

CONTRACT DOCUMENTS AND SPECIFICATIONS

for

**ADA ACCESSIBLE BATHROOMS
DISCOVER PORTSMOUTH CETER**

Bid Proposal #17-20

**John P. Bohenko, City Manager
City of Portsmouth, New Hampshire**

Prepared by: Portsmouth Community Development Department

1 Junkins Avenue, Portsmouth

Technical Specifications Prepared by: The Architects

Manchester, NH

TABLE OF CONTENTS

INVITATION TO BID	3
INSTRUCTION TO BIDDERS	4
AWARD AND EXECUTION OF CONTRACT	8
PROPOSAL FORM	10
BID SECURITY BOND	14
CONTRACT AGREEMENT	16
NOTICE OF INTENT TO AWARD	19
NOTICE TO PROCEED	20
CHANGE ORDER	21
PERFORMANCE BOND	22
LABOR AND MATERIALS PAYMENT BOND	24
MAINTENANCE BOND	27
CONTRACTOR'S AFFIDAVIT	28
CONTRACTOR'S RELEASE	29
GENERAL REQUIREMENTS	30
CONTROL OF WORK	32
TEMPORARY FACILITIES	34
INSURANCE REQUIREMENTS	35
MEASUREMENT AND PAYMENT	36
SPECIAL REQUIREMENTS FOR COMMUNITY DEVELOPMENT BLOCK GRANT (CDBG) FUNDED PROJECTS	40
STANDARD SPECIFICATIONS	42
CONTRACT DRAWING LIST	43
TECHNICAL SPECIFICATIONS	44
ALTERNATES	47
APPENDICES	50
APPENDIX A: Compliance with Laws and Regulations	51
APPENDIX B: Federal Labor Provisions	56
APPENDIX C: Davis Bacon Wage Rate Decision	62
APPENDIX D: Asbestos Testing Report	68

City of Portsmouth
Portsmouth, New Hampshire

DISCOVER PORTSMOUTH ADA ACCESSIBLE BATHROOMS

LIMITED INVITATION TO BID TO PREQUALIFIED CONTRACTORS ONLY

Sealed bid proposals, **plainly marked**, **DISCOVER PORTSMOUTH ADA ACCESSIBLE BATHROOMS Bid Proposal #17-20** on the outside of the mailing envelope as well as the sealed bid envelope, addressed to the Finance/Purchasing Department, City Hall, 1 Junkins Avenue, Portsmouth, New Hampshire, 03801, will be accepted until **3:30 p.m. on December 19, 2020** at which time all bids will be publicly opened and read aloud. **Only those firms that have been prequalified for this project are eligible to bid.**

Questions regarding the project must be submitted in writing to **Lori MacGinnis** at purchasing@cityofportsmouth.com by close of business **December 12, 2020** and will be answered in the form of an addendum posted on the City's website <http://www.cityofportsmouth.com/finance/purchasing.htm>.

PROJECT SYNOPSIS: Interior construction of ADA-accessible bathroom facilities at the city-owned building located at 10 Middle Street (known as the Discover Portsmouth Center) as per the specifications and drawings including in this bid documents. Project also includes limited, targeted asbestos removal and/or regulatory-compliant encapsulation in the immediate construction area, which must be completed prior to general construction.

This project is funded by the City's Community Development Block Grant (CDBG), which is received from the U.S. Department of Housing and Urban Development (HUD) and administered by the Portsmouth Community Development Department. Project work must be completed in accordance with all applicable statutes, laws, and regulations.

Specifications, plans and any addenda may be obtained from the City's web site: <http://www.cityofportsmouth.com/finance/purchasing.htm>, by contacting the Finance/Purchasing Department on the third floor at the above address, or by calling the Purchasing Coordinator at 603-610-7227. Addenda to this bid document, if any, including written answers to questions, will be posted on the City of Portsmouth website at the same location under the project heading. Addenda and updates will **NOT** be sent directly to vendors. Questions may be addressed to the Purchasing Coordinator.

All work shall be completed by April 10, 2020, with Substantial Completion by March 25, 2020. Liquidated damages shall be assessed per Article VII of this contract for work extending beyond this mandated completion date. **Mobilization is expected between January 2, 2020 and January 9, 2020.**

The City of Portsmouth reserves the right to reject any or all bids, to waive technical or legal deficiencies, to re-bid, and to accept any bid that it may deem to be in the best interest of the City.

Each Bidder shall furnish a bid security in the amount of ten percent (10%) of the bid. The Bid Security may be in the form of a certified check drawn upon a bank within the State of New Hampshire or a bid bond executed by a surety company authorized to do business in the State of New Hampshire, made payable to the City of Portsmouth, N.H.

INSTRUCTIONS TO BIDDERS

BIDDING REQUIREMENTS AND CONDITIONS

1. Special Notice to Bidders

Appended to these instructions is a complete set of bidding and general contract forms. These forms may be detached and executed for the submittal of bids. The plans, specifications, and other documents designated in the proposal form will be considered as part of the proposal, whether attached or not.

Addenda to this proposal, if any, including written answers to questions, will be posted on the City of Portsmouth website at <http://www.cityofportsmouth.com/finance/purchasing.htm> under the project heading. Addenda and updates will **NOT** be sent directly to firms. Contractors submitting a proposal should check the web site daily for addenda and updates after the release date. Firms should print out, sign and return addenda with the proposal. Failure to do so may result in disqualification.

2. Interpretation of Quantities in Bid Schedules

The quantities appearing in the bid schedule are approximate only and are prepared for the comparison of bids. Payment to the contractor will be made only for actual work performed and accepted in accordance with the contract. Any scheduled item of work to be done and materials to be furnished may be increased, decreased or omitted as hereinafter provided, and no claim for loss, anticipated profits or costs incurred in anticipation of work not ultimately performed will be allowed due to such increase or decrease.

3. Examination of Plans, Specifications and Site Work

The Bidder is expected to examine carefully the site of the proposed work, the plans, standard specifications, supplemental specifications, special provisions and contract forms before submitting a proposal. The submission of a bid shall be considered conclusive evidence that the Bidder has made such examination and is satisfied as to the conditions to be encountered in performing the work and as to the requirements of the contract. It will be conclusive evidence that the Bidder has also investigated and is satisfied with the sources of supply for all materials.

Plans, surveys, measurements, dimensions, calculations, estimates and statements as to the condition under which the work is to be performed are believed to be correct, but the contractors must examine for themselves, as no allowance will be made for any errors or inaccuracies that maybe found therein.

4. Minimum Qualifications

Bidder shall be prequalified by the City for this project. Because this project includes asbestos abatement, the following will apply to asbestos subcontractors:

a.) Asbestos Abatement Subcontractors

- i.) The licensed asbestos abatement subcontractor shall be identified on the most current listing of abatement contractors maintained by the NHDES <https://www4.des.state.nh.us/OnestopPub/Air/ContractorLists/Web-AbatementContractors.pdf>. Unlicensed firms are deemed unqualified and any received bids from such will not be considered by the City.

- ii.) The licensed abatement subcontractor, and all employees, shall have received NO violations issued by any state regulating agency (including NHDES) and/or the USEPA over the past 5-years.

Bidding firms that do not identify a qualified asbestos abatement subcontractor on the proposal form where indicated shall be considered non- responsive.

5. Familiarity with Laws

The Bidder is assumed to have made himself or herself familiar with all federal and state laws and all local by-laws, ordinances and regulations which in any manner affect those engaged or employed on the work or affect the materials or equipment used in the work or affect the conduct of the work, and the Bidder, if awarded the contract, shall be obligated to perform the work in conformity with said laws, by-laws, ordinances and regulations notwithstanding its ignorance thereof. If the Bidder shall discover any provision in the plans or specifications which is in conflict with any such law, by-law, ordinance or regulation the Bidder shall forthwith report it to the engineer in writing.

6. Preparation of Proposal

a) The Bidder shall submit its proposal upon the forms furnished by the Owner. The Bidder shall specify a lump sum price in figures, for each pay item for which a quantity is given and shall also show the products of the respective prices and quantities written in figures in the column provided for that purpose and the total amount of the proposal obtained by adding the amount of the several items. All words and figures shall be in ink or typed.

If a unit price or a lump sum bid already entered by the Bidder on the proposal form is to be altered it should be crossed out with ink, the new unit price or lump sum bid entered above or below it and initialed by the Bidder, also with ink.

b) The Bidder's proposal must be signed with ink by the individual, by one or more general partners of a partnership, by one or more members or officers of each firm representing a joint venture; by one or more officers of a corporation, by one or more members (if member- managed) or managers (if manager-managed) of a limited liability company, or by an agent of the contractor legally qualified and acceptable to the Owner. If the proposal is made by an individual, his or her name and post office address must be shown, by a partnership the name and post office address of each general and limited partner must be shown; as a joint venture, the name and post office address of each venturer must be shown; by a corporation, the name of the corporation and its business address must be shown, together with the name of the state in which it is incorporated, and the names, titles and business addresses of the president, secretary and treasurer.

7. Nonconforming Proposals

Proposals will be considered nonconforming and may be rejected in the Owner's sole discretion for any of the following reasons:

- a.) If the proposal is on a form other than that furnished by the Owner, or if the form is altered or any portion thereof is detached;
- b.) If there are unauthorized additions, conditional or altered bids, or irregularities of any kind which may tend to make the proposal or any portion thereof incomplete, indefinite or ambiguous as to its meaning;

- c.) If the Bidder adds any provisions reserving the right to accept or reject an award, or to enter into a contract pursuant to an award; or
- d.) If the proposal does not contain a unit price for each pay item listed except in the case of authorized alter pay items.

8. Proposal Guaranty

No proposal will be considered unless accompanied by a bid bond, surety, or similar guaranty of the types and in an amount not less than 5%. All sureties shall be made payable to the "City of Portsmouth". If a bid bond is used by the Bidder it shall be:

- a.) In a form satisfactory to the Owner;
- b.) With a surety company licensed, authorized to do business in, and subject to the jurisdiction of the courts of the State of New Hampshire; and
- c.) Conditioned upon the faithful performance by the principal of the agreements contained in the sub-bid or the general bid.

In the event any irregularities are contained in the proposal guaranty, the Bidder will have four business days (not counting the day of opening) to correct any irregularities. The corrected guaranty must be received by 4:00 p.m. If irregularities are not corrected to the satisfaction of the Owner, the Owner, in its sole discretion, may reject the bid.

9. Delivery of Proposals

When sent by mail, the sealed proposal shall be addressed to the Owner at the address and in the care of the official in whose office the bids are to be received. All proposals shall be filed prior to the time and at the place specified in the invitation for bids. Proposals received after the time for opening of the bids will be returned to the Bidder, unopened.

10. Withdrawal of Proposals

A Bidder will be permitted to withdraw his or her proposal unopened after it has been submitted if the Owner receives a request for withdrawal in writing prior to the time specified for opening the proposals.

11. Public Opening of Proposals

Proposals will be opened and read publicly at the time and place indicated in the invitation for bids. Bidders, their authorized agents, and other interested parties are invited to be present.

12. Disqualification of Bidders

Any or all of the following reasons may be deemed by Owner in its sole discretion as being sufficient for the disqualification of a Bidder and the rejection of his proposal:

- a.) More than one proposal for the same work from an individual, firm, or corporation under the same or different name;
- b.) Evidence of collusion among Bidders;
- c.) Failure to submit all required information requested in the bid specifications;

- d.) Material change of Bidder's conditions from the date of qualification for this project and bid submission that calls into question Bidder's ability to complete the work timely and to specification; or
- e.) Such disqualification would be in the best interests of the Owner.

13. Material Guaranty and Samples

Before any contract is awarded, the Bidder may be required to furnish a complete statement of the origin, composition and manufacture of any or all materials to be used in the construction of the work, and the Owner may, in its sole discretion, reject the bid based on the contents of the statement or as a result of the failure of the Bidder to submit the statement.

AWARD AND EXECUTION OF CONTRACT**DISCOVER PORTSMOUTH ADA ACCESSIBLE BATHROOMS****1. Consideration of Proposals**

a) After the proposals are opened and read, they will be compared on the basis of the total price for all sections of work to be charged to perform the work and any such additional considerations as may be identified in the bid documents. The results of such comparisons will be immediately available to the public. In case of a discrepancy between the prices written in words and those written figures, the prices written in words shall govern. In case of a discrepancy between the total shown in the proposal and that obtained by adding the products of the quantities of items and unit bid prices, the latter shall govern.

2. Award of Contract

If a contract is to be awarded, the award will be made to the lowest responsible and qualified Bidder whose proposal complies with all the requirements prescribed. The successful Bidder will be notified, in writing, mailed to the address on his or her proposal, that his or her bid has been accepted and that the Bidder has been awarded the contract.

The award shall not be considered official until such time that a Purchase Order, fully executed contract or an award letter has been issued by the Finance Director. No presumption of award shall be made by the Bidder until such documents are in hand. Verbal notification of award is not considered official. Any action by the Bidder to assume otherwise is done so at his/her own risk and the City will not be held liable for any expense incurred by a Bidder that has not received an official award.

3. Cancellation of Award

The Owner reserves the right to cancel the award of any contract at any time before the execution of such contract by all parties without any liability of the Owner.

4. Return of Proposal Guaranty

All proposal guaranties, except those of the three lowest Bidders, will be returned upon request following the opening and checking of the proposals. The proposal guaranties of the three lowest Bidders will be returned within ten days following the award of the contract if requested.

5. Contract Bonds

At the time of the execution of the contract, the successful Bidder shall furnish:

- Labor and materials payment bond in the sum equal to 100 percent of the contract amount.
- Performance bond in the sum equal to 100 percent of the contract amount.

At the time of project completion, the Owner may, in its sole discretion, permit the Contractor to substitute a maintenance bond in lieu of holding retainage for the entire guaranty period. If a bond is furnished it shall meet the following criteria:

- The bond shall be in an amount equal to 20 percent of the contract amount. Such bond shall guarantee the repair of all damage due to faulty materials or workmanship provided or done by the contractor. The guarantee shall remain in effect for a period of one year after the date of final acceptance of the job by the Owner.

