended to protect frame, finished to match door hardware set.

2.5 MECHANICAL LOCKS AND LATCHES

A. Lock Functions: Function numbers and descriptions indicated in door hardware sets comply with the following:

1. Bored Locks: BHMA A156.2.

B. Bored Locks: BHMA A156.2, Grade 1; Series 4000.

1. Available Manufacturers:
   a. Best Access Systems; Div. of The Stanley Works (BAS).
   b. Corbin Russwin Architectural Hardware; an ASSA ABLOY Group company (CR).
   c. Falcon Lock; an Ingersoll-Rand Company (FAL).
   d. SARGENT Manufacturing Company; an ASSA ABLOY Group company (SGT).
   e. Schlage Commercial Lock Division; an Ingersoll-Rand Company (SCH).
   f. Yale Commercial Locks and Hardware; an ASSA ABLOY Group company (YAL).

2.6 DOOR BOLTS

A. Bolt Throw: Comply with testing requirements for length of bolts required for labeled fire doors.

B. Dustproof Strikes: BHMA A156.16, Grade 1.

C. Manual Flush Bolts: BHMA A156.16, Grade 1; designed for mortising into door edge.

1. Available Manufacturers:
   a. Adams Rite Manufacturing Co. (ARM).
   b. Burns Manufacturing Incorporated (BM).
   c. Don-Jo Mfg., Inc. (DJO).
   d. Glynn-Johnson; an Ingersoll-Rand Company (GJ).

e. Hager Companies (HAG).

f. IVES Hardware; an Ingersoll-Rand Company (IVS).

g. Stanley Commercial Hardware; Div. of The Stanley Works (STH).

2.7 LOCK CYLINDERS

A. Standard Lock Cylinders: BHMA A156.5, Grade 1.

B. Cylinders: Manufacturer's standard tumbler type, constructed from brass or bronze, stainless steel, or nickel silver, and complying with the following:

1. Number of Pins: Six

C. Permanent Cores: Manufacturer's standard; finish face to match lockset; with removable cores.

D. Construction Keying: Comply with the following:

1. Construction Cores : Provide construction cores that are replaceable by permanent cores. Provide 10 construction master keys.

a. Furnish permanent cores to Owner for installation.

E. Manufacturer: Same manufacturer as for locks and latches.

2.8 KEYING

A. Keying System: Factory registered, complying with guidelines in BHMA A156.28, Appedix A. Incorporate decisions made in keying conference into master key system.

1. Existing System: Master key or grand master key locks to Owner's existing system.

B. Keys: Nickel silver.

2.9 ACCESSORIES FOR PAIRS OF DOORS

A. Carry-Open Bars: Provide carry-open bars for inactive leaves of pairs of doors unless automatic or self-latching bolts are used.

1. Material: Polished brass or bronze, with strike plate.

2.10 CLOSERS

A. Accessibility Requirements: Comply with the following maximum opening-force requirements:

1. Interior, Non-Fire-Rated Hinged Doors: 5 lbf (22.2 N) applied perpendicular to door.

B. Door Closers for Means of Egress Doors: Comply with NFPA 101. Door closers shall not require more than 30 lbf (133 N) to set door in motion and not more than 15 lbf (67 N) to open door to minimum required width.

C. Size of Units: Unless otherwise indicated, comply with manufacturer's written recommendations for size of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Provide factory-sized closers, adjustable to meet field conditions and requirements for opening force.

D. Surface Closers: BHMA A156.4, Grade 1. Provide type of arm required for closer to be located on non-public side of door, unless otherwise indicated.

1. Available Manufacturers:
   a. Arrow USA; an ASSA ABLOY Group company (ARW).
   b. Corbin Russwin Architectural Hardware; an ASSA ABLOY Group company (CR).
   c. DORMA Architectural Hardware; Member of The DORMA Group North America (DAH).
   d. Dor-O-Matic; an Ingersoll-Rand Company (DOR).
   e. LCN Closers; an Ingersoll-Rand Company (LCN).
   f. Norton Door Controls; an ASSA ABLOY Group company (NDC).
   g. Rixson Specialty Door Controls; an ASSA ABLOY Group company (RIX).
   h. SARGENT Manufacturing Company; an ASSA ABLOY Group company (SGT).
   i. Yale Commercial Locks and Hardware; an ASSA ABLOY Group company (YAL).

E. Coordinators: BHMA A156.3

2.11 PROTECTIVE TRIM UNITS

A. Size: 1-1/2 inches (38 mm) less than door width on push side and 1/2 inch (13 mm) less than door width on pull side, by height specified in door hardware sets.

B. Metal Protective Trim Units: BHMA A156.6; beveled top and 2 sides; fabricated from the following material:

1. Material: 0.050-inch- (1.3-mm-) thick stainless steel.
2. Available Manufacturers:
   a. American Floor Products Co., Inc. (AFP).
   b. Baldwin Hardware Corporation (BH).
   c. Don-Jo Mfg., Inc. (DJO).
   d. Hager Companies (HAG).
   e. IPC Door and Wall Protection Systems, Inc.; Div. of InPro Corporation (IPC).
   f. IVES Hardware; an Ingersoll-Rand Company (IVS).

2.12 STOPS AND HOLDERS

A. Stops and Bumpers: BHMA A156.16, Grade 1.

1. Provide floor stops for doors unless wall or other type stops are scheduled or indicated. Do not mount floor stops where they will impede traffic. Where floor or wall stops are not appropriate, provide overhead holders.

B. Mechanical Door Holders: BHMA A156.16, Grade 1.

C. Combination Overhead Stops and Holders: BHMA A156.8, Grade 1.

D. Available Manufacturers:

1. Architectural Builders Hardware Mfg., Inc. (ABH).
2. Baldwin Hardware Corporation (BH).
3. Don-Jo Mfg., Inc. (DJO).
4. Dor-O-Matic; an Ingersoll-Rand Company (DOR).
5. Glynn-Johnson; an Ingersoll-Rand Company (GJ).
6. Hager Companies (HAG).
7. IVES Hardware; an Ingersoll-Rand Company (IVS).
8. Rixson Specialty Door Controls; an ASSA ABLOY Group company (RIX).
9. Stanley Commercial Hardware; Div. of The Stanley Works (STH).

2.13 DOOR GASKETING

A. Standard: BHMA A156.22

B. General: Provide continuous weather-strip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated or scheduled. Provide noncorrosive fasteners for exterior applications and elsewhere as indicated.

1. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.
2. Door Bottoms: Apply to bottom of door, forming seal with threshold when door is closed.

C. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.

D. Gasketing Materials: ASTM D 2000 and AAMA 701/702

E. Available Manufacturers:

1. Hager Companies (HAG).
2. M-D Building Products, Inc. (MD).

3. National Guard Products (NGP).
4. Pemko Manufacturing Co. (PEM).
5. Sealeze; a unit of Jason Incorporated (SEL).
6. Zero International (ZRO).

2.14 THRESHOLDS

A. Standard: BHMA A156.21

B. Accessibility Requirements: Bevel raised thresholds with a slope of not more than 1:2. Provide thresholds not more than 1/2 inch (13 mm) high.

C. Thresholds for Means of Egress Doors: Comply with NFPA 101. Maximum 1/2 inch (13 mm) high.

D. Available Manufacturers:

1. Hager Companies (HAG).
2. M-D Building Products, Inc. (MD).
3. National Guard Products (NGP).
4. Pemko Manufacturing Co. (PEM).
5. Sealeze; a unit of Jason Incorporated (SEL).
6. Zero International (ZRO).

2.15 FABRICATION

A. Base Metals: Produce door hardware units of base metal, fabricated by forming method indicated, using manufacturer's standard metal alloy, composition, temper, and hardness. Furnish metals of a quality equal to or greater than that of specified door hardware units and BHMA A156.18. Do not furnish manufacturer's standard materials or forming methods if different from specified standard.

B. Fasteners: Provide screws according to commercially recognized industry standards for application intended, except aluminum fasteners are not permitted. Provide Phillips flat-head screws with finished heads to match surface of door hardware, unless otherwise indicated.

1. Comply with NFPA 80 for fasteners of door hardware in fire-rated applications.

C. Finishes: BHMA A156.18, as indicated in door hardware sets.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Steel Doors and Frames: Comply with DHI A115 Series. Drill and tap doors and frames for surface-applied door hardware according to ANSI A250.6.

B. Mounting Heights: Mount door hardware units at heights indicated as follows unless otherwise indicated or required to comply with governing regulations.

1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."

C. Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 09 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.

D. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 07 Section "Joint Sealants."

E. Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

1. Spring Hinges: Adjust to achieve positive latching when door is allowed to close freely from an open position of 30 degrees.