Each bond shall be: (1) in a form satisfactory to the Owner; (2) with a surety company licensed and authorized to do business and with a resident agent designated for services of process in the State of New Hampshire; and (3) conditioned upon the faithful performance by the principal of the agreements contained in the original bid. All premiums for the contract bonds are to be paid by the contractor.

6. Execution and Approval of Contract

The successful Bidder is required to present all contract bonds, to provide proof of insurance, and to execute the contract within 10 days following receipt of the City's notification of acceptance of the bid. No contract shall be considered as in effect until it has been fully executed by all parties.

7. Failure to Execute Contract

Failure to execute the contract and file an acceptable bond within 10 days after notification of acceptance of bid shall be just cause for the cancellation of the award and the forfeiture of the proposal guarantee which shall become the property of the Owner, not as a penalty, but in liquidation of damages sustained. Award may then be made to the next lowest responsible Bidder, or the work may be re-advertised as the Owner may determine in its sole discretion.

8. Additional Information

Requests for additional information or questions should be to Lori MacGinnis, at purchasing@cityofportsmouth.com or 603-610-7227.

9. Reservation of Rights

The City of Portsmouth reserves the right to reject any or all bids, to waive technical or legal deficiencies, to re-bid, and to accept any bid that it may deem to be in the best interest of the City.

PROPOSAL FORM**DISCOVER PORTSMOUTH ADA ACCESSIBLE BATHROOMS**

CITY OF PORTSMOUTH, N.H.

To the City of Portsmouth, New Hampshire, herein called the Owner.

The undersigned, as Bidder, herein referred to as singular and masculine declares as follows:

1. All interested in the Bid as Principals are named herein;
2. This bid is not made jointly, or in conjunction, cooperation or collusion with any other person, firm, corporation, or other legal entity;
3. No officer, agent or employee of the Owner is directly or indirectly interested in this Bid;
4. Bidder shall identify the subcontractor intended to perform the asbestos abatement work and affirm that the subcontractor has the requisite qualifications.
5. The bidder understands that the quantities of work calculated in the Bid or indicated on the Drawings or in the Specifications or other Contract Documents are approximate and are subject to increase or decrease or deletion as deemed necessary by the Portsmouth City Engineer. Any such changes will not result in or be justification for any penalty or increase in contract prices; and agrees that, if the Bid is accepted the bidder will contract with the Owner, as provided in the Contract Documents, this Bid Form being part of said Contract Documents, and that the bidder will supply or perform all labor, services, machinery, apparatus, tools, supplies and all other activities required by the Contract Documents in the manner and within the time therein set forth, and that the bidder will take in full payment therefore the following item prices, to wit.
6. Bidder shall identify the subcontractor intended to perform the asbestos abatement work and affirm that the subcontractor has the requisite qualifications.

Asbestos Abatement Subcontractor: _____ Contractor Name
 _____ Contractor Address
 _____ Contractor Address Line 2

PROPOSAL FORM (Continued)

THIS PROJECT SHALL BE BID BY LUMP SUM.

BASE BID

Furnish and install all labor materials equipment and furnishing to renovate rest rooms and corridor shown as Limits of Construction for Base Bid on Drawing A001, per Drawings and Specifications.

Price in Words \$ _____

Price in Figures \$ _____

ALTERNATE #1

Furnish and install all labor materials equipment and furnishing to extend ceramic tile on rest room walls to 6'8" above finished floor.

Price in Words \$ _____

Price in Figures \$ _____

ALTERNATE #2

Furnish and install all labor, materials, equipment and furnishing to renovate the staff room shown as Limits of Construction for Alternate #2 on Drawing A001, per Drawings and Specifications.

Price in Words \$ _____

Price in Figures \$ _____

NOTE: Bid award will be based on Base Bid and Alternate #1

The Bidder has received and acknowledged Addenda No. _____ through _____.

All Bids are to be submitted on this form and in a sealed envelope, plainly marked on the outside with the Bidder's name and address and the Project name as it appears at the top of the Proposal Form.

The undersigned agrees that for extra work, if any, performed in accordance with the terms and provisions of the Contract Documents, the Bidder will accept compensation as stipulated therein.

Date

Company

By: _____
Signature

Title: _____

Business Address

City, State, Zip Code

Telephone: _____

In order to follow the City's sustainability practices, future bid invitations/specifications may be sent electronically. Please provide an email address as to where the City could email future bid invitations/specifications of this type. Thank you in advance for your cooperation.

Email Address: _____

BID SECURITY BOND

(This format provided for convenience, actual Bid Bond is acceptable in lieu of, if compatible.)

KNOW ALL MEN BY THESE PRESENTS, that we the undersigned

_____, as Principal, and

_____, as Surety, are hereby

held and firmly bound unto _____

IN THE SUM OF _____

as liquidated damages for payment of which, well and truly to be made we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns.

The condition of this obligation is such that whereas the Principal has submitted to the

A CERTAIN Bid attached hereto and hereby made a part hereof to enter into a contract in writing, hereinafter referred to as the "AGREEMENT" and or "CONTRACT", for

NOW THEREFORE,

- (a) If said Bid shall be rejected or withdrawn as provided in the INFORMATION FOR BIDDERS attached hereto or, in the alternative,
- (b) If said Bid shall be accepted and the Principal shall duly execute and deliver the form of AGREEMENT attached hereto and shall furnish the specified bonds for the faithful performance of the AGREEMENT and/or CONTRACT and for the payment for labor and materials furnished for the performance of the AGREEMENT and or CONTRACT,

then this obligation shall be void , otherwise it shall remain in full force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder in no event shall exceed the amount of this obligation.

BID SECURITY BOND (continued)

The Surety, for value received, hereby agrees that the obligation of said surety and its bond shall be in no way impaired or affected by any extensions of the time within such BID may be accepted, and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the parties hereto have duly executed

this bond on the _____ day of _____, 20__.

(Name of Principal) L.S.

(SEAL)

BY _____

(Name of Surety)

BY _____

CONTRACT AGREEMENT**DISCOVER PORTSMOUTH ADA ACCESSIBLE BATHROOMS**

THIS AGREEMENT made as of the _____ in the year **2020**, by and between the City of Portsmouth, New Hampshire (hereinafter call the Owner) and _____ (hereinafter called the Contractor),

WITNESSETH; that the Owner and Contractor, in consideration of the mutual covenants hereinafter set forth, agree as follows:

ARTICLE I - Work - The Contractor shall perform all work as specified or indicated in the Contract Documents for Discover Portsmouth ADA Accessible Bathrooms (the "Project"). The Contractor shall provide, at his expense, all labor, materials, equipment and incidentals as may be necessary for the expeditious and proper execution of the Project.

ARTICLE II - ENGINEER - The Director of Public Works or his authorized representative will act as City Engineer in connection with completion of the Project in accordance with the Contract Documents.

ARTICLE III - CONTRACT TIME - The work shall commence in accordance with the Notice to Proceed. **All work shall be completed by April 10, 2020, with Substantial Completion by March 25, 2020.**

ARTICLE IV - CONTRACT PRICE Owner shall pay Contractor for performance of the work in accordance with the Contract Documents as shown under item prices in the Bid Proposal.

ARTICLE V - PAYMENT - Partial payments will be made in accordance with the Contract Documents. Upon final acceptance of the work and settlement of all claims, Owner shall pay the Contractor the unpaid balance of the Contract Price, subject to additions and deductions provided for in the Contract Documents.

ARTICLE VI - RETAINAGE – To ensure the proper performance of this Contract, the Owner shall retain ten percent (10%) of the full contract amount until final acceptance. - At the discretion of the City, a maintenance bond may be substituted for the final retainage.

ARTICLE VII - LIQUIDATED DAMAGES - In event the Contractor fails to successfully execute the work within the specified contract time the Owner shall assess the Contractor liquidated damages in the amount of **FIVE HUNDRED DOLLARS (\$500)** for each calendar day beyond the specified completion date. Liquidated damages shall be deducted from the Contract Price prior to final payment of the Contractor.

ARTICLE VIII – CONTRACT DOCUMENTS – The Contract Documents which comprise the contract between Owner and Contractor are attached hereto and made a part hereof and consist of the following:

- 8.1 Contractor's Bid and Bonds
- 8.2 Contract Agreement
- 8.3 Notice of Award, Notice to Proceed
- 8.4 General Requirements, Control of Work, Temporary Facilities, Insurance Requirements, Measurement and Payment
- 8.5 Special Requirements for Community Development Block Grant (CDBG) Projects
- 8.6 Standard and Technical Specifications
- 8.7 Contract Drawings
- 8.8 Special Provisions
- 8.9 Appendices
 - A. Compliance with Laws and Regulations
 - B. Federal Labor Standards Provisions
 - C. Applicable Davis-Bacon Wage Rate Decision
 - D. Asbestos Testing Report, dated August 28, 2019
- 8.10 Any modifications, including change orders, duly delivered after execution of this Agreement.

ARTICLE IX – TERMINATION FOR DEFAULT – Should contractor at any time refuse, neglect, or otherwise fail to supply a sufficient number or amount of properly skilled workers, materials, or equipment, or fail in any respect to prosecute the work with promptness and diligence, or fail to perform any of its obligations set forth in the Contract, Owner may, at its election, terminate the employment of Contractor, giving notice to Contractor in writing of such election, and enter on the premises and take possession, for the purpose of completing the work included under this Agreement, of all the materials, tools and appliances belonging to Contractor, and to employ any other persons to finish the work and to provide the materials therefore at the expense of the Contractor.

ARTICLE X – INDEMNIFICATION OF OWNER – Contractor shall defend, indemnify and hold harmless Owner and its officials and employees from and against all suits, claims, judgments, awards, losses, costs or expenses (including without limitation attorneys' fees) to the extent arising out of or relating to Contractor's alleged negligence or breach of its obligations or warranties under this Contract. Contractor shall defend all such actions with counsel satisfactory to Owner at its own expense, including attorney's fees, and will satisfy any judgment rendered against Owner in such action.

ARTICLE XI – PERMITS – The Contractor shall secure at its own expense, all permits and consents required by law as necessary to perform the work and shall give all notices and pay all fees and otherwise comply with all applicable City, State, and Federal laws, ordinances, rules and regulations. City of Portsmouth permit fees will not be required or will be the responsibility of the Owner. All other fees to be the responsibility of the Contractor.

ARTICLE XII – INSURANCE – The Contractor shall secure and maintain, until acceptance of the work, insurance with limits not less than those specified in the Contract.

ARTICLE XIII – MISCELLANEOUS –

- A. Neither Owner nor Contractor shall, without the prior written consent of the other, assign, sublet or delegate, in whole or in part, any of its rights or obligations under any of the Contract Documents; and, specifically not assign any monies due, or to become due, without the prior written consent of Owner.
- B. Owner and Contractor each binds himself, his partners, successors, assigns and legal representatives, to the other party hereto in respect to all covenants, agreements and obligations contained in the Contract Documents.
- C. The Contract Documents constitute the entire Agreement between Owner and Contractor and may only be altered amended or repealed by a duly executed written instrument.
- D. The laws of the State of New Hampshire shall govern this Contract without reference to the conflict of law principles thereof.
- E. Venue for any dispute shall be the Rockingham County Superior Court unless the parties otherwise agree.

IN WITNESS WHEREOF, the parties hereunto executed this AGREEMENT the day and year first above written.

BIDDER:

BY: _____

TITLE: _____

CITY OF PORTSMOUTH, N.H.

BY: _____
John P. Bohenko

TITLE: City Manager

NOTICE OF INTENT TO AWARD

Date:

To:

IN AS MUCH as you were the low responsible Bidder for work entitled:

DISCOVER PORTSMOUTH ADA ACCESSIBLE BATHROOMS

You are hereby notified that the City intends to award the aforesaid project to you.

Immediately take the necessary steps to execute the Contract and to provide required bonds and proof of insurance within ten (10) calendar days from the date of this Notice.

The City reserves the right to revoke this Notice if you fail to take the necessary steps to execute this Contract.

City of Portsmouth
Portsmouth, New Hampshire

Judie Belanger,
Finance Director

NOTICE TO PROCEED

DATE:

PROJECT: **DISCOVER PORTSMOUTH ADA ACCESSIBLE BATHROOMS**

TO:

YOU ARE HEREBY NOTIFIED TO COMMENCE WORK IN ACCORDANCE

WITH THE AGREEMENT DATED,

ALL WORK SHALL BE COMPLETED BY _____.

CITY OF PORTSMOUTH, N.H.

BY: Peter H. Rice

TITLE: Public Works Director

ACCEPTANCE OF NOTICE

RECEIPT OF THE ABOVE NOTICE TO
PROCEED IS HEREBY ACKNOWLEDGED BY

This the _____ day of _____ 20__

By:_____

Title:_____

CHANGE ORDER

Change Order #

Date of Issuance:

Owner: CITY OF PORTSMOUTH, N.H

Contractor:

You are directed to make the following changes in the Contract Documents:

Description:

Purpose of Change Order:

Attachments:

CHANGE IN CONTRACT PRICE**CHANGE IN CONTRACT TIME**Original Contract Price:
\$

Original Completion Date:

Contract Price prior to this
Change Order:
\$Contract Time prior to this
Change Order:Net Increase of
this Change Order:
\$Net Increase or Decrease of
this Change Order:Contract Price with all
approved Change Orders:
\$Contract Time with all
approved Change Orders:**RECOMMENDED:****APPROVED:**by _____
Planning Directorby _____
City Financeby _____
City Managerby _____
Contractor

PERFORMANCE BOND

(This format provided for convenience, actual Performance Bond is acceptable in lieu, if compatible)

Bond Number _____

KNOW ALL MEN BY THESE PRESENTS

that _____ as Principal, hereinafter called Contractor, and _____ (Surety Company) a corporation organized and existing under the laws of the State of _____ and authorized to do business in the State of New Hampshire as surety, hereinafter called Surety, are held and firmly bound unto the City of Portsmouth, N.H. Oblige, hereinafter called Owner, in the amount of _____ Dollars (\$ _____), for the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents. WHEREAS, Contractor has by written agreement dated _____ entered into a contract with Owner for _____ in accordance with drawings and specifications prepared by the Public Works Department, 680 Peverly Hill Road, Portsmouth, N.H. 03801, which contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Contractor shall well and faithfully do and perform the things agreed by him to be done and performed, according to the terms of said Contract and such alterations as may be made in said Contract during progress work, and shall further indemnify and save harmless the said Owner in accordance with the Contract and shall remedy without cost to the Owner any defect which may develop within one year from the time of completion and acceptance of the work.