2. Door Closers: Unless otherwise required by authorities having jurisdiction, adjust sweep period so that, from an open position of 70 degrees, the door will take at least 3 seconds to move to a point 3 inches (75 mm) from the latch, measured to the leading edge of the door.

3.2 FIELD QUALITY CONTROL

A. Independent Architectural Hardware Consultant: Owner will engage a qualified independent Architectural Hardware Consultant to perform inspections and to prepare inspection reports.

3.2 DOOR HARDWARE SCHEDULE

A. Door Hardware Set No. **EXT-1**: Exterior Doors
Door Locations: Janitor/Storage
Elec. Panel Room
Provide each door with the following:

Item	Description	Man.	Finish
3Ea	Hinges	HAG	626
1Ea	Cylindrical lockset	SCH	626
1Ea	Surface Mtd. Closer with Overhead Stop	LCN	689
1Set	Weatherstripping	PEM	

B. Door Hardware Set No. **TO-1-P**: Rest Room Doors
Door Locations: Mens Restroom
Womens Restroom
Provide each door with the following:

Item	Description	Man.	Finish
3Ea	Hinges	HAG	626
1Ea	Deadbolt Lock, Cylinder x Plate Deadlock	SCH	626
1Ea	Surface Mtd. Closer with Overhead Stop	LCN	689
1Ea	Pull Handle w/ Mounting Plate	IVE	US26D
1Ea	Push plate	IVE	US26D
1Set	Weatherstripping	PEM	

END OF SECTION 087100

SECTION 089119 - FIXED LOUVERS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes fixed, extruded-aluminum wall louvers.

B. Related Requirements:
   1. Section 081113 "Hollow Metal Doors and Frames" for louvers in hollow-metal doors.
   2. Section 081416 "Flush Wood Doors" for louvers in flush wood doors.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.
   1. For louvers specified to bear AMCA seal, include printed catalog pages showing specified models with appropriate AMCA Certified Ratings Seals.

B. Shop Drawings: For louvers and accessories. Include plans, elevations, sections, details, and attachments to other work. Show frame profiles and blade profiles, angles, and spacing.

C. Samples: For each type of metal finish required.

D. Delegated-Design Submittal: For louvers indicated to comply with structural performance requirements, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.3 INFORMATIONAL SUBMITTALS

A. Product Test Reports: Based on tests performed according to AMCA 500-L.

B. Windborne-debris-impact-resistance test reports.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Structural Performance: Louvers shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated without permanent deformation of louver components, noise or metal fatigue caused by louver-blade rattle or flutter, or permanent damage to fasteners and anchors. Wind pressures shall be considered to act normal to the face of the building.

   1. Wind Loads: Determine loads based on a uniform pressure of 30 lb./sq. ft. (1435 Pa), acting inward or outward.

B. Seismic Performance: Louvers, including attachments to other construction, shall withstand the effects of earthquake motions determined according to loads indicated on structural drawings.
   1. Design earthquake spectral response acceleration, short period (Sds) for Project is indicated on structural drawings.
   2. Component Importance Factor: 1.0.

C. Louvre Performance Ratings: Provide louvers, complying with requirements specified, as demonstrated by testing manufacturer's stock units identical to those provided, except for length and width according to AMCA 500-L.

2.2 FIXED, EXTRUDED-ALUMINUM LOUVERS

A. Horizontal, Non-drainable-Blade Louver:
   1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

      a. Architectural Louvers; Harray, LLC.
   2. Louver Depth: 2 inches.
   3. Overall Diameter: 24"
   4. Blade Profile: Plain blade without center baffle.
   5. Frame and Blade Nominal Thickness: Not less than 0.060 inch for blades and frames.
   6. AMCA Seal: Mark units with AMCA Certified Ratings Seal.
   7. Louvre Performance Ratings:

      a. Free Area: Not less than 7.79 sq. ft. (0.72 sq. m) for 48-inch- (1220-mm-) wide by 48-inch- (1220-mm-) high louver.
      b. Point of Beginning Water Penetration: Not less than 725 fpm (3.68 m/s).
      c. Air Performance: Not more than 0.10-inch wg (25-Pa) static pressure drop at 800 fpm (4.1-m/s) free-area velocity.

2.3 LOUVER SCREENS

A. General: Provide screen at each exterior louver.
   1. Screen Location for Fixed Louvers: Interior face.
   2. Screening Type: Bird screening.

B. Louver Screen Frames: Same type and form of metal as indicated for louver to which screens are attached.

C. Louver Screening for Aluminum Louvers:
   1. Bird Screening: Flattened, expanded aluminum, 3/4 by 0.050 inch thick.

2.4 MATERIALS

A. Aluminum Extrusions: ASTM B 221, Alloy 6063-T5, T-52, or T6.

B. Fasteners: Use types and sizes to suit unit installation conditions.

1. Use tamper-resistant screws for exposed fasteners unless otherwise indicated.
2. For fastening aluminum, use aluminum or 300 series stainless-steel fasteners.
3. For color-finished louvers, use fasteners with heads that match color of louvers.

2.5 FABRICATION

A. Fabricate frames, including integral sills, to fit in openings of sizes indicated, with allowances made for fabrication and installation tolerances, adjoining material tolerances, and perimeter sealant joints.

B. Join frame members to each other and to fixed louver blades with fillet welds concealed from view, threaded fasteners, or both, as standard with louver manufacturer unless otherwise indicated or size of louver assembly makes bolted connections between frame members necessary.

2.6 ALUMINUM FINISHES

A. High-Performance Organic Finish: 3-coat fluoropolymer finish complying with AAMA 2605 and containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pre-treat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

1. Color and Gloss: As selected by Architect from manufacturer's full range.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Locate and place louvers level, plumb, and at indicated alignment with adjacent work.

B. Use concealed anchorages where possible. Provide brass or lead washers fitted to screws where required to protect metal surfaces and to make a weather-tight connection.

C. Provide perimeter reveals and openings of uniform width for sealants and joint fillers, as indicated.

D. Repair damaged finishes so no evidence remains of corrective work. Return items that cannot be refinished in the field to the factory and refinish entire unit or provide new units.

E. Protect unpainted galvanized and nonferrous-metal surfaces that are in contact with concrete, masonry, or dissimilar metals from corrosion and galvanic action by applying a heavy coating of bituminous paint or by separating surfaces with waterproof gaskets or nonmetallic flashing.

END OF SECTION 089119

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SECTION 099113 - EXTERIOR PAINTING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes surface preparation and the application of paint systems on the following exterior substrates:

1. Fiber-Cement Board & Trim
2. Wood & Plywood

1.2 DEFINITIONS

A. MPI Gloss Level 4 ("Satin"): 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.

1. Use For Fiber-Cement Board Siding

B. MPI Gloss Level 5 ("Semi-Gloss): 35 to 70 units at 60 degrees, according to ASTM D 523.

1. Use For Fiber-Cement Board Trim
2. Use For Plywood Soffit Surfaces

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product. Include preparation requirements and application instructions.

1. Include printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.

B. Samples: For each type of paint system and each color and gloss of topcoat.

1.4 QUALITY ASSURANCE

A. Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Architect will select one surface to represent surfaces and conditions for application of each paint system.

a. Vertical and Horizontal Surfaces: Provide samples of at least 10 sq. ft.

b. Other Items: Architect will designate items or areas required.

2. Final approval of color selections will be based on mockups.

a. If preliminary color selections are not approved, apply additional mockups of additional colors selected by Architect at no added cost to Owner.

1.5 EXTRA MATERIALS

A. Furnish extra materials described below that are from same production run (batch mix) as materials applied and that are packaged for storage and identified with labels describing contents.

1. Quantity: Furnish an additional 5 percent, but not less than 1 gal. of each material and color applied.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Benjamin Moore & Co.
2. PPG Architectural Coatings.
3. Sherwin-Williams Company (The).

2.2 PAINT, GENERAL

A. MPI Standards: Products shall comply with MPI standards indicated and shall be listed in its "MPI Approved Products Lists."

B. Material Compatibility:

1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.

C. Colors: As selected by Architect from manufacturer's full range.

2.3 PRIMERS/SEALERS

A. Bonding Primer (Water Based): MPI#17

B. Exterior Latex Wood Primer: MPI#6

C. Wood-Knot Sealer: Sealer recommended in writing by topcoat manufacturer for use in paint system indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:

1. Fiber-Cement Board: 12 percent.
2. Wood: 15 percent.

C. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

D. Proceed with coating application only after unsatisfactory conditions have been corrected.

1. Application of coating indicates Contractor's acceptance of surfaces, substrates and conditions.

3.2 PREPARATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.

B. Clean substrates of substances that could impair bond of paints, including dirt, oil, grease, and incompatible paints and encapsulants.