The Surety hereby waives notice of any alteration in work or extension of time made by the Owner or any of its agents or representatives.

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

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

PERFORMANCE BOND (continued)

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

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

Signed and sealed this _____ day of _____

A.D., 20____ .

In the presence of:

(Witness) (Principal) (Seal) BY: _____

(Surety Company)

(Witness) (Title) (Seal) BY: _____

Note:

If the Principal (Contractor) is a partnership, the Bond should be signed by each of the partners.

If the Principal (Contractor) is a corporation, the Bond should be signed in its correct corporate name by its duly authorized Officer or Officers.

If this bond is signed on behalf of the Surety by an attorney-in-fact, there should be attached to it a duly certified copy of his Power of Attorney showing his authority to sign such Bonds.

There should be executed an appropriate number of counterparts of the bond corresponding to the number of counterparts of the Agreement.

LABOR AND MATERIALS PAYMENT BOND

(This format provided for convenience, actual Labor and Material Bond is acceptable in lieu, if compatible)

Bond Number _____

KNOW ALL MEN BY THESE PRESENTS:

that _____

as Principal, hereinafter called Contractor, and _____ (Surety Company) a corporation organized and existing under the laws of the State of

_____ and authorized to do business in the State of New Hampshire hereinafter called Surety, are held and firmly bound unto the City of Portsmouth, N.H. Obligee, hereinafter called Owner, for the use and benefit of claimants as herein below defined, in the

amount of _____ Dollars (\$ _____), for the payment whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal has by written agreement dated _____ entered into a

contract with Owner for _____ in accordance with drawings and specifications prepared by the Public Works Department, 680 Peverly Hill Road, Portsmouth, N.H. 03801, which contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that the Principal shall promptly make payment to all claimants as hereinafter defined, for all labor and material used or reasonably required for use in the performance of the Contract and for the hire of all equipment, tools, and all other things contracted for or used in connection therewith, then this obligation shall be void, otherwise it shall remain in full force and effect, subject however, to the following conditions:

(1) A claimant is defined as one having a direct contract with the Principal or, with a subcontractor of the Principal for labor, material, equipment, or other things used or reasonably required for use in the performance of the Contract. "Labor and material" shall include but not be limited to that part of water, gas, power, light, heat, oil and gasoline, telephone service or rental of equipment applicable to the Contract.

(2) The above named Principal and Surety hereby jointly and severally agree with the Owner that every claimant as herein defined, who has not been paid in full before the expiration of a period of ninety (90) days after the date on which the last of such claimant's work or labor was done or performed, or materials were furnished by such a claimant, may sue on this bond for the use of such claimant, prosecute the suit by final judgment for such sum or sums as may be

LABOR AND MATERIAL PAYMENT BOND (continued)

justly due claimant, and have execution thereon. The Owner shall not be liable for the payment of any such suit or any costs or expenses of any such suit, and principal and surety shall jointly and severally indemnify, defend and hold the Owner harmless for any such suit, costs or expenses.

(3) No suit or action shall be commenced hereunder by any claimant:

(a) Unless Claimant, other than one having a direct contract with the Principal, shall have given notice to all the following:

The Principal, the Owner and the Surety above named, within six (6) calendar months after such claimant did or performed the last of the work or labor, or furnished the last of the materials for which said claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished, or for whom the work or labor was done or performed. Such notice shall be served by mailing the same by registered mail or certified mail, postage prepaid, in an envelope addressed to the Principal, Owner, and Surety, at any place where an office is regularly maintained for the transaction of business, or served in any manner in which legal process may be served in the State of New Hampshire save that such service need not be made by a public officer.

(b) After the expiration of one (1) year following the date on which Principal ceased all work on said contract, it being understood, however, that if any limitation embodied in this bond is prohibited by any law controlling the construction hereof, such limitation shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.

(c) Other than in a State court of competent jurisdiction in and for the county or other political subdivision of the State in which the project, or any part thereof, is situated, or in the United States District Court for the district in which the project, or any part thereof, is situated, and not elsewhere.

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

Signed and sealed this _____ day of _____, 20____. In the presence of:

(Witness) BY: _____
(Principal) (Seal)

(Surety Company)

(Witness) BY: _____
(Title) (Seal)

LABOR AND MATERIALS PAYMENT BOND (continued)Note:

If the Principal (Contractor) is a partnership, the Bond should be signed by each of the partners.

If the Principal (Contractor) is a corporation, the Bond should be signed in its correct corporate name by its duly authorized Officer or Officers.

If this bond is signed on behalf of the Surety by an attorney-in-fact, there should be attached to it a duly certified copy of his Power of Attorney showing his authority to sign such Bonds.

There should be executed an appropriate number of counterparts of the bond corresponding to the number of counterparts of the Agreement.

MAINTENANCE BOND

At the Owner's election, a maintenance bond may be substituted for retainage at the completion of the project. If the Owner permits a maintenance bond, it shall be in the amount of Twenty Percent (20%) of the contract price with a corporate surety approved by the Owner. Such bond shall be provided at the time of Contract completion and shall guarantee the repair of all damage due to faulty materials or workmanship provided or done by the Contractor. This guarantee shall remain in effect for a period of one year after the date of final acceptance of the job by the Owner.

CONTRACTOR'S AFFIDAVIT

STATE OF _____:

COUNTY OF _____:

Before me, the undersigned, a _____
(Notary Public, Justice of the Peace)

in and for said County and State personally appeared, _____
(Individual, Partner, or duly authorized representative of Corporate)

who, being duly sworn, according to law deposes and says that the cost of labor, material, and equipment and outstanding claims and indebtedness of whatever nature arising out of the performance of the Contract between

CITY OF PORTSMOUTH, NEW HAMPSHIRE

and _____
(Contractor)

of _____

Dated: _____

has been paid in full for Construction of:

DISCOVER PORTSMOUTH ADA ACCESSIBLE BATHROOMS

(Individual, Partner, or
duly authorized
representative of
Corporate Contractor)

Sworn to and subscribed
before me this _____ day
of _____ 20____

CONTRACTOR'S RELEASE

KNOW ALL MEN BY THESE PRESENTS

that _____ (Contractor) of
 _____, County of _____ and State of
 _____ does hereby acknowledge
 that _____ (Contractor)
 has on this day had, and received from the CITY OF PORTSMOUTH NEW HAMPSHIRE, final and
 completed payment for the Construction of:

DISCOVER PORTSMOUTH ADA ACCESSIBLE BATHROOMS
 NOW THEREFORE, the said _____

(Contractor)

for myself, my heirs, executors, and administrators) (for itself, its successors and assigns) do/does by
 these presents remise, release, quit-claim and forever discharge the City of Portsmouth, New
 Hampshire, its successors and assigns, of and from all claims and demands arising from or in
 connection with the said Contract dated _____, and of and from all, and all manners of
 action and actions, cause and causes of action and actions, suits, debts, dues, duties, sum and sums of
 money, accounts, reckonings, bonds, bills, specifications, covenants, contracts, agreements,
 promises, variances, damages, judgments, extents, executions, claims and demand, whatsoever in law
 of equity, or otherwise, against the City of Portsmouth, New Hampshire, its successors and assigns,
 which (I, my heirs, executors, or administrators) (it, its successors and assigns) ever had, now have or
 which (I, my heirs, executors, or administrators) (it, its successors and assigns) hereafter can shall or
 may have, for, upon or by reason of any matter, cause, or thing whatsoever; from the beginning of
 record time to the date of these presents.

IN WITNESS WHEREOF,

Contractor:

 print name of witness: _____

By: _____
 Its Duly Authorized _____

Dated: _____

GENERAL REQUIREMENTS

SCOPE OF WORK

1. INTENT OF CONTRACT

The intent of the Contract is to provide for the construction and completion in every detail of the work described. The Contractor shall furnish all labor, materials, equipment, tools, transportation and supplies required to complete the work in accordance with the terms of the Contract. The Contractor shall be required to conform to the intent of the plans and specifications. No extra claims shall be allowed for portions of the work not specifically addressed in the plans and specifications but required to produce a whole and complete project, such work will be considered subsidiary to the bid items.

2. INCIDENTAL WORK

Incidental work items for which separate payment is not measured includes, but is not limited to, the following items:

- a. Mobilization & Demobilization
- b. Clean up
- c. Temporary Facilities
- d. Transportation and disposal of demolition debris and waste materials
- f. Restoration of property
- g. Cooperation with other contractors, abutters and utilities.
- h. Accessories and fasteners or components required to make items paid for under unit prices or lump sum items complete and functional.

3. ALTERATION OF PLANS OR OF CHARACTER OF WORK

The Owner reserves the right, without notice to Surety, to make such alterations of the plans or of the character of the work as may be necessary or desirable to complete fully and acceptably the proposed construction; provided that such alterations do not increase or decrease the contract cost. Within these cost limits, the alterations authorized in writing by the Owner shall not impair or affect any provisions of the Contract or bond and such increases or decreases of the quantities as a result from these alterations or deletions of certain items, shall not be the basis of claim for loss or for anticipated profits by the contractor. The contractor shall perform the work as altered at the contract unit price or prices.

4. EXTRA WORK ITEMS

Extra work shall be performed by the Contractor in accordance with the specifications and as directed, and will be paid for at a price as provided in the Contract documents or if such pay items are not applicable than at a price negotiated between the contractor and the Owner or at the unit bid price. If the Owner determines that extra work is to be performed, a change order will be issued.

5. CHANGE ORDERS

The Owner reserves the right to issue a formal change order for any increase, decrease, deletion, or addition of work or any increase in contract time or price. The contractor shall be required to sign the change order and it shall be considered as part of the Contract documents.

6. FINAL CLEANING UP

Before acceptance of the work, the contractor shall remove from the site all machinery, equipment, surplus materials, rubbish, temporary buildings, barricades and signs. All parts of the work shall be left in a neat and presentable condition. On all areas used or occupied by the contractor, regardless of the contract limits, the Bidder shall clean-up all sites and storage grounds.

The items prescribed herein will not be paid for separately, but shall be paid for as part of the total contract price.

7. ERRORS AND INCONSISTENCY IN CONTRACT DOCUMENTS

Any provisions in any of the Contract Documents that may be in conflict with the paragraphs in these General Requirements shall be subject to the following order of precedence for interpretation.

1. Technical Specifications will govern General Requirements.
2. Special Provisions will govern Technical Specifications.
3. Plans will govern Special Provisions, Technical Specifications, and General Requirements.

CONTROL OF WORK

1. AUTHORITY OF ENGINEER

(a) All work shall be done under supervision of the City Engineer and to his satisfaction. The City Engineer will decide all questions which may arise as to the quality and acceptability of materials furnished and work performed and as to the rate of progress of the work; all questions that may arise as to the interpretation of the plans and specifications; and all questions as to the acceptable fulfillment of the Contract by the Contractor.

(b) The City Engineer will have the authority to suspend the work wholly or in part for such periods as he may deem necessary due to the failure of the Contractor to correct conditions unsafe for workers or the general public; for failure to carry out provisions of the Contract; for failure to carry out orders; for conditions considered unsuitable for the prosecution of the work, including unfit weather; or for any other condition or reason deemed to be in the public interest. The Contractor shall not be entitled any additional payments arising out of any such suspensions.

(c) The Owner reserves the right to demand a certificate of compliance for a material or product used on the project. When the certificate of compliance is determined to be unacceptable to the City Engineer the Contractor may be required to provide engineering and testing services to guarantee that the material or product is suitable for use in the project, at its expense (see Sample of Certificate of Compliance).

2. PROTECTION AND RESTORATION OF PROPERTY AND LANDSCAPES

(a) The Contractor shall use every precaution to prevent injury or damage to buildings, pavement, wires, poles, or other property of public utilities; trees, shrubbery, crops, and fences along and adjacent to the right-of-way, all underground structures such as pipes and conduits, within or outside of the right-of-way; and the Contractor shall protect and carefully preserve all property marks until an authorized agent has witnessed or otherwise referenced their location.

(b) The Contractor shall be responsible for all damage or injury to property of any character, during the prosecution of the work, resulting from any act, omission, neglect, or misconduct in his manner or method of executing the work, or at any time due to defective work or materials, and said responsibility will not be released until the project shall have been completed and accepted.

(c) When or where any direct or indirect damage or injury is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work, or as a result of the failure to perform work by the Contractor, the Contractor shall restore, at its own expense, such property to a condition similar or equal to that existing before such damage or injury was done, by repairing rebuilding, or otherwise restoring as may be directed, or the Contractor shall make good such damage or injury in an acceptable manner.

(d) If the Contractor fails to repair, rebuild or otherwise restore such property as may be deemed necessary, the Owner, after 48 hours notice, may proceed to do so, and the cost thereof may be deducted from any money due or which may become due the Contractor under the contract.

CONTROL OF WORK (continued)

(e) It is the intent of the Parties that the Contractor preserve, to as great an extent as possible, the natural features of the site.

(f) All facilities, infrastructure and features shall be protected and preserved during construction. Any damaged items shall be repaired or replaced by the contractor at no cost to the Owner.

3. MAINTENANCE DURING CONSTRUCTION

The Contractor shall maintain the work during construction and until the project is accepted. This maintenance shall constitute continuous and effective work prosecuted day by day, with adequate equipment and workers to ensure that the structure is kept in satisfactory conditions at all times.

4. SAFETY PRECAUTIONS

Upon commencement of work, the Contractor shall be responsible for initiating, maintaining and supervising all safety precautions necessary to ensure the safety of employees on the site, other persons who may be affected thereby, including the public, and other property at the site or adjacent thereto.

5. PERMITS

It will be the responsibility of the Contractor to obtain all permits required for the operation of equipment in, on, all city streets and public ways.

6. BARRICADES, WARNING SIGNS AND TRAFFIC OFFICERS

(a) The Contractor shall provide, erect and maintain all necessary barricades, suitable and sufficient lights, danger signals, signs and other traffic control devices, and shall take all necessary precautions for the protection of the work and safety of the public. Roadway closed to traffic shall be protected by effective barricades. Obstructions shall be illuminated during hours of darkness. Suitable warning signs shall be provided to control and direct traffic in a proper manner, as approved by the engineer.

(b) The Contractor will be held responsible for all damage to the work from traffic, pedestrians, animals or any other cause due to lack of adequate controlling devices.

(c) The Contractor shall provide such police officers as the City Engineer deems necessary for the direction and control of traffic within the site of project.

The work prescribed herein will not be paid for separately but will be paid for as part of the Contract Price unless specifically appearing as a bid item.

TEMPORARY FACILITIES

1. STORAGE FACILITIES

(a) The Contractor shall not store materials or equipment in a public right-of-way beyond the needs of one working day. Equipment and materials shall be stored in an approved location.

(b) The Contractor shall protect all stored materials from damage by weather or accident and shall ensure adequate drainage at and about the storage location.

(c) Prior to final acceptance of the work all temporary storage facilities and surplus stored materials shall be removed from the site.

2. SANITARY FACILITIES

(a) The Contractor shall provide for toilet facilities for the use of the workers employed on the work.

(b) Temporary toilet facilities may be installed provided that the installation and maintenance conform with all State and local laws, codes, regulations and ordinances governing such work. They shall be properly lit and ventilated, and shall be kept clean at all times.

(c) Prior to final acceptance of the work all temporary toilet facilities shall be removed from the site.

3. CONSTRUCTION STAGING

Contractor may utilize parking area behind building at 10 Middle Street, in spaces designated by Owner, for construction vehicles and staging.

INSURANCE REQUIREMENTS

Insurance shall be in such form as will protect the Contractor from all claims and liabilities for damages for bodily injury, including accidental death, and for property damage, which may arise from operations under this contract whether such operation by himself or by anyone directly or indirectly employed by him.

1. AMOUNT OF INSURANCE

- A) Comprehensive General Liability:
Bodily injury or Property Damage - \$2,000,000
Per occurrence and general aggregate
- B) Automobile and Truck Liability:
Bodily Injury or Property Damage - \$2,000,000
Per occurrence and general aggregate

Additionally, the Contractor shall purchase and maintain the following types of insurance:

- A) Workers Comprehensive Insurance coverage sufficient to meet statutory requirements for all people employed by the Contractor to perform work on this project.
- B) Contractual Liability Insurance coverage in the amounts specified above under Comprehensive General Liability.
- C) Product and Completed Operations coverage to be included in the amounts specified above under Comprehensive General Liability.
- D) Pollution Liability coverage of at least \$1,000,000 sufficient to cover the work described in this contract.

ADDITIONAL INSURED

All liability policies (including any excess policies used to meet coverage requirements) shall include the City of Portsmouth, New Hampshire as named Additional Insured.

- 1) The contractor's insurance shall be primary in the event of a loss.
- 2) The Additional Insured endorsement must include language specifically stating that the entity is to be covered for all activities performed by, or on behalf of, the contractor, including the City of Portsmouth's general supervision of the contractor.
- 3) City of Portsmouth shall be listed as a Certificate Holder and Additional Insured. The City shall be identified as follows:

City of Portsmouth
Attn: Legal Department
1 Junkins Avenue
Portsmouth, NH 03801

MEASUREMENT AND PAYMENT

1. MEASUREMENT OF QUANTITIES

(a) All work completed under the contract will be measured according to the United States standard measure.

(b) The method of measurement and computations to be used in determination of quantities of material furnished and of work performed under the contract will be those methods generally recognized as conforming to good engineering practice. Unless otherwise stated all quantities measured for payment shall be computed or adjusted for "in place" conditions.

(c) Unless otherwise specified, longitudinal measurements for area computations will be made horizontally, and no deductions will be made for individual fixtures having an area of 9 square feet or less. Unless otherwise specified, transverse measurements for area computations will be the dimensions shown on the plans or ordered in writing.

(d) Structures will be measured according to lines shown on the plans or as ordered unless otherwise provided for elsewhere in the specifications.

(e) Removal and replacement of existing roof membrane and insulation shall be reimbursed at unit price per square foot as measured in-place.

(f) The term "lump sum" when used as an item of payment will mean complete payment for the work described in the item.

(g) When a complete structure or structural unit (in effect, "lump sum" work) is specified as the unit of measurement, the unit will be construed to include all necessary fittings and accessories, so as to provide the item complete and functional. Except as may be otherwise provided, partial payments for lump sum items will be made approximately in proportion to the amount of the work completed on those items.

(h) Material wasted without authority will not be included in the final estimate.

2. SCOPE OF PAYMENT

(a) The Contractor shall receive and accept compensation provided for in the contract as full payment for furnishing all materials and for performing all work under the contract in a complete and acceptable manner and for all risk, loss, damage or expense of whatever character arising out of the nature of the work or the prosecution thereof.

(b) The Contractor shall be liable to the Owner for failure to repair, correct, renew or replace, at his own expense, all damage due or attributable to defects or imperfections in the construction which defects or imperfections may be discovered before or at the time of the final inspection and acceptance of the work.

(c) No monies, payable under the contract or any part thereof, except the first estimate, shall become due or payable if the Owner so elects, until the Contractor shall satisfy the Owner that the Contractor has fully settled or paid all labor performed or furnished for all equipment hired, including trucks, for all materials used, and for fuels, lubricants, power tools, hardware and supplies purchased by the Contractor and used in carrying out said contract and for labor and parts furnished upon the order of said Contractor for the repair of equipment used in carrying out said contract; and the Owner, if he so elects, may pay any and all such bills, in whole or in part, and deduct the amount of amounts so paid from any partial or final estimate, excepting the first estimate.

3. COMPENSATION FOR ALTERED QUANTITIES

(a) Except as provided for under the particular contract item, when the accepted quantities of work vary from the quantities in the bid schedule the Contractor shall accept as payment in full, so far as contract items are concerned, at the original contract unit prices for the accepted quantities of work done. No allowance will be made for any increased expense, loss of expected reimbursement, or loss of anticipated profits suffered or claimed by the Contractor resulting either directly from such alterations or indirectly from unbalanced allocation among the contract items of overhead expense on the part of the Bidder and subsequent loss of expected reimbursements therefore or from any other cause.

(b) Extra work performed will be paid for at the contract bid prices or at the price negotiated between the Owner and the Contractor if the item was not bid upon. If no agreement can be negotiated, the Contractor will accept as payment for extra work, cost plus 15% (overhead and profit). Costs shall be substantiated by invoices and certified payroll.

4. PARTIAL PAYMENTS

Partial payments will be made on a monthly basis, after satisfactory receipt of weekly certified payroll, during the contract period. From the total amount ascertained as payable, an amount equivalent to ten percent (10%) of the whole will be deducted and retained by the Owner until such time as the work receives final acceptance.

5. SUBSTANTIAL COMPLETION AND FINAL COMPLETION

Before requesting Substantial Completion inspection, Contract shall complete the following:

1. Submit specific warranties, maintenance agreements, and similar documents.
2. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities.
3. Submit Record Drawings and Specifications, operation and maintenance manuals and similar final record information.
4. Deliver tools, spare parts, extra materials, and similar items.
5. Remove temporary facilities and controls.
6. Advise Owner of changeover information related to Owner's occupancy, operation, and maintenance.
7. Complete final cleaning requirements, including touchup painting.
8. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

On receipt of Contractor's request for inspection for Substantial Completion, City Engineer will proceed with inspection and advise Contractor of unfulfilled requirements. Owner will prepare the Certificate of Substantial Completion after inspection or advise Contractor of items that must be completed or corrected before the certificate will be issued.

Request inspection for certification of Final Completion, once the following are complete:

1. Submit a copy of Substantial Completion inspection list stating that each item has been completed or otherwise resolved for acceptance.
2. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems as may be applicable.

City Engineer will reinspect the work on receipt of notice that the Work has been completed. On completion of a reinspection, Owner will prepare a final Certificate for Payment if the work is completed satisfactorily. If the work is incomplete, Owner will advise Contractor of the Work that is incomplete or obligations that have not yet been fulfilled.

6. ACCEPTANCE AND FINAL PAYMENT

(a) When the project has been accepted and upon submission by the Contractor of all required reports, completed forms and certifications, the Owner will review the final estimate of the quantities of the various classes of work performed. The Contractor may be required to certify that all bills for labor and material used under this contract have been paid.

(b) The Contractor shall file with the Owner any claim that the Contractor may have regarding the final estimate at the same time the Contractor submits the final estimate. Failure to do so shall be a waiver of all such claims and shall be considered as acceptance of the final estimate. From the total amount ascertained as payable, an amount equivalent to ten percent (10%) of the whole will be deducted and retained by the Owner until such time as the work receives final acceptance. This retainage may be waived, at the discretion of the City, provided the required Maintenance Bond has been posted. After approval of the final estimate by the Owner, the Contractor will be paid the entire sum found to be due after deducting all previous payments and all amounts to be retained or deducted under the provisions of the contract.

(c) All prior partial estimates and payments shall be subject to correction in the final estimate and payment.

7. GENERAL GUARANTY AND WARRANTY OF TITLE

(a) Neither the final certification of payment nor any provision in the contract nor partial or entire use of the improvements embraced in this Contract by the Owner or the public shall constitute an acceptance of work not done in accordance with the Contract or relieve the Contractor of liability in respect to any express or implied warranties or responsibility for faulty materials or workmanship. The Contractor shall promptly remedy any defects in the work and pay for any damage to other work resulting therefrom which shall appear within a period of twelve (12) months from the date of final acceptance of the work. The Owner will give notice of defective materials and work with reasonable promptness.

(b) No material, supplies or equipment to be installed or furnished under this Contract shall be purchased subject to any chattel mortgage or under a conditional sale, lease purchase or other agreement by which an interest therein or in any part thereof is retained by the Seller or supplier. The Contractor shall warrant good title to all materials, supplies and equipment installed or incorporated in the work and upon completion of all work, shall deliver the same together with all improvements and appurtenances constructed or placed thereon by him to the Owner free from any claims, liens or charges. Neither the Contractor nor any person, firm or corporation furnishing any material or labor for any work covered by this Contract shall have the right to a lien upon any improvements or appurtenances thereon.

Nothing contained in this paragraph, however, shall defeat or impair the right of persons furnishing materials or labor to recover under any bond given by the Contractor for their protection or any rights under any law permitting such persons to look to funds due the Contractor in the hands of the Owner. The provisions of this paragraph shall be inserted in all subcontractors and material contracts and notice of its provisions shall be given to all persons furnishing materials for the work when no formal contract is entered into for such materials.

8. NO WAIVER OF LEGAL RIGHTS

(a) Upon completion of the work, the Owner will expeditiously make final inspection and notify the Contractor of acceptance. Such final acceptance, however, shall not preclude or stop the Owner from correcting any measurement, estimate, or certificate made before or after completion of the work, nor shall the Owner be precluded or be stopped from recovering from the Contractor or his Surety, or both, such overpayment as it may sustain by failure on the part of the Contractor to fulfill his obligations under the contract. A waiver on the part of the Owner of any breach of any part of the contract shall not be held to be a waiver of any other or subsequent breach.

(b) The Contractor, without prejudice to the Contract shall be liable to the terms of the Contract, shall be liable to the Owner for latent defects, fraud or such gross mistakes as may amount to fraud, and as regards the Owner's right under any warranty or guaranty.

9. TERMINATION OF CONTRACTOR'S RESPONSIBILITY

Whenever the improvement provided for by the Contract shall have been completely performed on the part of the Contractor and all parts of the work have been released from further obligations except as set forth in his bond and as provided in Section 8 above.

SPECIAL REQUIREMENTS FOR
COMMUNITY DEVELOPMENT BLOCK GRANT (CDBG) FUNDED PROJECTS

AUTHORITY

Provisions of this Agreement are pursuant to the authority set forth in Title 24 of the Code of Federal Regulations, Part 570 (Housing and Urban Development regulations concerning Community Development Block Grants (CDBG)), and all other applicable federal, state, county or municipal authorities which shall impose any local laws, regulations and policies governing funds provided under this Agreement.

FUNDING

This project is funded in part by the City's Community Development Block Grant (CDBG), which is received from the U.S. Department of Housing and Urban Development and administered by the Portsmouth Community Development Department. Project work must be completed in accordance with all applicable statutes, laws, and regulations.

ASSURANCES

1. The CONTRACTOR will comply with Title VI of the Civil Rights Act of 1964, codified in United States Code Title 42 2000 (d), and implemented at 24 CFR Part 1 as well as 24 CFR Part 570.602, and in accordance therewith, no person in the United States shall, on the grounds of race, color, national origin, religion, age or sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under, any program or activity funded in whole or in part with the Community Development funds or any other Federal financial assistance. The CONTRACTOR will immediately take any measures necessary to effectuate this Agreement.
2. CONTRACTOR will comply with Section 3 of the Housing and Urban Development Act of 1968, as amended; and implemented at 24 CFR Part 135 and in accordance therewith, in all work made possible by or resulting from this Agreement, affirmative action will be taken to ensure that residents (preferably low to moderate income as defined by U.S. Housing and Urban Development) of the City are given maximum opportunities for training and employment and that business concerns located in or owned in substantial part by residents of the City are to the greatest extent feasible, awarded contracts.
3. As this Agreement is funded by monies of the United States, CONTRACTOR shall comply with all of the provisions of Executive Order No. 11246 ("Equal Employment Opportunity") as supplemented by the regulations of the United States Department of Labor (41 C.F.R. Part 60), and with any rules, regulations and guidelines as the State of New Hampshire or the United States issue to implement these regulations. All activities and contracts are subject to Executive Order 11246, as amended and implemented at 41 CFR Chapter 60. In carrying out the Statement of Work (Exhibit A), the CONTRACTOR shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin, marital or familial status, age, mental or physical handicap. The CONTRACTOR shall post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Government setting forth the provisions of this nondiscrimination clause. The CONTRACTOR shall state that all qualified applicants will receive consideration for employment without regard to race,

color, religion, sex, national origin, marital or familial status, age, mental or physical handicap. The CONTRACTOR shall incorporate the foregoing requirements of this paragraph in all of its contracts for program work, and will require all of its subcontractors for such work to incorporate all such EEO requirements as are applicable. CONTRACTOR further agrees to permit the State, the United States, or any designated representative of either, to have access to any of the CONTRACTOR's books, records, and accounts for the purpose of ascertaining compliance with the aforesaid rules regulations and orders, and the covenants and conditions of this Agreement.