B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection.

3.3 APPLICATION

A. Apply paints according to manufacturer's written instructions and recommendations in "MPI Manual."

B. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

3.4 CLEANING AND PROTECTION

A. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

B. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.5 EXTERIOR PAINTING SCHEDULE

A. Cement Board Substrates:

1. Latex System MPI EXT 3.3A - For Use On Trim Only:

a. Prime Coat: Latex, exterior, matching topcoat.
b. Intermediate Coat: Latex, exterior, matching topcoat.
c. Topcoat: Latex, exterior, semi-gloss (MPI Gloss Level 5), MPI #11.

2. Latex System MPI EXT 3.3A - For Use On Siding Only:

a. Prime Coat: Latex, exterior, matching topcoat.
b. Intermediate Coat: Latex, exterior, matching topcoat.
c. Topcoat: Latex, exterior, satin (MPI Gloss Level 4), MPI #15.

B. Wood Substrates: Wood-based panel products.

1. Latex over Latex Primer System, MPI EXT 6.4K:

a. Prime Coat: Primer, latex for exterior wood, MPI #6.
b. Intermediate Coat: Latex, exterior, matching topcoat.
c. Topcoat: Latex, exterior, semi-gloss (MPI Gloss Level 5), MPI #11.

END OF SECTION 099113

SECTION 099123 - INTERIOR PAINTING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes surface preparation and the application of paint systems on the following interior substrates:

1. Wood/Plywood
2. Hollow-Metal Doors & Frames (Factory-Primed)

1.2 DEFINITIONS

A. MPI Gloss Level 1(matte/flat): Not more than five units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.

1. Use For Plywood Ceilings
2. Use for Wood Trim

B. MPI Gloss Level 5 ("Semi-Gloss): 35 to 70 units at 60 degrees, according to ASTM D 523.

1. Use For Hollow-Metal Doors & Frames

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product. Include preparation requirements and application instructions.

1. Include Printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.

B. Samples: For each type of paint system and in each color and gloss of topcoat.

1.4 QUALITY ASSURANCE

A. Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Architect will select one surface to represent surfaces and conditions for application of each paint system.

a. Vertical and Horizontal Surfaces: Provide samples of at least 10 sq. ft.

b. Other Items: Architect will designate items or areas required.

2. Final approval of color selections will be based on mockups.

a. If preliminary color selections are not approved, apply additional mockups of additional colors selected by Architect at no added cost to Owner.

1.5 EXTRA MATERIALS

A. Furnish extra materials described below that are from same production run (batch mix) as materials applied and that are packaged for storage and identified with labels describing contents.

1. Quantity: Furnish an additional 5 percent, but not less than 1 gal. of each material and color applied.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Benjamin Moore & Co.
2. PPG Architectural Coatings.
3. Sherwin-Williams Company (The).

2.2 PAINT, GENERAL

A. MPI Standards: Products shall comply with MPI standards indicated and shall be listed in its "MPI Approved Products Lists."

B. Material Compatibility:

1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.

2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.

C. Colors: As selected by Architect from manufacturer's full range.

2.3 PRIMERS/SEALERS

A. Bonding Primer (Water Based): MPI#17

B. Interior Latex Wood Primer: MPI#39

C. Wood-Knot Sealer: Sealer recommended in writing by topcoat manufacturer for use in paint system indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:

1. Wood: 15 percent.

C. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

D. Proceed with coating application only after unsatisfactory conditions have been corrected.

1. Application of coating indicates Contractor's acceptance of surfaces, substrates and conditions.

3.2 PREPARATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.

B. Clean substrates of substances that could impair bond of paints, including dirt, oil, grease, and incompatible paints and encapsulants.

C. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.

3.3 APPLICATION

A. Apply paints according to manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual."

B. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

3.4 CLEANING AND PROTECTION

A. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

B. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.5 INTERIOR PAINTING SCHEDULE

A. Steel Substrates:

1. Latex System:

a. Prime Coat: Factory-Applied Primer as specified in Section 081113 Hollow-Metal Doors & Frames
b. Intermediate Coat: Latex, interior, matching topcoat.
c. Topcoat: Latex, interior, semi-gloss (MPI Gloss Level 5), MPI #54.

B. Wood Substrates: Wood & Plywood:

1. Latex over Latex Primer System, MPI INT 6.1M:

a. Prime Coat: Primer, latex, for interior wood, MPI #39.
b. Intermediate Coat: Latex, interior, matching topcoat.
c. Topcoat: Latex, interior, flat (MPI Gloss Level 1), MPI #53.

END OF SECTION 099123

SECTION 099600 - HIGH-PERFORMANCE COATINGS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes surface preparation and the application of high-performance coating systems on the following substrates:

1. Interior Substrates:

a. Concrete masonry units (CMUs).

1.2 DEFINITIONS

A. MPI Gloss Level 5 (Semi-Gloss"): 35 to 70 units at 60 degrees, according to ASTM D 523.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product. Include preparation requirements and application instructions.

1. Include printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.

B. Samples: For each type of coating system and in each color and gloss of topcoat indicated.

1.4 QUALITY ASSURANCE

A. Mockups: Apply mockups of each coating system indicated to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Architect will select one surface to represent surfaces and conditions for application of each coating system.

a. Wall and Ceiling Surfaces: Provide samples of at least 10 sq. ft.
b. Other Items: Architect will designate items or areas required.

2. Final approval of color selections will be based on mockups.

a. If preliminary color selections are not approved, apply additional mockups of additional colors selected by Architect at no added cost to Owner.

1.5 EXTRA MATERIALS

A. Furnish extra materials described below that are from same production run (batch mix) as materials applied and that are packaged for storage and identified with labels describing contents.

1. Quantity: Furnish an additional 5 percent, but not less than 1 gal. of each material and color applied.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Benjamin Moore & Co.
2. PPG Architectural Coatings.
3. Sherwin-Williams Company (The).
4. Tnemec Inc.

2.2 HIGH-PERFORMANCE COATINGS, GENERAL

A. MPI Standards: Products shall comply with MPI standards indicated and shall be listed in its "MPI Approved Products Lists."

B. Material Compatibility:

1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.

2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.
3. Products shall be of same manufacturer for each coat in a coating system.

C. Colors: As selected by Architect from manufacturer's full range.

2.3 BLOCK FILLERS

A. Interior/Exterior Latex Block Filler: MPI#4

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:

1. Masonry (Clay and CMUs): 12 percent.

C. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

D. Proceed with coating application only after unsatisfactory conditions have been corrected.

1. Application of coating indicates Contractor's acceptance of surfaces, substrates and conditions.

3.2 PREPARATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and coating systems indicated.

B. Clean substrates of substances that could impair bond of paints, including dirt, oil, grease, and incompatible paints and encapsulants.

C. CMU Substrates: Remove efflorescence and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces to be coated exceeds that permitted in manufacturer's written instructions.

D. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.

3.3 APPLICATION

A. Apply high-performance coatings according to manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual."

B. Apply coatings to produce surface films without cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections. Produce sharp glass lines and color breaks.

C. Tint each undercoat a lighter shade to facilitate identification of each coat, if multiple coats of the same material are to be applied. Tint shall provide sufficient difference in shade of undercoats to distinguish each separate coat.

1. If undercoats or other conditions show through final coat, apply additional coats until cured film has a uniform coating, color and appearance.

3.4 CLEANING AND PROTECTION

A. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

B. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.5 INTERIOR HIGH-PERFORMANCE COATING SCHEDULE

A. CMU Substrates:

1. Epoxy System MPI INT 4.2F:

a. Block Filler: Block filler, latex, interior/exterior, MPI #4.

b. Intermediate Coat: Epoxy, matching topcoat.
c. Topcoat: Epoxy, semi-gloss, MPI #108.

END OF SECTION 099600

SECTION 102113.19 - PLASTIC TOILET COMPARTMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes solid-plastic toilet compartments configured as toilet enclosures and urinal screens.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For toilet compartments. Include plans, elevations, sections, details, and attachment details.

C. Samples for each type of toilet compartment material indicated.

1.3 INFORMATIONAL SUBMITTALS

A. Product certificates.

1.4 CLOSEOUT SUBMITTALS

A. Maintenance data.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Surface-Burning Characteristics: Comply with ASTM E 84 (Class B rating); testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Flame-Spread Index: 75 or less.
2. Smoke-Developed Index: 450 or less.

B. Regulatory Requirements: Comply with applicable provisions in ICC A117.1 for toilet compartments designated as accessible.

2.2 SOLID-PLASTIC TOILET COMPARTMENTS

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

1. Accurate Partitions Corp.; ASI Group.
2. Columbia Lockers; Partition Systems International of South Carolina.
3. Scranton Products.