4. CONTRACTOR shall comply with all other program requirements as described in this Agreement and in 24 CFR Part 570.503, and listed in Appendix A "Compliance by Grantee and Any Contractors, and Subcontractors with Laws and Regulations."

5. CONTRACTOR shall comply with Federal Labor Standards and Applicable Davis-Bacon Wage Rates, as attached in Appendices B and C and incorporated herein by reference.

CONFLICT OF INTEREST

No officer, employee or agent of the City, or any other person who exercises any functions or responsibilities in connection with the Community Development Program, shall have any personal or financial interest, direct or indirect, in this Agreement; and, the CONTRACTOR shall take appropriate steps to assure compliance with the conflict of interest rules in 2 CFR Part 200.112.

POLITICAL ACTIVITY PROHIBITED - HATCH ACT

Neither the Community Development funds provided under this Agreement, nor administration of this project shall be in any way or to any extent engaged in the conduct of political activities in contravention of Chapter 15 of Title 5, United States Code.

FAITH-BASED ORGANIZATIONS

Executive Order 13279 allows a government contractor or subcontractor that is a religious organization, corporation, association, educational institution, or society to take religion into consideration in the employment of individuals to perform work connected with the services offered by such corporation, association, educational institution, or society of its activities. Such contractors and subcontractors are not exempt or excused from complying with the other requirements contained in Executive Order 11246. CONTRACTOR must adhere to 24 CFR 570.200(j) Faith-based activities.

DRUG FREE WORKPLACE

The CONTRACTOR shall establish a drug-free workplace policy that shall include:

1. Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the CONTRACTOR's workplace and specifying the actions that will be taken against employees for violation of such prohibition;
2. Establish an ongoing drug-free awareness program to inform employees about:
 - a. The dangers of drug abuse in the workplace;

- b. The CONTRACTOR's policy of maintaining a drug-free workplace;
- c. Any available drug counseling, rehabilitation, and employee assistance programs; and;
- d. The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace.

ENVIRONMENTAL REVIEW COMPLIANCE

The CONTRACTOR agrees to abide by provisions of the National Environmental Policy Act of 1969 and other provisions of law which further the purposes of such Act as required by Title 1 of the Housing and Community Development Act of 1974 as amended from time to time and in compliance with the Environmental Review Procedures of the Community Development Block Grant Program at CFR Part 58 and any subsequent regulations issued by the U.S. Department of Housing and Urban Development (HUD). The CONTRACTOR agrees that any costs incurred prior to the City receiving a Release of Funds authorization from HUD are not eligible for reimbursement. The CONTRACTOR further agrees not to obligate funds or begin implementation of the project prior to the CONTRACTOR receiving specific written authorization from the City to proceed and where applicable, a formal Removal of Grant Conditions by U.S. Department of Housing and Urban Development (HUD).

LEAD BASED PAINT

The CONTRACTOR agrees to abide by provisions of 24 CFR Part 35 Lead Based Paint Poisoning Prevention in Certain Residential Structures. The Final Rule Published by U.S. Department of Housing and Urban Development (HUD) effective as of January 11, 2002.

TERMINATION

CONTRACTOR and the City will comply with the noncompliance and termination provisions in 2 CFR 200.338. In addition to the remedies for noncompliance in 2 CFR §200.338, in accordance with 2 CFR §200.338 and 339, the City may suspend or terminate this Agreement in whole or in part if the CONTRACTOR fails to comply with any terms and conditions of this Agreement or upon the occurrence of any Event of Default or any other breach of this Agreement. The City can withhold all funding and disbursements, demand repayment for amounts disbursed, terminate all payments, and/or exercise all rights and remedies available to it under the terms of this Agreement, the Grant Documents, under statutory law, equity or under common law. If the City terminates this Agreement, the CONTRACTOR shall also forfeit to the City all unexpended monies awarded under the Agreement. CONTRACTOR may also be required to refund all CDBG funds awarded by the City. In accordance with 2 CFR §200.339, the City can terminate the Agreement with the consent of the CONTRACTOR in which case the CONTRACTOR and the City must agree upon the termination conditions, including the effective date, and in the case of partial termination, the portion to be terminated. In accordance with 2 CFR §200.339(a)(4), this Agreement may also be terminated by the City with written notification setting forth the reason for such termination, the effective date and in the case of partial termination, the portion to be terminated. However, if the City determines in the case of partial termination that the reduced or modified portion of the award will not be accomplished for which the award was made, the City may terminate the award in its entirety. If this award is terminated or partially terminated, the CONTRACTOR remains responsible for compliance with the closeout requirements in 2 CFR §200.343 and post-closeout requirements set forth in 2 CFR §200.344. All remedies shall be deemed cumulative and, to the extent permitted by law, the

election of one or more remedies shall not be construed as a waiver of any other remedy the City may have available to it.

PRE-CONSTRUCTION CONFERENCE

Once the Contract Document is completed, the City coordinates timeframe for the pre-construction conference with the CONTRACTOR.

The purpose of the pre-construction conference is to coordinate the construction start-up timeframe and to ensure that all of the proper payroll documentation will be produced and that federal requirements describing Equal Employment Opportunity and Section 3 requirements will be met.

COMPLIANCE MONITORING

The General CONTRACTOR must submit weekly certified payrolls including weekly certified payrolls for all Subcontractors to the City for review and compliance with applicable State or Davis Bacon Wage Rates;

Construction Progress Payments are submitted to the City for review and approval;

The City is responsible for conducting on-site employee interviews for compliance with applicable prevailing wage rates and compliance with all federal, state and local requirements concerning – Section 3, MBE/WBE, etc.;

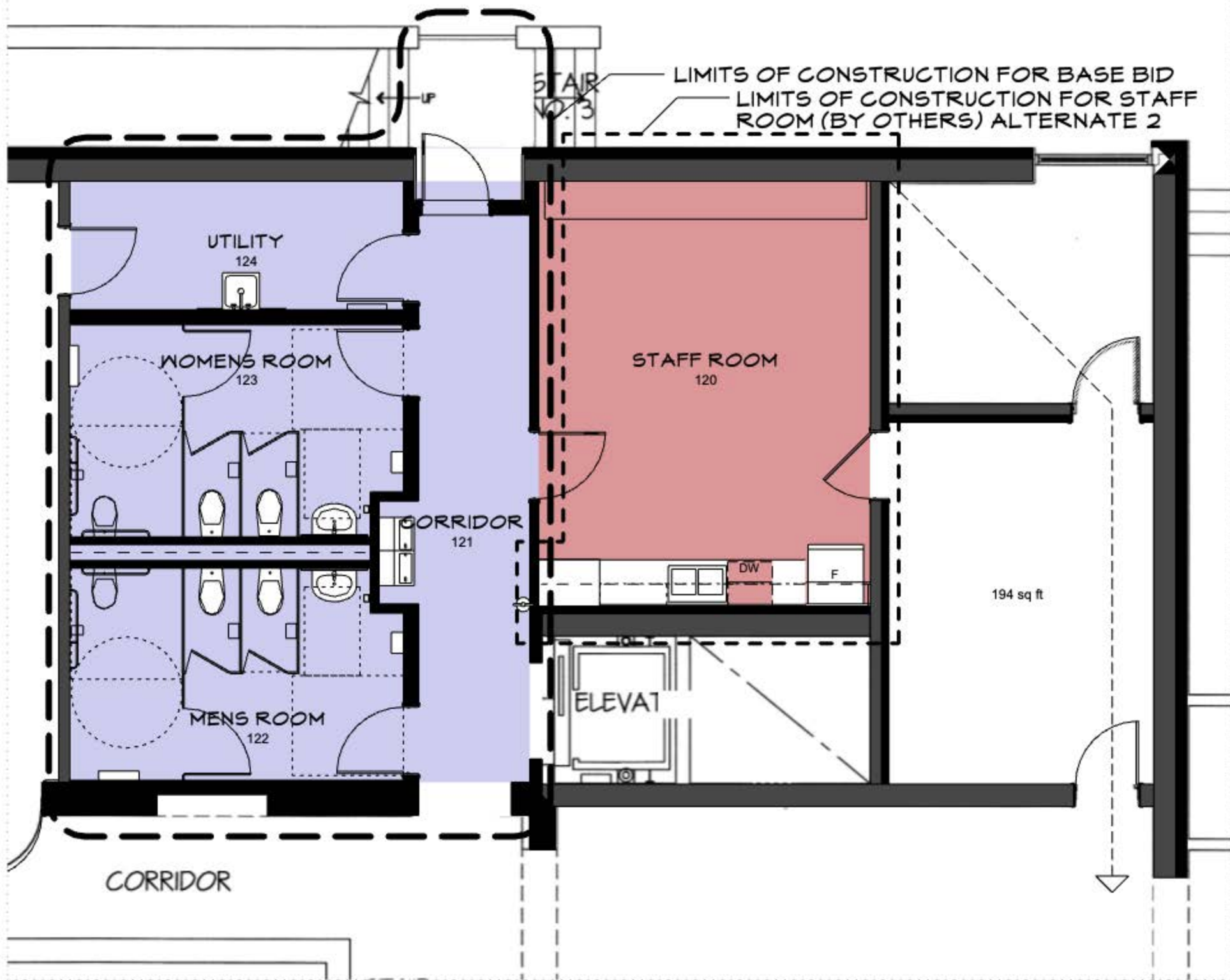
The City will periodically monitor the construction; and

Prior to the issuance of final contractor payment the following must be received:

1. Certification that all prevailing wage documentation has been completed;
2. Copies of employee interview forms completed by the City;
3. Release of Liens Statement from general CONTRACTOR;
4. Final Field Report from project manager authorizing final payment; and
5. All required Section 3 and EEO forms (if applicable)

STANDARD SPECIFICATIONS

Refer to the Technical Specifications.



LIMITS OF CONSTRUCTION
 SCALE: $\frac{3}{16}" = 1'-0"$

CONTRACT DRAWING LIST

ARCHITECTURAL

A001 GENERAL NOTES & CODE REVIEW
AX101 EXISTING FLOOR PLANS & DEMOLITION PLAN
AX102 EXISTING UPPER FLOOR PLANS
A101 PROPOSED RENOVATION
A102 STAFF ROOM PLANS
A103 RESTROOM PLANS
A104 REFLECTED CEILING PLAN
A301 WALL SECTIONS AND DETAILS
A601 FINISH PLANS AND SCHEDULES

MECHANICAL & PLUMBING

MP101 TOILET AND STAFF ROOM HVAC PLANS
MP201 SPECIFICATIONS

ELECTRICAL

E101 LEGEND AND NOTES
E102 ELECTRICAL SPECIFICATIONS, LIGHT FIXTURE SCHEDULE AND NOTES
ED101 FLOOR LIGHTING & POWER DEMOLITION PLANS
E201 FLOOR LIGHTING PLAN & POWER PLAN

TECHNICAL SPECIFICATIONS

SECTION 00 0110 TABLE OF CONTENTS

PROCUREMENT AND CONTRACTING REQUIREMENTS

1.01 DIVISION 00 -- PROCUREMENT AND CONTRACTING REQUIREMENTS

- A. 00 0110 - Table of Contents
- B. 00 3100 - Available Project Information

SPECIFICATIONS

2.01 DIVISION 01 -- GENERAL REQUIREMENTS

- A. 01 2300 - Alternates

2.02 DIVISION 02 -- EXISTING CONDITIONS

- A. 02 4100 - Demolition

2.04 DIVISION 04 -- MASONRY

- A. 04 2600 - Single-Wythe Unit Masonry

2.05 DIVISION 05 -- METALS

- A. 05 4000 - Cold-Formed Metal Framing
- B. 05 5000 - Metal Fabrications
- C. 05 7000 - Decorative Metal

2.06 DIVISION 06 -- WOOD, PLASTICS, AND COMPOSITES

- A. 06 1000 - Rough Carpentry
- B. 06 2000 - Finish Carpentry

2.07 DIVISION 07 -- THERMAL AND MOISTURE PROTECTION

- A. 07 2100 - Thermal Insulation
- B. 07 2500 - Weather Barriers
- C. 07 9200 - Joint Sealants

2.08 DIVISION 08 -- OPENINGS

- A. 08 1113 - Hollow Metal Doors and Frames
- B. 08 1416 - Flush Wood Doors
- C. 08 3100 - Access Doors and Panels
- D. 08 3313 - Coiling Counter Doors
- E. 08 4229 - Automatic Entrances
- F. 08 4313 - Aluminum-Framed Storefronts
- G. 08 4413 - Glazed Aluminum Curtain Walls
- H. 08 8000 - Glazing

2.09 DIVISION 09 -- FINISHES

- A. 09 2116 - Gypsum Board Assemblies
- B. 09 2236.23 – Metal Lath
- C. 09 2300 - Gypsum Plastering
- D. 09 2400 - Cement Plastering
- E. 09 3000 - Tiling

- F. 09 5100 - Acoustical Ceilings
- G. 09 6500 - Resilient Flooring
- H. 09 6813 - Tile Carpeting

2.10 DIVISION 10 -- SPECIALTIES

- A. 10 1400 - Signage
- B. 10 2113.19 - Plastic Toilet Compartments
- C. 10 2800 - Toilet, Bath, and Laundry Accessories
- D. 10 4400 - Fire Protection Specialties

2.12 DIVISION 12 -- FURNISHINGS

- A. 12 3600 - Countertops

END OF SECTION

SECTION 00 3100
AVAILABLE PROJECT INFORMATION

PART 1 GENERAL

1.01 EXISTING CONDITIONS

- A. Hazardous Material Survey: Entitled Limited Survey Findings by RPF Environmental, dated September 24, 2019.
 - 1. Original copy is available for inspection at Owner's offices during normal business hours.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

**SECTION 01 2300
ALTERNATES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Description of Alternates.
- B. Procedures for pricing Alternates.