B. Toilet-Enclosure Style: Overhead braced, floor supported.

C. Urinal-Screen Style: Wall hung.

D. Door, Panel, and Pilaster Construction: Solid, high-density polyethylene (HDPE) panel material, not less than 1 inch thick, seamless, with eased edges, no-sightline system, and with homogenous color and pattern throughout thickness of material.

1. Integral Hinges: Configure doors and pilasters to receive integral hinges.
2. Heat-Sink Strip: Not required for Class B Fire Rated materials.
3. Color and Pattern: One color and pattern in each room as selected by Architect from manufacturer's full range.

2.3 HARDWARE AND ACCESSORIES

A. Hardware and Accessories: Manufacturer's standard operating hardware and accessories.

1. Material: Stainless steel, minimum 14 gauge; plastic component inserts are unacceptable.
2. Pre-drilled for mounting with stainless steel thru-bolts.
3. Provide units that comply with regulatory requirements for accessibility at compartments designated as accessible.

a. Hinges: Manufacturer's standard paired, self-closing type, fully adjustable.
b. Latch & Keeper: Manufacturer's standard surface-mounted latch, with buffering spring to prevent damage when door is slammed against latch. The Strike & Keeper shall providing emergency access by lifting of the door, and an integral rubber bumper door stop.
c. Coat Hook: Manufacturer's standard, sized to prevent in-swinging door from hitting compartment-mounted accessories. Furnish one per door.
d. Door Bumper: Manufacturer's standard rubber-tipped bumper, where applicable for wall protection.
e. Door Pull: Manufacturer's Standard. Furnish one each side for per each ADA door.
f. Brackets: Full-Height (Continuous) Type: Manufacturer's standard design; stainless steel.
g. Pilaster Shoes and Sleeves (Caps): Manufacturer's standard design; 18 gauge stainless steel. Shoes shall be 3" high, and attach to the floor with stainless steel fasteners.

B. Overhead Bracing: Manufacturer's standard continuous, extruded-aluminum head rail with anti-grip profile and in manufacturer's standard finish.

C. Anchorages and Fasteners: Manufacturer's standard exposed fasteners of stainless steel, finished to match the items they are securing, with theft-resistant-type heads. Provide sex-type bolts for through-bolt applications. For concealed anchors, use stainless-steel, hot-dip galvanized-steel, or other rust-resistant, protective-coated steel compatible with related materials.

2.4 FABRICATION

A. Fabrication, General: Fabricate toilet compartment components to sizes indicated. Coordinate requirements and provide cutouts for through-partition toilet accessories where required for attachment of toilet accessories.

B. Overhead-Braced Units: Provide manufacturer's standard corrosion-resistant supports, leveling mechanism, and anchors at pilasters to suit floor conditions. Provide shoes at pilasters to conceal supports and leveling mechanism.

C. Door Size and Swings: Unless otherwise indicated, provide 28-inch wide, in-swinging doors for standard toilet compartments and 36-inch wide, in-swinging doors with a minimum 32-inch wide, clear opening for compartments designated as accessible.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Comply with manufacturer's written installation instructions. Install units rigid, straight, level, and plumb. Secure units in position with manufacturer's recommended anchoring devices.

1. Maximum Clearances:

a. Pilasters and Panels: 1/2 inch.
b. Panels and Walls: 1 inch.

2. Stirrup Brackets: Secure panels to walls and to pilasters with no fewer than three brackets attached at midpoint and near top and bottom of panel.

3.2 ADJUSTING

A. Hardware Adjustment: Adjust and lubricate hardware according to hardware manufacturer's written instructions for proper operation. Set hinges on in-swinging doors to hold doors open approximately 30 degrees from closed position when unlatched. Set hinges on out-swinging doors to return doors to fully closed position.

END OF SECTION 102113.19

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SECTION 102800 - TOILET, BATH, AND LAUNDRY ACCESSORIES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Public-use washroom accessories.
2. Warm-air dryers.
3. Childcare accessories.
4. Under-lavatory guards.
5. Custodial accessories.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Samples: Full size, for each exposed product and for each finish specified.

1.3 INFORMATIONAL SUBMITTALS

A. Sample warranty.

1.4 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.5 WARRANTY

A. Manufacturer's Special Warranty for Mirrors: Manufacturer agrees to repair or replace mirrors that fail in materials or workmanship within specified warranty period.

1. Warranty Period: 15 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2.2 PUBLIC-USE WASHROOM ACCESSORIES

A. Toilet Tissue (Roll) Dispenser, Accessory Schedule Item #8:

1. OFCI: Owner-Furnished, Contractor Installed

B. Paper Towel Dispenser, Accessory Schedule Item #NOT USED

C. Liquid-Soap Dispenser, Accessory Schedule Item # 7:

1. OFCI: Owner-Furnished, Contractor Installed

D. Waste Receptacle, Accessory Schedule Item #NOT USED

E. 18" Grab Bar, Accessory Schedule Item #3: Basis of Design: American Specialties, Inc. (ASI) 3800-P Series, Peened Finish, Type 01 Configuration.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. American Specialties, Inc.
b. Bobrick Washroom Equipment, Inc.
c. Bradley Corporation.

2. Mounting: Flanges with concealed fasteners.
3. Material: Stainless steel, 18 gauge

a. Finish: Smooth, No. 4 finish (satin) on ends and slip-resistant texture in grip area.

4. Outside Diameter: 1-1/2 inches.
5. Configuration and Length: Straight, 18 inches long.

F. 36" Grab Bar, Accessory Schedule Item #1: Basis of Design: American Specialties, Inc. (ASI) 3800-P Series, Peened Finish, Type 01 Configuration.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. American Specialties, Inc.
b. Bobrick Washroom Equipment, Inc.
c. Bradley Corporation.

2. Mounting: Flanges with concealed fasteners.
3. Material: Stainless steel, 18 gauge.

a. Finish: Smooth, No. 4 finish (satin) on ends and slip-resistant texture in grip area.

4. Outside Diameter: 1-1/2 inches.
5. Configuration and Length: Straight, 36 inches long.

G. 42" Grab Bar, Accessory Schedule Item #2: Basis of Design: American Specialties, Inc. (ASI) 3800-P Series, Peened Finish, Type 01 Configuration.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

   a. American Specialties, Inc.
   b. Bobrick Washroom Equipment, Inc.
   c. Bradley Corporation.

2. Mounting: Flanges with concealed fasteners.
3. Material: Stainless steel, 18 gauge.

   a. Finish: Smooth, No. 4 finish (satin) on ends and slip-resistant texture in grip area.

4. Outside Diameter: 1-1/2 inches.
5. Configuration and Length: Straight, 42 inches long.

H. Sanitary-Napkin Disposal Unit, Accessory Schedule Item #9: Basis of Design: American Specialties, Inc. (ASI) Model #0852.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

   a. American Specialties, Inc.
   b. Bobrick Washroom Equipment, Inc.
   c. Bradley Corporation.

2. Mounting: Surface mounted.
3. Door or Cover: Stainless steel, satin finish. Top cover is attached to cabinet with a full length 3/16" diameter stainless steel multi-staked piano hinge. User operated open/close.
4. Receptacle: Removable.
5. Material and Finish: Stainless steel, satin finish.

I. Mirror Unit, Accessory Item #4: Basis of Design: American Specialties, Inc. (ASI) Model #0620-2436.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

   a. American Specialties, Inc.
   b. Bobrick Washroom Equipment, Inc.
   c. Bradley Corporation.

2. Frame: Stainless-steel channel.

   a. Corners: Manufacturer's standard.

3. Hangers: Produce rigid, tamper-and theft-resistant installation, using method indicated below.

   a. Wall bracket of galvanized steel, equipped with concealed locking devices requiring a special tool to remove.

4. Size: 24" wide x 36" tall.

2.3 WARM-AIR DRYERS

A. Warm-Air Dryer, Accessory Schedule Item #6: Basis of Design: XLERATOR #XL-SB

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

   a. American Specialties, Inc.
   b. Bobrick Washroom Equipment, Inc.
   c. Excel Dryer Inc.

2. Description: Standard-speed, warm-air hand dryer.
3. Mounting: Surface mounted, with low-profile design.
4. Operation: Electronic-sensor activated with timed power cut-off switch.

   a. Operation Time: 30 to 40 seconds.

5. Cover Material and Finish: Brushed Stainless Steel
6. Electrical Requirements: 120V, 12.2A, 1450W.

2.4 CHILDCARE ACCESSORIES

A. Diaper-Changing Station, Accessory Schedule Item #10:

1. OFCI: Owner-Furnished, Contractor Installed

2.5 UNDERLAVATORY GUARDS

A. Under-lavatory Guard, Accessory Schedule Item #11. Basis of Design: TruBro LavGuard 2.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

   a. Plumberex Specialty Products, Inc.

b. Trubro, Inc.

2. Description: Insulating pipe covering for supply and drain piping assemblies that prevents direct contact with, and burns from, piping; allow service access without removing coverings.

3. Material and Finish: Antimicrobial, molded plastic, white.

2.7 FABRICATION

A. Keys: Provide universal keys for internal access to accessories for servicing and resupplying. Provide minimum of six keys to Owner's representative.

PART 3 EXECUTION

3.1 INSTALLATION

A Install accessories according to manufacturers' written instructions, using fasteners appropriate to substrate indicated and recommended by unit manufacturer. Install units level, plumb, and firmly anchored in locations and at heights indicated.

B. Grab Bars: Install to withstand a downward load of at least 250 lbf, when tested according to ASTM F 446.

C. Install all accessories in accordance with applicable accessibility codes and regulations in effect in the project jurisdiction. Refer to Drawings for mounting heights. Coordinate with manufacturer's stated mounting heights for ADA and ANSI 117.1 compliance.

END OF SECTION 102800

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Attachment B

Inspection for Asbestos Containing Materials
Restrooms - East Riverside Park
1155 S. Suber Road
Greer, S.C. 29650

Prepared for:

Mr. Don Shuman
Greenville County Recreation District
4806 Old Spartanburg Road
Taylors, S.C. 29687

March 14, 2016

Prepared by:

Environmental Testing and Management, Inc.

P.O. Box 896
Mauldin, South Carolina 29662
Phone (864) 213-4408 Fax (864) 213-4409

Inspection for Asbestos Containing Materials
Restrooms - East Riverside Park
1155 S. Suber Road
Greer, S.C. 29650

I. Introduction

Environmental Testing and Management Inc., (ETM) was retained by Mr. Don Shuman on behalf of the Greenville County Recreation District to provide professional and technical consulting services by conducting an asbestos inspection of the restroom building at the softball field and at the football field. This investigation was conducted by Andrew Schauder, CIH and Roxane Schauder, MS of ETM on February 19th, 2016. A total of twenty-four samples were collected, resulting in twenty-seven analyses. In addition, eight samples were submitted for TEM analysis.

II. Results

A. Football Field restroom

The restroom building is constructed of concrete masonary unit (CMU) block walls, concrete floor and a wood ceiling (see photo #1). Thus, there are not any suspect materials present inside the restrooms themselves. In the announcers booth, there is a wood underlayment for the roof, wood walls and wood floors. There is tarpaper present on the underside of the exterior walls. Samples E1 - E3 were collected from the tarpaper. The tar paper was found to not contain asbestos upon the initial analysis. In accordance with the SCD HEC asbestos regulations, a sample of this material was submitted for TEM analysis. The TEM analysis confirmed that this material did not contain asbestos.

The investigation then moved to the exterior of the building. Samples E4 - E6 were collected from the top layer of the shingles on the roof. Samples E7 - E9 were collected from the bottom layer of the shingles on the roof. Both layers of shingles were determined to not contain asbestos upon bulk analysis. This finding was confirmed by TEM analysis. Finally, under the bottom layer of shingles was a layer of tarpaper. This tarpaper appeared to be different than the tar paper found under the exterior siding. Therefore, samples E10 - E12 were collected from this material. The tarpaper under the roof shingles was found to not contain asbestos as confirmed by TEM analysis.

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Mauldin, South Carolina 29662
Phone (864) 213-4408 Fax (864) 213-4409

B. Softball Field restroom

This restroom is constructed of CMU block walls with a concrete floor. There is a metal roof present (see photo #2). There were no suspect materials present inside the restrooms. The mansard portion of the roof is covered by shingles. Samples S1 - S3 were collected from the shingles. The shingles were determined to not contain asbestos as was confirmed by TEM analysis. Underlying the shingles is a tar paper. Samples S4 - S6 were collected from the tarpaper. The tar paper was determined to not contain asbestos as was confirmed by TEM analysis. Underlying the metal roof is a roof membrane. Samples S7 - S9 were collected from this layer of roofing. The roof membrane itself was found to not contain asbestos upon bulk analysis. This was confirmed by TEM analysis. However, the silver layer was found to contain 2-3% anthophyllite asbestos. Underlying the roof membrane was a second layer of felt roofing material. This material was determined to not contain asbestos upon bulk analysis. However, upon TEM analysis, this layer of roofing was found to contain 0.5% chrysotile asbestos.

III. Conclusions and Recommendations

The results of this survey are summarized in the attached Tables. Each Table lists the following data:

1. Sample number
2. Sample location
3. Material sampled
4. The result of the analysis of the material sampled
5. Quantity of material

There were not any asbestos-containing materials associated with the football field restrooms building. However, the roof for the softball field was found to contain asbestos in the silver layer which is on the top layer of roofing. The bottom layer of roofing was found to contain 0.5% chrysotile asbestos. The roofing is currently in good condition and can be abated using nonfriable abatement methods.

Inspector: _____ License #: 1336 Expires: 08/02/16

Inspector: Roxanne Schaudel License #: 00189 Expires: 09/07/16

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Inspection for Asbestos Containing Materials
E. Riverside Park restrooms
Page Three

TABLE I - Football Field

Sample No.	Location	Material	SF	Result
E1 - E3	announcers booth	tar paper	990	ND
E4 - E6	Roof	shingles - top layer	1125	ND
E7 - E9	Roof	shingles - bottom layer	1125	ND
E10 - E12	Roof	tar paper	1125	ND

ND*: none detected

TABLE II - Softball Field

Sample No.	Location	Material	SF	Result
S1 - S3	mansard roof	shingles	126	ND
S4 - S6	mansard roof	tar paper	126	ND
S7 - S9	Roof	roof membrane silver layer	440 220	ND 2-3% Anthophy llite
S10 - S12	Roof	felt roofing	440	0.5% Chrysotile

ND*: none detected

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Mauldin, South Carolina 29662
Phone (864) 213-4408 Fax (864) 213-4409