1.02 ACCEPTANCE OF ALTERNATES

- A. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at Owner's option. Accepted Alternates will be identified in the Owner-Contractor Agreement.
- B. Coordinate related work and modify surrounding work to integrate the Work of each Alternate.

1.03 SCHEDULE OF ALTERNATES

- A. Alternate No. 1 - Wall Tile in Toilet Rooms:
 - 1. Base Bid: Provide gypsum walls, tile base, and epoxy painted in entire restroom(s). Base Bid to include all rough plumbing and electrical work required for Add Alternate work.
 - 2. Add Alternate: Provide wall tile 6'-8" high in toilet rooms above tile base.
- B. Alternate No. 2 - Staff Room Renovations (Funded by Others):
 - 1. Base Bid: Provide wall along corridor with all associated work to complete this work including: A new door/hardware, light switch, electrical needs, heater for each side of wall, salvaging and reinstalling ACT grid and panels. Additionally, Door 125 shall have a sign indicating this is not an exit. Base bid to include painting walls in entire Staff Room due to demolition work.
 - 2. Add Alternate: Provide cabinetry, counter, dishwasher, new wall behind cabinetry, electrical plumbing required as shown on HVAC and electrical plans.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 02 4100 DEMOLITION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Selective demolition of building elements for alteration purposes.
- B. Abandonment and removal of existing utilities and utility structures.

1.02 RELATED REQUIREMENTS

- A. Section 01 1000 - Summary: Limitations on Contractor's use of site and premises.
- B. Section 01 1000 - Summary: Description of items to be salvaged or removed for re-use by Contractor.
- C. Section 01 5000 - Temporary Facilities and Controls: Site fences, security, protective barriers, and waste removal.
- D. Section 01 6000 - Product Requirements: Handling and storage of items removed for salvage and relocation.
- E. Section 01 7000 - Execution and Closeout Requirements: Project conditions; protection of bench marks, survey control points, and existing construction to remain; reinstallation of removed products; temporary bracing and shoring.
- F. Section 01 7419 - Construction Waste Management and Disposal: Limitations on disposal of removed materials; requirements for recycling.
- G. Section 02 6500 - Underground Storage Tank Removal.
- H. Section 07 0150.19 - Preparation for Re-Roofing: Removal of existing roofing, roof insulation, flashing, trim, and accessories.
- I. Section 31 1000 - Site Clearing31 1000 or as specified on Civil Drawings: Vegetation and existing debris removal.
- J. Section 31 2200 - Grading31 2200: Topsoil removal as specified on Civil Drawings, typical.
- K. Section 31 2200 - Grading: Fill material for filling holes, pits, and excavations generated as a result of removal operations.
- L. Section 31 2323 - Fill: Fill material for filling holes, pits, and excavations generated as a result of removal operations.
- M. Section 31 2323 - Fill: Filling holes, pits, and excavations generated as a result of removal operations.

PART 3 EXECUTION

2.01 SCOPE

- A. Remove interior walls as noted on Demolition drawing.
- B. Remove assorted thresholds, doors and frames, and other assorted materials in the area of the renovations.
- C. Remove other items indicated, for salvage, relocation, and recycling.

2.02 GENERAL PROCEDURES AND PROJECT CONDITIONS

- A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
 - 1. Obtain required permits. The building is owned by the City of Portsmouth. City of Portsmouth permit fees will not be required or will be the responsibility of the Owner. All other fees to be the responsibility of the Contractor.

2. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
 3. Provide, erect, and maintain temporary barriers and security devices.
 4. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
 5. Do not close or obstruct roadways or sidewalks without permit.
 6. Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.
 7. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon or limit access to their property.
- B. Do not begin removal until receipt of notification to proceed from Owner.
 - C. Protect existing structures and other elements that are not to be removed.
 1. Provide bracing and shoring.
 2. Prevent movement or settlement of adjacent structures.
 3. Stop work immediately if adjacent structures appear to be in danger.
 - D. Minimize production of dust due to demolition operations; do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.
 - E. If hazardous materials are discovered during removal operations, stop work and notify Architect and Owner; hazardous materials include regulated asbestos containing materials, lead, PCB's, and mercury.
 - F. Perform demolition in a manner that maximizes salvage and recycling of materials.
 1. Comply with requirements of Section 01 7419 - Waste Management.
 2. Dismantle existing construction and separate materials.
 3. Set aside reusable, recyclable, and salvageable materials; store and deliver to collection point or point of reuse.

2.03 EXISTING UTILITIES

- A. Coordinate work with utility companies; notify before starting work and comply with their requirements; obtain required permits.
- B. Protect existing utilities to remain from damage.
- C. Do not disrupt public utilities without permit from authority having jurisdiction.
- D. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to Owner.
- E. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 3 days prior written notification to Owner.
- F. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.
- G. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.

2.04 SELECTIVE DEMOLITION FOR ALTERATIONS

- A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
 1. Verify that construction and utility arrangements are as indicated.
 2. Report discrepancies to Architect before disturbing existing installation.
 3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.
- B. Remove existing work as indicated and as required to accomplish new work.
 1. Remove items indicated on drawings.

- C. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications): Remove existing systems and equipment as indicated.
 - 1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components.
 - 2. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
 - 3. Verify that abandoned services serve only abandoned facilities before removal.
 - 4. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification.
- D. Protect existing work to remain.
 - 1. Prevent movement of structure; provide shoring and bracing if necessary.
 - 2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
 - 3. Repair adjacent construction and finishes damaged during removal work.
 - 4. Patch as specified for patching new work.

2.05 DEBRIS AND WASTE REMOVAL

- A. Remove debris, junk, and trash from site.
- B. Remove from site all materials not to be reused on site; comply with requirements of Section 01 7419 - Waste Management.
- C. Leave site in clean condition, ready for subsequent work.
- D. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

SECTION 04 2600
SINGLE-WYTHE UNIT MASONRY

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Concrete masonry units.
- B. Reinforcement, anchorage, and accessories.

1.02 RELATED REQUIREMENTS

- A. Section 04 0511 - Mortar and Masonry Grout: Mortar and grout for single wythe unit masonry.

1.03 REFERENCE STANDARDS

- A. ASTM C129 - Standard Specification for Nonloadbearing Concrete Masonry Units; 2011.

PART 2 PRODUCTS

2.01 CONCRETE MASONRY UNITS

- A. Concrete Block: Comply with referenced standards and as follows:
 - 1. Size: Standard units with nominal face dimensions of 16 x 8 inches and nominal depth of 6 inches.
 - 2. Non-Loadbearing Units: ASTM C129.

2.02 MORTAR AND GROUT MATERIALS

- A. Mortar and Grout: As specified in Section 04 0511.

2.03 ACCESSORIES

- A. Preformed Control Joints: Rubber material. Provide with corner and tee accessories, fused joints.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive masonry.

3.02 COURSING

- A. Establish lines, levels, and coursing indicated. Protect from displacement.
- B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.
- C. Concrete Masonry Units:
 - 1. Bond: Running.
 - 2. Coursing: One unit and one mortar joint to equal 8 inches.
 - 3. Mortar Joints: Flush.

3.03 PLACING AND BONDING

3.04 LINTELS

- A. Install loose steel lintels over openings.
- B. Maintain minimum 8" inch bearing on each side of opening.

END OF SECTION

SECTION 05 4000
COLD-FORMED METAL FRAMING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Formed steel stud exterior wall and interior wall framing.
- B. Exterior wall sheathing.
- C. Water-resistive barrier over sheathing.

1.02 RELATED REQUIREMENTS

- A. Section 06 1000 - Rough Carpentry: Wood blocking and miscellaneous framing.
- B. Section 07 2100 - Thermal Insulation: Insulation within framing members.
- C. Section 07 6200 - SHEET METAL FLASHING AND TRIM: Head and sill flashings.
- D. Section 07 9200 - Joint Sealants.
- E. Section 09 2116 - Gypsum Board Assemblies: Lightweight, non-load bearing metal stud framing.
- F. Section 09 5100 - Acoustical Ceilings: Ceiling suspension system.

1.03 REFERENCE STANDARDS

- A. AISI S100-12 - North American Specification for the Design of Cold-Formed Steel Structural Members; American Iron and Steel Institute; 2012.
- B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2009.
- C. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.
- D. ASTM C955 - Standard Specification for Load-Bearing (Transverse and Axial) Steel Studs, Runners (Tracks), and Bracing or Bridging for Screw Application of Gypsum Panel Products and Metal Plaster Bases; 2011c.
- E. ASTM C1007 - Standard Specification for Installation of Load Bearing (Transverse and Axial) Steel Studs and Related Accessories; 2011a.
- F. ASTM C1177/C1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing; 2013.
- G. SSPC-Paint 20 - Zinc-Rich Primers (Type I, "Inorganic," and Type II, "Organic"); 2002 (Ed. 2004).

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate with work of other sections that is to be installed in or adjacent to the metal framing system, including but not limited to structural anchors, cladding anchors, utilities, insulation, and firestopping.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on standard framing members; describe materials and finish, product criteria, limitations .
- C. Product Data: Provide manufacturer's data on factory-made framing connectors, showing compliance with requirements.
- D. Shop Drawings: Indicate component details, framed openings, bearing, anchorage, loading, welds, and type and location of fasteners, and accessories or items required of related work.
 - 1. Indicate stud and ceiling joist layout.

2. Describe method for securing studs to tracks and for bolted framing connections.
 3. Design data:
- E. Manufacturer's Installation Instructions: Indicate special procedures, conditions requiring special attention.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Metal Framing:
1. Clarkwestern Dietrich Building Systems LLC: www.clarkdietrich.com.
 2. Marino: www.marinoware.com.
 3. EB Metals; www.ebmetals.us
 4. Substitutions: See Section 01 6000 - Product Requirements.
- B. Framing Connectors and Accessories:
1. Same manufacturer as metal framing.

2.02 FRAMING SYSTEM

- A. Provide primary and secondary framing members, bridging, bracing, plates, gussets, clips, fittings, reinforcement, and fastenings as required to provide a complete framing system.
- B. Design Requirements: Provide completed framing system having the following characteristics:
1. Design: Calculate structural characteristics of cold-formed steel framing members according to AISI S100-12.
 2. Structural Performance: Design, engineer, fabricate, and erect to withstand specified design loads for project conditions within required limits.
 3. Design Loads: In accordance with applicable codes.
 4. Live load deflection meeting the following, unless otherwise indicated:
 - a. Floors: Maximum vertical deflection under live load of 1/480 of span.
 - b. Roofs: Maximum vertical deflection under live load of 1/240 of span.
 - c. Exterior Walls: Maximum horizontal deflection under wind load of 1/360 of span.
 - d. Design non-axial loadbearing framing to accommodate not less than 1/2 in vertical deflection.
 5. Able to tolerate movement of components without damage, failure of joint seals, undue stress on fasteners, or other detrimental effects when subject to seasonal or cyclic day/night temperature ranges.
 6. Able to accommodate construction tolerances, deflection of building structural members, and clearances of intended openings.

2.03 FRAMING MATERIALS

- A. Studs and Track: ASTM C955; studs formed to channel, "C", or "Sigma" shape with punched web; U-shaped track in matching nominal width and compatible height.
1. Gage and Depth: As required to meet specified performance levels.
 2. Galvanized in accordance with ASTM A653/A653M, G90/Z275 coating.
- B. Framing Connectors: Factory-made, formed steel sheet.
1. Material: ASTM A653/A653M SS Grade 33 and 40 (minimum), with G90/Z275 hot dipped galvanized coating for base metal thickness less than 10 gage, 0.1345 inch, and factory punched holes and slots.
 2. Structural Performance: Maintain load and movement capacity required by applicable code, when evaluated in accordance with AISI S100-12.
 3. Movement Connections: Provide mechanical anchorage devices that accommodate movement using slotted holes, shouldered screws or screws and anti-friction or stepped bushings, while maintaining structural performance of framing. Provide movement connections where indicated on drawings.

- a. Where top of stud wall terminates below structural floor or roof, connect studs to structure in manner allowing vertical and horizontal movement of slab without affecting studs; allow for minimum movement of 1/2 inch.
- b. Provide top track preassembled with connection devices spaced to fit stud spacing indicated on drawings; minimum track length of 10 feet.
- 4. Fixed Connections: Provide non-movement connections for tie-down to foundation, floor-to-floor tie-down, roof-to-wall tie-down, joist hangers, gusset plates, and stiffeners.
- 5. Wall Stud Bridging Connections: Provide mechanical load-transferring devices that accommodate wind load torsion and weak axis buckling induced by axial compression loads. Provide bridging connections where indicated on the drawings.

2.04 WALL SHEATHING

- A. Wall Sheathing, For Connector Exterior Walls: Glass mat faced gypsum; ASTM C1177/C1177M, square long edges, 5/8 inch Type X fire resistant.

2.05 ACCESSORIES

- A. Bracing, Furring, Bridging: Formed sheet steel, thickness determined for conditions encountered; finish to match framing components.
- B. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, Type I - Inorganic, complying with VOC limitations of authorities having jurisdiction.
- C. Water-Resistive Barrier: As specified in Section 07 2500.

2.06 FASTENERS

- A. Self-Drilling, Self-Tapping Screws, Bolts, Nuts and Washers: Hot dip galvanized per ASTM A153/A153M.
- B. Anchorage Devices: Powder actuated.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrate surfaces are ready to receive work.
- B. Verify field measurements and adjust installation as required.

3.02 INSTALLATION OF STUDS

- A. Install components in accordance with manufacturers' instructions and ASTM C1007 requirements.
- B. Align floor and ceiling tracks; locate to wall layout. Secure in place with fasteners at maximum 24 inches on center. Coordinate installation of sealant with floor and ceiling tracks.
- C. Place studs at 16 inches on center; not more than 2 inches from abutting walls and at each side of openings. Connect studs to tracks using clip and tie method.
- D. Construct corners using minimum of three studs. Install double studs at wall openings, door and window jambs.
- E. Install load bearing studs full length in one piece. Splicing of studs is not permitted.
- F. Install load bearing studs, brace, and reinforce to develop full strength and achieve design requirements.
- G. Coordinate placement of insulation in multiple stud spaces made inaccessible after erection.
- H. Install intermediate studs above and below openings to align with wall stud spacing.
- I. Provide deflection allowance in stud track, directly below horizontal building framing at non-load bearing framing.
- J. Attach cross studs to studs for attachment of fixtures anchored to walls.
- K. Install framing between studs for attachment of mechanical and electrical items, and to prevent stud rotation.
- L. Touch-up field welds and damaged galvanized surfaces with primer.