PHOTO #1

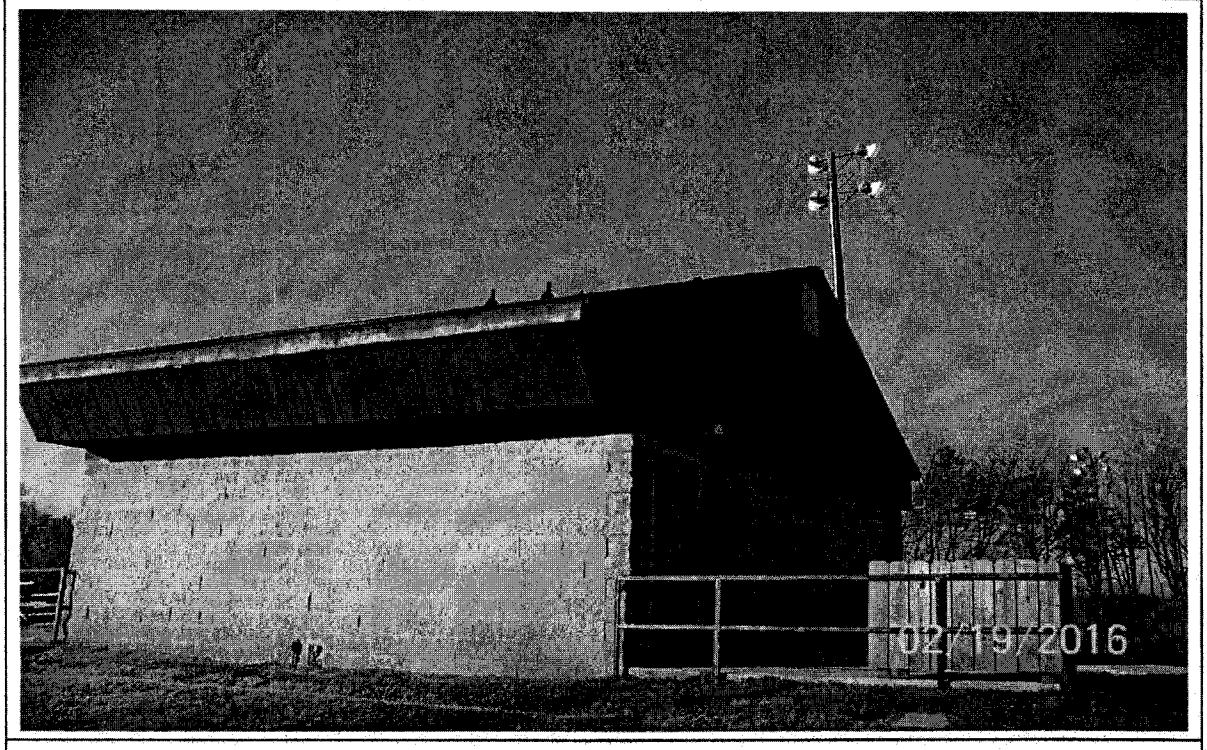
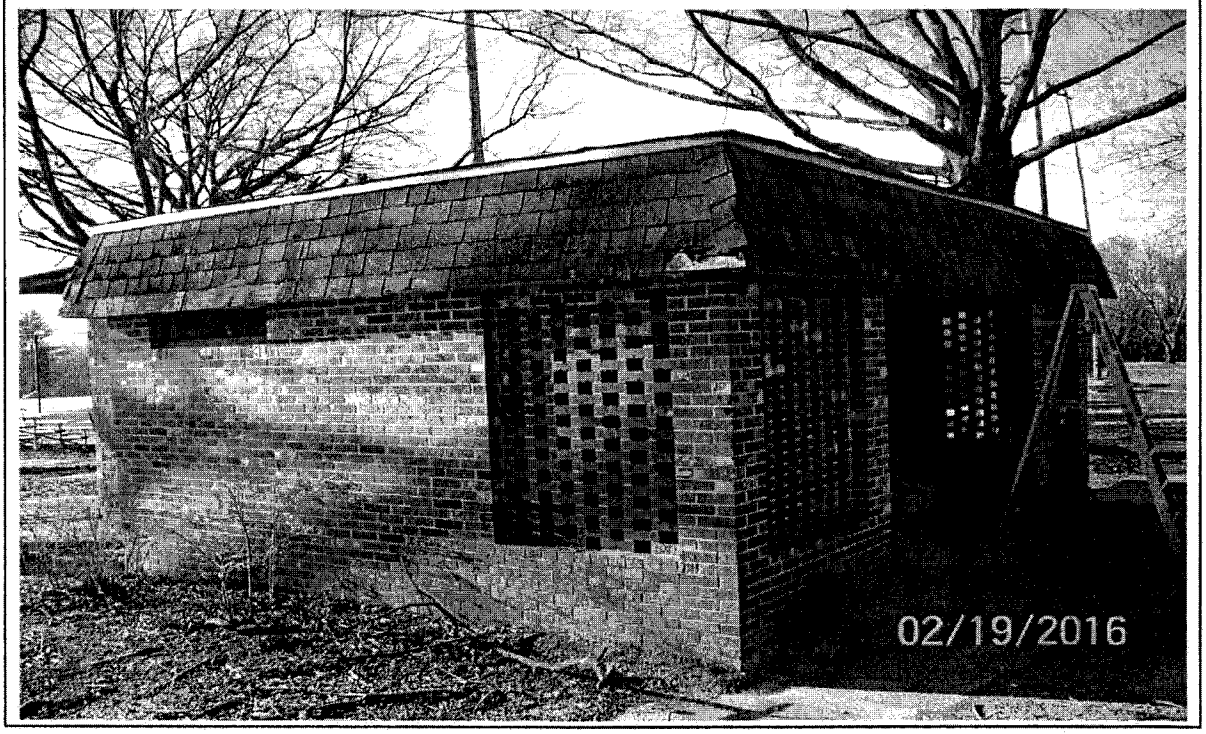


PHOTO #2



SEEML Reference Number:
160223005-A

Southeast Environmental Microbiology Laboratories
506-A Laurens Road
Greenville, South Carolina 29607
Phone: (864) 233-3770
Fax: (864) 233-6589

The information and data for **Environmental Testing & Management** has been checked for thoroughness and accuracy. The following report is contained within this document:

☒ Bulk asbestos fiber analysis: EPA 600/M4-82-020 Interim Method for the Determination of Asbestos in Bulk Insulation

☒ Bulk asbestos fiber analysis: EPA 600/R-93/116 Method for the Determination of Asbestos in Bulk Building Materials

Lab Manager Review: *Andrea Berrios* Date: 02/24/16

Thank you for choosing Southeast Microbiology Laboratories (SEEML). We strive to provide superior quality testing, analytical data and customer service. SEEML is accredited through the National Institute of Standards and Technology (NIST) National Voluntary Accreditation Program (NVLAP) for bulk asbestos analysis (NVLAP # 201031-0).

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Guidelines for Interpretation:
A material is considered regulated asbestos containing material (ACM) where the asbestos content is determined to be one percent or greater. Several organizations, including the American Conference of Government Industrial Hygienists (ACGIH); the American Industrial Hygiene Association (AIHA); the Indoor Air Quality Association (IAQA); the United States Environmental Protection Agency (USEPA); the Centers for Disease Control (CDC) as well as the California Department of Health Services (CADHS) have published guidelines for assessment and interpretation of analytical data indicating a tested material is ACM.

Interpretation of the data and information within this document is left to the company, consultant, and/or persons who conducted the fieldwork.

Southeast Environmental Microbiology Laboratories - Asbestos Division
506 A- Laurens Rd, Greenville, SC 29607
Phone: 864-233-3770, Fax: 864-233-3779 , www.seeml.com

PLM Asbestos Bulk Sample Summary

Client:	Andrew Schauder Environmental Testing and Management, Inc. P.O. Box 896 Mauldin, SC 29662	Date Sampled:	02/23/16
		Date Received:	02/23/16
		Date Analyzed:	02/24/16
		Date Reported:	02/24/16
		Project Name:	E. Riverside Park:Football
Analyzed by:	Andrea Berrios	Project Address:	
Methodology:	EPA/600/R-93/116 Without Gravimetry	SEEML Ref#:	160223005-A
Regular/Split Layers Analyzed:	12/0		

Lab No.: / Client No.:	% Asbestos Type	% Fibrous Non-Asbestos Material Type	% Non-Fibrous Material	Description/Location
050A / E1	None Detected	30% Cellulose	70%	Tar Paper
051A / E2	None Detected	25% Cellulose	75%	Tar Paper
052A / E3	None Detected	30% Cellulose	70%	Tar Paper
053A / E4	None Detected	3% Cellulose, 2% Fiber Glass	95%	Shingle: Top Layer
054A / E5	None Detected	3% Cellulose, 2% Fiber Glass	95%	Shingle: Top Layer
055A / E6	None Detected	2% Cellulose, 2% Fiber Glass	96%	Shingle: Top Layer
056A / E7	None Detected	3% Fiber Glass	97%	Shingle: Bottom Layer
057A / E8	None Detected	2% Cellulose, 2% Fiber Glass	96%	Shingle: Bottom Layer
058A / E9	None Detected	3% Fiber Glass	97%	Shingle: Bottom Layer

Approved by: *Andrea Berrios*

Approved Signatory: Andrea Berrios

The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. SEEML reserves the right to dispose of all samples after a period of thirty days, according to all state and federal guidelines, unless otherise specified.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected the minimum detection and reporting limit is less than 1% unless point counting is preformed. Floor tile samples may contain large amounts of interference material and it is recommmended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification

SEEML NVLAP Lab ID:201031-0

Form 8.0 Rev. 3 03/05/15

Southeast Environmental Microbiology Laboratories - Asbestos Division
506 A- Laurens Rd, Greenville, SC 29607
Phone: 864-233-3770, Fax: 864-233-3779 , www.seeml.com

PLM Asbestos Bulk Sample Summary

Client:	Andrew Schauder Environmental Testing and Management, Inc. P.O. Box 896 Mauldin, SC 29662	Date Sampled:	02/23/16
		Date Received:	02/23/16
		Date Analyzed:	02/24/16
		Date Reported:	02/24/16
		Project Name:	E. Riverside Park:Football
Analyzed by:	Andrea Berrios	Project Address:	
Methodology:	EPA/600/R-93/116 Without Gravimetry	SEEML Ref#:	160223005-A
Regular/Split Layers Analyzed:	12/0		

Lab No.: / Client No.:	% Asbestos Type	% Fibrous Non-Asbestos Material Type	% Non-Fibrous Material	Description/Location
059A / E10	None Detected	25% cellulose	75%	Tar Paper
060A / E11	None Detected	25% cellulose	75%	Tar Paper
061A / E12	None Detected	25% cellulose	75%	Tar Paper

Approved by: *Andrea Berrios*

Approved Signatory: Andrea Berrios

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SEEML NVLAP Lab ID:201031-0

Form 8.0 Rev. 3 03/05/15

9000 Commerce Parkway Suite B
Mt. Laurel,NJ 08054
Telephone: (856) 231-9449
Email: customerservice@iatl.com

Cover Letter

Mar 02. 2016

SEEML

Thank you for choosing iATL for your analytical needs. The Report herein along with the chain of custody contains details of (1) the transmittal of the samples from you to our laboratory, (2) the acceptance and analysis of the samples, (3) the supporting documentation tied to this project, (4) any QA notifications or communications, and (5) our invoice for this project. In addition:

- Please carefully look over these report deliverables and make sure that it meets your needs. Depending upon regulator and accrediting body limitations, you may have some choices for the formatting and data presentation beyond what follows. Please contact our customer service department for information on any options.
- You may intend for all, or select, samples in this submittal to move forward in the laboratory for other testing procedures. The batch sheet in this Report may list that authorization to proceed. Please login to our secure client portal and check this status or to confirm any additional analyses.
- If there are other offices, individuals, or customers who you think should receive this report – please send us that information and we will happily forward the report.

iATL is always seeking to improve our services and the customer experience. Any feedback that you can supply would benefit our commitment to quality. Please consider emailing any of the contacts on the next page of this report.