3.03 INSTALLATION OF WALL SHEATHING

- A. Install wall sheathing with long dimension perpendicular to wall studs, with ends over firm bearing and staggered, using self-tapping screws.
 - 1. Place water-resistive barrier horizontally over wall sheathing, weather lapping edges and ends.

END OF SECTION

SECTION 05 5000
METAL FABRICATIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Shop fabricated steel items.

1.02 REFERENCE STANDARDS

- A. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2014.
- B. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2015.
- C. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2015.
- D. SSPC-Paint 20 - Zinc-Rich Primers (Type I, "Inorganic," and Type II, "Organic"); 2002 (Ed. 2004).
- E. SSPC-SP 2 - Hand Tool Cleaning; 1982 (Ed. 2004).

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable.

PART 2 PRODUCTS

2.01 MATERIALS - STEEL

- A. Steel Sections: ASTM A36/A36M.
- B. Shop and Touch-Up Primer: SSPC-Paint 15, complying with VOC limitations of authorities having jurisdiction.
- C. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, Type I - Inorganic, complying with VOC limitations of authorities having jurisdiction.

2.02 FABRICATION

- A. Fit and shop assemble items in largest practical sections, for delivery to site.
- B. Fabricate items with joints tightly fitted and secured.
- C. Continuously seal joined members by continuous welds.
- D. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.
- E. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where specifically noted otherwise.
- F. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

2.03 FABRICATED ITEMS

- A. Bumper Posts and Guard Rails: As detailed; galvanized finish.
- B. Ledge Angles, Shelf Angles, Channels, and Plates Not Attached to Structural Framing: For support of metal decking; prime paint finish.
- C. Lintels: As detailed; prime paint finish.

2.04 FINISHES - STEEL

- A. Prime paint steel items.

1. Exceptions: Galvanize items to be embedded in concrete and items to be imbedded in masonry.
- B. Prepare surfaces to be primed in accordance with SSPC-SP2.
- C. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.
- D. Prime Painting: One coat.
- E. Galvanizing of Non-structural Items: Galvanize after fabrication to ASTM A123/A123M requirements.

2.05 FABRICATION TOLERANCES

- A. Squareness: 1/8 inch maximum difference in diagonal measurements.
- B. Maximum Offset Between Faces: 1/16 inch.
- C. Maximum Misalignment of Adjacent Members: 1/16 inch.
- D. Maximum Bow: 1/8 inch in 48 inches.
- E. Maximum Deviation From Plane: 1/16 inch in 48 inches.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive work.

3.02 PREPARATION

- A. Clean and strip primed steel items to bare metal where site welding is required.
- B. Supply setting templates to the appropriate entities for steel items required to be cast into concrete or embedded in masonry.

3.03 INSTALLATION

- A. Install items plumb and level, accurately fitted, free from distortion or defects.
- B. Provide for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.
- C. Perform field welding in accordance with AWS D1.1/D1.1M.
- D. Obtain approval prior to site cutting or making adjustments not scheduled.
- E. After erection, prime welds, abrasions, and surfaces not shop primed, except surfaces to be in contact with concrete.

END OF SECTION

SECTION 05 7000
DECORATIVE METAL

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Decorative stair at Main Lobby.
- B. Decorative railing and guardrail assemblies at Lobby.

1.02 RELATED REQUIREMENTS

- A. Section 05 5000 - Metal Fabrications: Supports.
- B. Section 05 5100 - Metal Stairs: Stairs other than specified in this section.
- C. Section 06 2000 - Finish Carpentry: Wood handrail.
- D. Section 09 2116 - Gypsum Board Assemblies: Placement of backing plates in stud wall construction.

1.03 REFERENCE STANDARDS

- A. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum; 2012.
- B. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design; 2010.
- C. ASTM A307 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength; 2014.
- D. ASTM A780/A780M - Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings; 2009 (Reapproved 2015).
- E. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2014.
- F. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes [Metric]; 2013.
- G. ASTM E935 - Standard Test Methods for Performance of Permanent Metal Railing Systems and Rails for Buildings; 2013.
- H. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2015.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate railing system elevations and sections, details of profile, dimensions, sizes, connection attachments, anchorage, size and type of fasteners, and accessories. Indicate anchor and joint locations, brazed connections, transitions, and terminations.
- C. Samples: Submit one (1) of each item below for each type and condition shown.
 - 1. Mesh: 6 inch by 6 inch sample of each type of welded wire mesh
- D. Test Reports: Submit test reports from an independent testing agency showing compliance with specified design and performance requirements.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in factory provided protective coverings and packaging.
- B. Protect materials against damage during transit, delivery, storage, and installation at site.
- C. Inspect materials upon delivery for damage. Repair damage to be indistinguishable from undamaged areas; if damage cannot be repaired to be indistinguishable from undamaged parts and finishes, replace damaged items.
- D. Prior to installation, store materials and components under cover, in a dry location.

1.06 FIELD CONDITIONS

- A. Do not install railings until project is enclosed and ambient temperature of space is minimum 65 degrees F and maximum 95 degrees F.
- B. Maintain ambient temperature of space at minimum 65 degrees F and maximum 95 degrees F for 24 hours before, during, and after railing installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Decorative Metal Railings:
 - 1. Stanford Aluminum.

2.02 RAILING SYSTEMS

- A. Railing Systems - General: Factory- or shop-fabricated in design indicated, to suit specific project conditions, and for proper connection to building structure, and in largest practical sizes for delivery to site.
 - 1. Performance Requirements: Design and fabricate railings and anchorages to resist the following loads without failure, damage, or permanent set; loads do not need to be applied simultaneously.
 - a. Lateral Force: 75 lb minimum, at any point, when tested in accordance with ASTM E935.
 - b. Distributed Load: 50 lb/ft minimum, applied in any direction at the top of the handrail, when tested in accordance with ASTM E935.
 - c. Concentrated Loads on Intermediate Rails: 50 psf, minimum.
 - d. Concentrated Load: 200 lbs minimum, applied in any direction at any point along the handrail system, when tested in accordance with ASTM E935.
 - e. Handrails: Comply with applicable accessibility requirements of ADA Standards.
 - 2. Assembly: Join lengths, seal open ends, and conceal exposed mounting bolts and nuts using slip-on non-weld mechanical fittings, flanges, escutcheons, and wall brackets.
 - 3. Joints: Tightly fitted and secured, machined smooth with hairline seams.
 - 4. Field Connections: Provide sleeves to accommodate site assembly and installation.
 - 5. Welded and Brazed Joints: Make exposed joints butt tight, flush, and hairline; use methods that avoid discoloration and damage of finish; grind smooth, polish, and restore to required finish.
 - a. Ease exposed edges to small uniform radius.
 - b. Welded Joints:
 - 1) Carbon Steel: Perform welding in accordance with AWS D1.1/D1.1M.
- B. Metal Railing: Engineered, post-supported railing system with metal infill.
 - 1. Configuration: Guardrail only. Wood insert at handrail.
 - 2. Wall Mounted Components: Components necessary to support railing with 1-1/2 inch clearance from wall, and as follows:
 - a. Underslung support brackets: Supports at 60 inches, maximum.
 - 3. Fasteners: Concealed.
 - 4. Infill at Picket Railings: Vertical pickets.
 - a. Horizontal Spacing: Maximum 4 inches on center.
 - b. Material: Welded steel tube.
 - c. Shape: Square.
 - d. Top Mounting: Mechanically attached by internal fittings.
 - 5. End and Intermediate Posts: 2 - 1 inch square welded steel tubes grouped and connected as indicated on drawings.
 - a. Horizontal Spacing: As indicated on drawings.
 - b. Mounting: Welded.

2.03 MATERIALS

- A. Aluminum Components: ASTM B221 or ASTM B221M.

1. Clear Anodized Finish: Class I, AAMA 611 AA-M12C22A41 Clear anodic coating with electrolytically deposited organic seal; not less than 0.7 mils thick.
2. Basis of Design: 36" Stanford Aluminum Railing - Weatherables

2.04 ACCESSORIES

- A. Welding Fittings: Factory- or shop-welded from matching pipe or tube; joints and seams ground smooth.
- B. Anchors and Fasteners: Provide anchors and other materials as required to attach to structure, made of same materials as railing components unless otherwise indicated; where exposed fasteners are unavoidable provide flush countersunk fasteners.
 1. For anchorage to concrete, provide inserts to be cast into concrete for bolting anchors.
 2. For anchorage to masonry, provide brackets to be embedded in masonry for bolting anchors.
 3. For anchorage to stud walls, provide backing plates for bolting anchors.
 4. Exposed Fasteners: No exposed bolts or screws.
- C. Carbon Steel Bolts and Nuts: ASTM A307.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrate and site conditions are acceptable and ready to receive work.
- B. Verify field dimensions of locations and areas to receive work.
- C. Notify Architect immediately of conditions that would prevent satisfactory installation.
- D. Do not proceed with work until detrimental conditions have been corrected.
- E. Furnish components to be installed in other work to installer of that other work, including but not limited to blocking, sleeves, inserts, anchor bolts, embedded plates and supports for attachment of anchors.

3.02 PREPARATION

- A. Review installation drawings before beginning installation. Coordinate diagrams, templates, instructions and directions for installation of anchorages and fasteners.
- B. Clean surfaces to receive units. Remove materials and substances detrimental to the installation.

3.03 INSTALLATION

- A. Comply with manufacturer's drawings and written instructions.
- B. Install components plumb and level, accurately fitted, free from distortion or defects and with tight joints, except where necessary for expansion.
- C. Anchor securely to structure.
- D. Conceal anchor bolts and screws whenever possible. Where not concealed, use flush countersunk fastenings.
- E. Weld connections that cannot be shop welded due to size limitations.
 1. Weld in accordance with AWS D1.1/D1.1M.
 2. Match shop welding and bolting.
 3. Clean welds, bolted connections and abraded areas.
 4. Touch up shop primer and factory applied finishes.
 5. Repair galvanizing with galvanizing repair paint per ASTM A780/A780M.
- F. Isolate dissimilar materials with bituminous coating, bushings, grommets or washers to prevent electrolytic corrosion.

3.04 TOLERANCES

- A. Maximum Variation From Plumb: 1/4 inch per floor level, non-cumulative.
- B. Maximum Offset From True Alignment: 1/4 inch.

- C. Maximum Out-of-Position: 1/4 inch.

3.05 CLEANING

- A. Remove protective film from exposed metal surfaces.
- B. Metal: Clean exposed metal finishes with potable water and mild detergent, in accordance with manufacturer recommendations; do not use abrasive materials or chemicals, detergents or other substances that may damage the material or finish.

3.06 PROTECTION

- A. Protect installed components and finishes from damage after installation.
- B. Repair damage to exposed finishes to be indistinguishable from undamaged areas.
 - 1. If damage to finishes and components cannot be repaired to be indistinguishable from undamaged finishes and components, replace damaged items.

END OF SECTION

SECTION 06 1000 ROUGH CARPENTRY

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Rough opening framing for doors, windows, and roof openings.
- B. Preservative treated wood materials.
- C. Communications and electrical room mounting boards.
- D. Concealed wood blocking, nailers, and supports.
- E. Miscellaneous wood nailers, furring, and grounds.

1.02 RELATED REQUIREMENTS

- A. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions.

1.03 REFERENCE STANDARDS

- A. AWP A U1 - Use Category System: User Specification for Treated Wood; 2012.
- B. PS 20 - American Softwood Lumber Standard; 2010.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
 - 1. If no species is specified, provide any species graded by the agency specified; if no grading agency is specified, provide lumber graded by any grading agency meeting the specified requirements.
 - 2. Grading Agency: Any grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee (www.alsc.org) and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.
- B. Lumber fabricated from old growth timber is not permitted.

2.02 DIMENSION LUMBER FOR CONCEALED APPLICATIONS

- A. Sizes: Nominal sizes as indicated on drawings, S4S.
- B. Moisture Content: S-dry or MC19.
- C. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:
 - 1. Lumber: S4S, No. 2 or Standard Grade.
 - 2. Boards: Standard or No. 3.

2.03 STRUCTURAL COMPOSITE LUMBER

- A. At Contractor's option, structural composite lumber may be substituted for concealed dimension lumber and timbers.
- B. Structural Composite Lumber: Factory fabricated beams, headers, and columns, of sizes and types indicated on drawings; structural capacity as published by manufacturer.

2.04 FACTORY WOOD TREATMENT

- A. Treated Lumber and Plywood: Comply with requirements of AWP A U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.

PART 3 EXECUTION

3.01 INSTALLATION - GENERAL

- A. Select material sizes to minimize waste.

- B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.
- C. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.

3.02 BLOCKING, NAILERS, AND SUPPORTS

- A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim.
- B. In framed assemblies that have concealed spaces, provide solid wood fireblocking as required by applicable local code, to close concealed draft openings between floors and between top story and roof/attic space; other material acceptable to code authorities may be used in lieu of solid wood blocking.
- C. In metal stud walls, provide continuous blocking around door and window openings for anchorage of frames, securely attached to stud framing.
- D. In walls, provide blocking attached to studs as backing and support for wall-mounted items, unless item can be securely fastened to two or more studs or other method of support is explicitly indicated.
- E. Where ceiling-mounting is indicated, provide blocking and supplementary supports above ceiling, unless other method of support is explicitly indicated.
- F. Provide the following specific non-structural framing and blocking:
 - 1. Cabinets and shelf supports.
 - 2. Wall brackets.
 - 3. Handrails.
 - 4. Grab bars.
 - 5. Towel and bath accessories.
 - 6. Wall-mounted door stops.
 - 7. Wall paneling and trim.
 - 8. Joints of rigid wall coverings that occur between studs.

3.03 CLEANING

- A. Waste Disposal: Comply with the requirements of Section 01 7419 - Construction Waste Management and Disposal.
 - 1. Comply with applicable regulations.
 - 2. Do not burn scrap on project site.
 - 3. Do not burn scraps that have been pressure treated.
 - 4. Do not send materials treated with pentachlorophenol, CCA, or ACA to co-generation facilities or "waste-to-energy" facilities.
- B. Do not leave any wood, shavings, sawdust, etc. on the ground or buried in fill.
- C. Prevent sawdust and wood shavings from entering the storm drainage system.