Finally, I wanted to take this opportunity to express our appreciation in your choice of iATL. We value our customers and seek to earn your business… one sample at a time.

Regards,

Eric Snyder
President, iATL

Frank Ehrenfeld
Laboratory
Director, iATL

iATL INTERNATIONAL
ASBESTOS TESTING LABORATORIES

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: SEEML
506-A Laurens Rd
Greenville SC 29607

Client: SEE707

Report Date: 3/2/2016
Report No.: 503963 - TEM NOB
Project: E. Riverside Park:Football
Project No.: 160223005-A-TEM

TEM BULK SAMPLE ANALYSIS SUMMARY

Lab No.:5867178
Client No.:E3
Description: Black Tar Paper
% Asbestos Detected:
None Detected

Facility:
Location:
% Non-Asbestos Fibrous Material:
None Detected

Organic Fraction:99.4 %
Gravimetrically Reduced Subsample:0.6%
% Non-Fibrous Material:
0.6 Other

Lab No.:5867179
Client No.:E5
Description: Black/Tan/Brown Shingle
% Asbestos Detected:
None Detected

Facility:
Location:
% Non-Asbestos Fibrous Material:
None Detected

Organic Fraction:73 %
Gravimetrically Reduced Subsample:27%
% Non-Fibrous Material:
27 Other

Lab No.:5867180
Client No.:E9
Description: Black Shingle
% Asbestos Detected:
None Detected

Facility:
Location:
% Non-Asbestos Fibrous Material:
None Detected

Organic Fraction:62.7 %
Gravimetrically Reduced Subsample:37.3%
% Non-Fibrous Material:
37.3 SiAl M+, Kaolin
Other

Lab No.:5867181
Client No.:E12
Description: Black Tar Paper
% Asbestos Detected:
None Detected

Facility:
Location:
% Non-Asbestos Fibrous Material:
None Detected

Organic Fraction:98.5 %
Gravimetrically Reduced Subsample:1.5%
% Non-Fibrous Material:
1.5 Other

Please refer to the Preface of this report for further information regarding your analysis.

Date Received: 2/25/2016
Date Analyzed: 3/1/2016 4:59:17 PM
Signature:
Analyst: Craig Liska

Approved By:
Frank E. Ehrenfeld, III
Laboratory Director

iATL INTERNATIONAL
ASBESTOS TESTING LABORATORIES

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client:	SEEML 506-A Laurens Rd Greenville SC 29607	**Report Date:**	3/2/2016
		Report No.:	503963 - TEM NOB
		Project:	E. Riverside Park:Football
Client:	SEE707	**Project No.:**	160223005-A-TEM

Appendix to Analytical Report:

Customer No.: SEE707
Customer: SEEML
Address: 506-A Laurens Rd
Customer Contact: Andrea Berrios
Analysis: ELAP Section 198.4
This appendix seeks to promote greater understanding of any observations, exceptions, special instructions, or circumstances that the laboratory needs to communicate to the client concerning the above samples. The information below is used to help promote your ability to make the most informed decisions for you and your customers. Please note the following points of contact for any questions you may have.
iATL Customer Service: customerservice@iatl.com
iATL Office Manager: cdavis@iatl.com
iATL Account Representative: Pete Lesniak
Project Summary:
Sample Login Notes: See Batch Sheet Attached
Sample Matrix: Bulk material, Non-Friable Organically Bound material such as VSF, FT, M, RM, Tar, CB, Shingle, Tar Paper, Caulk, Glazing

Exceptions Noted: See Following Pages

General Terms, Warrants, Limits, Qualifiers:

General information about iATL capabilities and client/laboratory relationships and responsibilities are spelled out in iATL policies that are listed at www.iATL.com and in our Quality Assurance Manual per ISO 17025 standard requirements. The information therein is a representation of iATL definitions and policies for turnaround times, sample submittal, collection media, blank definitions, quantification issues and limit of detection, analytical methods and procedures, sub-contracting policies, results reporting options, fees, terms, and discounts, confidentiality, sample archival and disposal, and data interpretation.
iATL warrants the test results to be of a precision normal for the type and methodology employed for each sample submitted. iATL disclaims any other warrants, expressed or implied, including warranty of fitness for a particular purpose and warranty of merchantability. iATL accepts no legal responsibility for the purpose for which the client uses test results. Any analytical work performed must be governed by our Standard Terms and Conditions. Prices, methods and detection limits may be changed without notification. Please contact your Customer Service Representative for the most current information.
This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA LAP LLC, or any agency of local, state or province governments nor of any agency of the U.S. government.
This report shall not be reproduced except in full, without written approval of the laboratory.

Information Pertinent to this Report:

Analysis by ELAP Section 198.4

Certification: NIST-NVLAP No. 101165-0
NY-DOH No. 11021
AIHA-LAP, LLC No. 100188

All results are based on the samples as received at the lab. iATL assumes that appropriate sampling methods have been used and that the data upon which these results are based have been accurately supplied by the client.

The "Gravimetrically Reduced Subsample" is the portion of the submitted sample remaining following the ashing and acid treatment processes. TEM analysis occurs on this portion of the sample.

Final results are calculated to represent the sample as submitted. Results are verifiable for only those operations and analyses performed in the laboratory.

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client:	SEEML 506-A Laurens Rd Greenville SC 29607	**Report Date:**	3/2/2016
		Report No.:	503963 - TEM NOB
		Project:	E. Riverside Park:Football
Client:	SEE707	**Project No.:**	160223005-A-TEM

Disclaimers / Qualifiers:

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(4)Note: Heavy loading (>0.1 s/cc) of non-asbestos particulate that might prohibit the required morphological, diffraction and elemental identification of asbestos. The absence of asbestos on the sample can not be concluded. Analysis for informational purposes only.
(5)Note: Heavy loading (>10% per grid opening) non-fibrous particulate. Sample analysis terminated. Clearance criteria exceeded (>10%). Sample voided by AHERA 40 CFR 763.
(5A)Note: Heavy loading (>25% per grid opening) non-fibrous particulate. Sample analysis terminated. Clearance criteria exceeded (>25%). Sample voided by NIOSH 7402.
(6)Note: Sample turbidity >1.0 NTU. Therefore MDL >> 0.1 MFL. Does not meet National Primary Drinking Water Standards.
(7)Note: Sample integrity compromised. Received sample cassette with top open (40 CFR 763 c-e).
(8)Note: Received sample cassettes with portion of filter missing. "PCM re-prep"
(9)Note: Void - overloaded, unable to prep.
(10)Note: Void - filter damaged.
(11)Note: No volume supplied.
(12)Note: Heavy loading (>0.1 s/cc) of non-asbestos / non-fibrous particulate.
(13)Note: Method analytical sensitivity of <0.003 s/cc not attained due to volume of air sampled. NIOSH requires a minimum of 400L.
(13A)Note: Volume does not meet AHERA requirements.(<1188 L)
(14)Note: Geometric Mean = 0.xxxx Structures/cc
(15)Note: Samples received on 0.8 micron PCM filters. Samples must be submitted on 0.45 micron filter cassettes per AHERA guidelines
(18)Note: *Results are for informational purposes only. Samples received on 0.8um PCM cassettes. Per AHERA 40 CFR 763 guidelines samples must be obtained on a 0.45um cassette.
(TEM NOB 1) Note: The above result represents only the analysis of NOB-residue submitted from the client.
(TEM NOB 2) Note: Insufficient material (<100mg) to verify results.

SEEML Reference Number:
160223004-A

Southeast Environmental Microbiology Laboratories
506-A Laurens Road
Greenville, South Carolina 29607
Phone: (864) 233-3770
Fax: (864) 233-6589

The information and data for **Environmental Testing & Management** has been checked for thoroughness and accuracy. The following report is contained within this document:

☒ Bulk asbestos fiber analysis: EPA 600/M4-82-020 Interim Method for the Determination of Asbestos in Bulk Insulation

☒ Bulk asbestos fiber analysis: EPA 600/R-93/116 Method for the Determination of Asbestos in Bulk Building Materials

Lab Manager Review: *Andrea Berrios* Date:02/24/16

Thank you for choosing Southeast Microbiology Laboratories (SEEML). We strive to provide superior quality testing, analytical data and customer service. SEEML is accredited through the National Institute of Standards and Technology (NIST) National Voluntary Accreditation Program (NVLAP) for bulk asbestos analysis (NVLAP # 201031-0).

Confidentiality Notice:
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Guidelines for Interpretation:
A material is considered regulated asbestos containing material (ACM) where the asbestos content is determined to be one percent or greater. Several organizations, including the American Conference of Government Industrial Hygienists (ACGIH); the American Industrial Hygiene Association (AIHA); the Indoor Air Quality Association (IAQA); the United States Environmental Protection Agency (USEPA); the Centers for Disease Control (CDC) as well as the California Department of Health Services (CADHS) have published guidelines for assessment and interpretation of analytical data indicating a tested material is ACM.

Interpretation of the data and information within this document is left to the company, consultant, and/or persons who conducted the fieldwork.

Southeast Environmental Microbiology Laboratories - Asbestos Division
506 A- Laurens Rd, Greenville, SC 29607
Phone: 864-233-3770, Fax: 864-233-3779 , www.seeml.com

PLM Asbestos Bulk Sample Summary

Client:	Andrew Schauder Environmental Testing and Management, Inc. P.O. Box 896 Mauldin, SC 29662	Date Sampled:	02/23/16
		Date Received:	02/23/16
		Date Analyzed:	02/24/16
		Date Reported:	02/24/16
		Project Name:	E. Riverside Park:Softball Res
Analyzed by:	Andrea Berrios	Project Address:	
Methodology:	EPA/600/R-93/116 Without Gravimetry	SEEML Ref#:	160223004-A
Regular/Split Layers Analyzed:	12/3		

Lab No.: / Client No.:	% Asbestos Type	% Fibrous Non-Asbestos Material Type	% Non-Fibrous Material	Description/Location
038A / S1	**None Detected**	5% Fiber Glass	95%	Shingle
039A / S	**None Detected**	5% Fiber Glass	95%	Shingle
040A / S3	**None Detected**	3% Fiber Glass	97%	Shingle
041A / S4	**None Detected**	30% Cellulose	70%	Tar Paper
042A / S5	**None Detected**	25% Cellulose	75%	Tar Paper
043A / S6	**None Detected**	35% Cellulose	65%	Tar Paper
044A / S7	**None Detected**	2% Cellulose	98%	Roof Membrane
044B / S7	**3% Anthophyllite**	2% Cellulose	95%	Roof Membrane **Silver Layer**
045A / S8	**None Detected**	5% Cellulose	95%	Roof Membrane

Approved by: *Andrea Berrios*

Approved Signatory: Andrea Berrios

The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. SEEML reserves the right to dispose of all samples after a period of thirty days, according to all state and federal guidelines, unless otherise specified.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected the minimum detection and reporting limit is less than 1% unless point counting is preformed. Floor tile samples may contain large amounts of interference material and it is recommmended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification

SEEML NVLAP Lab ID:201031-0

Form 8.0 Rev. 3 03/05/15

Southeast Environmental Microbiology Laboratories - Asbestos Division
506 A- Laurens Rd, Greenville, SC 29607
Phone: 864-233-3770, Fax: 864-233-3779 , www.seeml.com

PLM Asbestos Bulk Sample Summary

Client:	Andrew Schauder Environmental Testing and Management, Inc. P.O. Box 896 Mauldin, SC 29662	Date Sampled:	02/23/16
		Date Received:	02/23/16
		Date Analyzed:	02/24/16
		Date Reported:	02/24/16
		Project Name:	E. Riverside Park:Softball Res
Analyzed by:	Andrea Berrios	Project Address:	
Methodology:	EPA/600/R-93/116 Without Gravimetry	SEEML Ref#:	160223004-A
Regular/Split Layers Analyzed:	12/3		

Lab No.: / Client No.:	% Asbestos Type	% Fibrous Non-Asbestos Material Type	% Non-Fibrous Material	Description/Location
045B / S8	**2% Anthophyllite**	2% Cellulose	96%	Roof Membrane **Silver Layer**
046A / S9	**None Detected**	5% Cellulose	95%	Roof Membrane
046B / S9	**3% Anthophyllite**	2% Cellulose	95%	Roof Membrane **Silver Layer**
047A / S10	**None Detected**	12% Fiber Glass	88%	Felt Roofing
048A / S11	**None Detected**	10% Fiber Glass	90%	Felt Roofing
049A / S12	**None Detected**	12% Fiber Glass	88%	Felt Roofing

Approved by: *Andrea Berrios*

Approved Signatory: Andrea Berrios

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SEEML NVLAP Lab ID:201031-0

Form 8.0 Rev. 3 03/05/15

iATL INTERNATIONAL
Asbestos Testing Laboratories

9000 Commerce Parkway Suite B
Mt. Laurel,NJ 08054
Telephone: (856) 231-9449
Email: customerservice@iatl.com

Cover Letter

Mar 03, 2016

SEEML

Thank you for choosing iATL for your analytical needs. The Report herein along with the chain of custody contains details of (1) the transmittal of the samples from you to our laboratory, (2) the acceptance and analysis of the samples, (3) the supporting documentation tied to this project, (4) any QA notifications or communications, and (5) our invoice for this project. In addition:

- Please carefully look over these report deliverables and make sure that it meets your needs. Depending upon regulator and accrediting body limitations, you may have some choices for the formatting and data presentation beyond what follows. Please contact our customer service department for information on any options.
- You may intend for all, or select, samples in this submittal to move forward in the laboratory for other testing procedures. The batch sheet in this Report may list that authorization to proceed. Please login to our secure client portal and check this status or to confirm any additional analyses.
- If there are other offices, individuals, or customers who you think should receive this report – please send us that information and we will happily forward the report.

iATL is always seeking to improve our services and the customer experience. Any feedback that you can supply would benefit our commitment to quality. Please consider emailing any of the contacts on the next page of this report.

Finally, I wanted to take this opportunity to express our appreciation in your choice of iATL. We value our customers and seek to earn your business… one sample at a time.

Regards,

Eric Snyder
President, iATL

Frank Ehrenfeld
Laboratory
Director, iATL

iATL INTERNATIONAL
ASBESTOS TESTING LABORATORIES

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: SEEML
506-A Laurens Rd
Greenville SC 29607

Client: SEE707

Report Date: 3/3/2016
Report No.: 504088 - TEM NOB
Project: E. Riverside Park-Softball Field
Project No.: 160223004-A-TEM

TEM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 5868540
Client No.: S2
Description: Brown/Black Shingle
Facility:
Location: Roof
Organic Fraction: 37.6 %
Gravimetrically Reduced Subsample: 62.4%
% Asbestos Detected: *None Detected*
% Non-Asbestos Fibrous Material: None Detected
% Non-Fibrous Material: 62.4 Other

Lab No.: 5868541
Client No.: S4
Description: Black Tar Paper
Facility:
Location:
Organic Fraction: 99.4 %
Gravimetrically Reduced Subsample: 0.6%
% Asbestos Detected: *None Detected*
% Non-Asbestos Fibrous Material: None Detected
% Non-Fibrous Material: 0.6 Other

Lab No.: 5868542
Client No.: S7
Description: Black/Silver Roof Material / Paint
Facility:
Location: Roof
Organic Fraction: 96.6 %
Gravimetrically Reduced Subsample: 3.4%
% Asbestos Detected: *None Detected*
% Non-Asbestos Fibrous Material: None Detected
% Non-Fibrous Material: 3.4 Other

Lab No.: 5868543
Client No.: S11
Description: Black Tar Paper / Tar
Facility:
Location: Roofing
Organic Fraction: 97.7 %
Gravimetrically Reduced Subsample: 2.3%
% Asbestos Detected: *0.5 Chrysotile*
% Non-Asbestos Fibrous Material: None Detected
% Non-Fibrous Material: 1.8 Other

Please refer to the Preface of this report for further information regarding your analysis.

Date Received: 2/26/2016
Date Analyzed: 3/2/2016 6:38:49 PM
Signature:
Analyst: Tom Barkley

Approved By:
Frank E. Ehrenfeld, III
Laboratory Director

iATL INTERNATIONAL
Asbestos Testing Laboratories

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Mt. Laurel, New Jersey 08054
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Certification: NIST-NVLAP No. 101165-0
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