END OF SECTION

SECTION 06 2000
FINISH CARPENTRY

PART 1 GENERAL

1.01 RELATED REQUIREMENTS

- A. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions.
- B. Section 06 1000 - Rough Carpentry: Support framing, grounds, and concealed blocking.
- C. Section 06 4100 - Architectural Wood Casework: Shop fabricated custom cabinet work.
- D. Section 06 4200 - Wood Paneling: Shop fabricated custom paneling.
- E. Section 08 1416 - Flush Wood Doors.
- F. Section 08 1433 - Stile and Rail Wood Doors.
- G. Section 09 9123 - Interior Painting: Painting of finish carpentry items.

1.02 REFERENCE STANDARDS

- A. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards; 2014.
- B. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards, U.S. Version 3.0; 2016.
- C. HPVA HP-1 - American National Standard for Hardwood and Decorative Plywood; 2009.
- D. PS 1 - Structural Plywood; 2009.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, and accessories.
 - 1. Provide the information required by AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS).
- C. Samples: Submit two samples of finish plywood, 12 x 12 inch in size illustrating wood grain and specified finish.
- D. Samples: Submit two samples of wood trim 12 inch long.

PART 2 PRODUCTS

2.01 FINISH CARPENTRY ITEMS

- A. Quality Grade: Unless otherwise indicated provide products of quality specified by AWI/AWMAC/WI (AWS) for Custom Grade.
- B. Interior Woodwork Items:
 - 1. Moldings, Bases, Casings, and Miscellaneous Trim noted for painted finish: Clear white pine or poplar; prepare for paint finish.
 - 2. Loose Shelving: Birch plywood; prepare for paint finish.

2.02 LUMBER MATERIALS

2.03 SHEET MATERIALS

- A. Softwood Plywood, Not Exposed to View: Any face species, medium density fiberboard core; PS 1 Grade A-B, glue type as recommended for application.
- B. Softwood Plywood, Exposed to View: Face species as indicated, plain sawn, medium density fiberboard core; PS 1 Grade A-B, glue type as recommended for application.
- C. Hardwood Plywood: Face species as indicated, plain sawn, book matched, medium density fiberboard core; HPVA HP-1, Front Face Grade AA, Back Face Grade 1, glue type as recommended for application.

2.04 FASTENINGS

- A. Adhesive for Purposes Other Than Laminate Installation: Suitable for the purpose; not containing formaldehyde or other volatile organic compounds.

2.05 ACCESSORIES

- A. Plastic Edge Trim: Extruded convex shaped; smooth finish; self locking serrated tongue; of width to match component thickness; color as selected.
- B. Primer: Alkyd primer sealer.
- C. Wood Filler: Solvent base, tinted to match surface finish color.

2.06 FABRICATION

- A. Shop assemble work for delivery to site, permitting passage through building openings.
- B. When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide trim for scribing and site cutting.

2.07 SHOP FINISHING

- A. Sand work smooth and set exposed nails and screws.
- B. Apply wood filler in exposed nail and screw indentations.
- C. On items to receive transparent finishes, use wood filler that matches surrounding surfaces and is of type recommended for the applicable finish.
- D. Finish work in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), Section 5 - Finishing for grade specified and as follows:
 - 1. Transparent:
 - a. System - 1, Lacquer, Nitrocellulose.
 - b. Sheen: Satin.
 - 2. Opaque:
 - a. System - 1, Lacquer, Nitrocellulose.
 - b. Color: As selected by Architect.
 - c. Sheen: Flat.
- E. Back prime woodwork items to be field finished, prior to installation.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install custom fabrications in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS) requirements for grade indicated.
- B. Set and secure materials and components in place, plumb and level.
- C. Carefully scribe work abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim to conceal larger gaps.

3.02 PREPARATION FOR SITE FINISHING

- A. Set exposed fasteners. Apply wood filler in exposed fastener indentations. Sand work smooth.
- B. Before installation, prime paint surfaces of items or assemblies to be in contact with cementitious materials.

END OF SECTION

SECTION 07 2100 THERMAL INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Batt insulation and vapor retarder in exterior wall, ceiling, and roof construction.
- B. Batt insulation for filling perimeter window and door shim spaces and crevices in exterior wall and roof.

1.02 RELATED REQUIREMENTS

- A. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions.
- B. Section 04 2723 - Cavity Wall Unit Masonry: Masonry walls enclosing insulation.
- C. Section 07 2126 - Blown Insulation: Blown-in, gravity-held fibrous insulation.
- D. Section 07 2129 - Sprayed Insulation: Sprayed-on, adhered fibrous insulation.
- E. Section 07 2500 - Weather Barriers: Separate air barrier and vapor retarder materials.
- F. Section 07 5400 - THERMOPLASTIC MEMBRANE ROOFING: Insulation specified as part of roofing system.
- G. Section 09 2116 - Gypsum Board Assemblies: Acoustic insulation inside walls and partitions.

1.03 REFERENCE STANDARDS

- A. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2012.
- B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.
- C. ASTM E136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace At 750 Degrees C; 2012.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on product characteristics, performance criteria, and product limitations.

1.05 FIELD CONDITIONS

- A. Do not install insulation adhesives when temperature or weather conditions are detrimental to successful installation.

PART 2 PRODUCTS

2.01 APPLICATIONS

- A. Insulation in Metal Framed Walls: Batt insulation with integral vapor retarder.

2.02 BATT INSULATION MATERIALS

- A. Where batt insulation is indicated, either glass fiber or mineral fiber batt insulation may be used, at Contractor's option.
- B. Glass Fiber Batt Insulation: Flexible preformed batt or blanket, complying with ASTM C665; friction fit.
 - 1. Combustibility: Non-combustible, when tested in accordance with ASTM E136, except for facing, if any.
- C. Mineral Fiber Batt Insulation: Flexible or semi-rigid preformed batt or blanket, complying with ASTM C665; friction fit; unfaced flame spread index of 0 (zero) when tested in accordance with ASTM E84.
 - 1. Smoke Developed Index: 0 (zero), when tested in accordance with ASTM E84.

2. Manufacturers:
 - a. Johns Manville; MinWool Sound Attenuation Fire Batts: www.jm.com/#sle.
 - b. ROCKWOOL (ROXUL, Inc); COMFORTBATT: www.rockwool.com/#sle.

2.03 ACCESSORIES

- A. Sheet Vapor Retarder: Specified in Section 07 2500.
- B. Tape: Bright aluminum self-adhering type, mesh reinforced, 2 inch wide.
- C. Tape joints of rigid insulation in accordance with roofing and insulation manufacturers' instructions.
- D. Insulation Fasteners: Impaling clip of unfinished steel with washer retainer and clips, to be adhered to surface to receive insulation, length to suit insulation thickness and substrate, capable of securely and rigidly fastening insulation in place.
- E. Adhesive: Type recommended by insulation manufacturer for application.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation.
- B. Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.

3.02 BATT INSTALLATION

- A. Install insulation and vapor retarder in accordance with manufacturer's instructions.
- B. Install in exterior wall and roof spaces without gaps or voids. Do not compress insulation.
- C. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.
- D. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.

3.03 PROTECTION

- A. Do not permit installed insulation to be damaged prior to its concealment.

END OF SECTION

SECTION 07 2500
WEATHER BARRIERS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Vapor Retarders: Materials to make exterior walls and joints around frames of openings in exterior walls water vapor resistant and air tight.
- B. Air Barriers: Materials that form a system to stop passage of air through exterior walls and joints around frames of openings in exterior walls.

1.02 RELATED REQUIREMENTS

- A. Section 07 5400 - THERMOPLASTIC MEMBRANE ROOFING: Vapor retarder installed as part of roofing system.
- B. Section 07 9200 - Joint Sealants: Sealing building expansion joints.

1.03 DEFINITIONS

- A. Weather Barrier: Assemblies that form either water-resistive barriers, air barriers, or vapor retarders.
- B. Vapor Retarder: Air tight barrier made of material that is relatively water vapor impermeable, to the degree specified, with sealed seams and with sealed joints to adjacent surfaces.
 - 1. Water Vapor Permeance: For purposes of conversion, $57.2 \text{ ng}/(\text{Pa s sq m}) = 1 \text{ perm}$.

1.04 REFERENCE STANDARDS

- A. ASTM D1970/D1970M - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection; 2013.
- B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.
- C. ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials; 2014.
- D. ASTM E2178 - Standard Test Method for Air Permeance of Building Materials; 2013.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on material characteristics.
- C. Manufacturer's Installation Instructions: Indicate preparation, installation methods, and typical details at dissimilar materials.

PART 2 PRODUCTS

2.01 WEATHER BARRIER ASSEMBLIES

- A. Exterior Vapor Retarder:
 - 1. On outside surface of sheathing use vapor retarder sheet, self-adhesive type.

2.02 AIR BARRIER MATERIALS (AIR AND VAPOR BARRIER)

- A. Air and Vapor Barrier Sheet, Self-Adhered:
 - 1. Air Permeance: 0.004 cfm/sq ft, maximum, when tested in accordance with ASTM E2178.
 - 2. Water Vapor Permeance: 0.02 perms, maximum, when tested in accordance with ASTM E96/E96M, Procedure B.
- B. Air and Vapor Barrier Sheet, Fluid-Applied:
 - 1. Air Permeance: 0.004 cfm/sq ft, maximum, when tested in accordance with ASTM E2178.

2. Water Vapor Permeance: 0.1 perm, maximum, when tested in accordance with ASTM E96/E96M Procedure A (Desiccant Method) at 73.4 degrees F.
3. Water Penetration Resistance Around Nails: Pass, when tested in accordance with ASTM D1970/D1970M.
4. Surface Burning Characteristics: Flame spread index of 25 or less, smoke developed index of 450 or less (Class A), when tested in accordance with ASTM E84.
5. Seam and Perimeter Tape: As recommended by sheet manufacturer.

2.03 VAPOR RETARDER MATERIALS (AIR BARRIER AND WATER-RESISTIVE)

- A. Vapor Retarder Sheet Type A: ASTM D1970/D1970M.
 1. Type: Rubberized asphalt bonded to thermoplastic sheet, self-adhesive.
 2. Thickness: 40 mil, 0.040 inch, nominal.
 3. Sheet Width: 18 inches, and 36 inches.
 4. Water Vapor Permeance: 0.05 perm, maximum, when tested in accordance with ASTM E96/E96M.
 5. Seam and Perimeter Tape: As recommended by sheet manufacturer.
 6. Manufacturers:
 - a. Carlisle Coatings and Waterproofing, Inc; CCW-705 Air and Vapor Barrier Sheet: www.carlisleccw.com/#sle.
 - b. Carlisle Coatings and Waterproofing, Inc; CCW-705 Air and Vapor Barrier Strips: www.carlisleccw.com/#sle.
 - c. Henry Company; Blueskin SA: www.henry.com/#sle.
 - d. Henry Company; Blueskin SA HT- high temp: www.henry.com/sle.
 - e. Henry Company; Blueskin SA LT (low temp): www.henry.com/#sle.

2.04 ACCESSORIES

- A. Sealants, Tapes, and Accessories for Sealing Weather Barrier and Sealing Weather Barrier to Adjacent Substrates: As specified or as recommended by weather barrier manufacturer.
- B. Flexible Flashing: Self-adhesive sheet flashing complying with ASTM D1970/D1970M, except slip resistance requirement is waived if not installed on a roof.
 1. Composition: Modified bituminous sheet laminated to polyethylene sheet.
 2. Manufacturers:
 - a. DuPont de Nemours, Inc; FlexWrap NF: www.dupont.com/#sle.
 - b. Fortifiber Building Systems Group; FortiFlash Commercial: www.fortifiber.com/#sle.
 - c. Substitutions: See Section 01 6000 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces and conditions are ready to accept the work of this section.

3.02 PREPARATION

- A. Remove projections, protruding fasteners, and loose or foreign matter that might interfere with proper installation.

3.03 INSTALLATION

- A. Install materials in accordance with manufacturer's instructions.
- B. Water-Resistive Barriers: Install continuous barrier over surfaces indicated, with sheets lapped to shed water but with seams not sealed.
- C. Air Barriers: Install continuous air tight barrier over surfaces indicated, with sealed seams and with sealed joints to adjacent surfaces.
- D. Vapor Retarders: Install continuous air tight barrier over surfaces indicated, with sealed seams and with sealed joints to adjacent surfaces.
- E. Apply sealants and adhesives within recommended application temperature ranges. Consult manufacturer if temperature is out of this range.

- F. Self-Adhered Sheets:
 - 1. Prepare substrate in manner recommended by sheet manufacturer; fill and tape joints in substrate and between dissimilar materials.
 - 2. Lap sheets shingle-fashion to shed water and seal laps air tight.
 - 3. Once sheets are in place, press firmly into substrate with resilient hand roller; ensure that laps are firmly adhered with no gaps or fishmouths.
 - 4. Use same material, or other material approved by sheet manufacturer for the purpose, to seal to adjacent construction and as flashing.
 - 5. At wide joints, provide extra flexible membrane allowing joint movement.
- G. Openings and Penetrations in Exterior Weather Barriers:
 - 1. Install flashing over sills, covering entire sill frame member, extending at least 5 inches onto weather barrier and at least 6 inches up jambs; mechanically fasten stretched edges.
 - 2. At openings to be filled with frames having nailing flanges, seal head and jamb flanges using a continuous bead of sealant compressed by flange and cover flanges with sealing tape at least 4 inches wide; do not seal sill flange.
 - 3. At openings to be filled with non-flanged frames, seal weather barrier to each side of opening framing, using flashing at least 9 inches wide, covering entire depth of framing.
 - 4. At head of openings, install flashing under weather barrier extending at least 2 inches beyond face of jambs; seal weather barrier to flashing.
 - 5. At interior face of openings, seal gap between window/door frame and rough framing, using joint sealant over backer rod.
 - 6. Service and Other Penetrations: Form flashing around penetrating item and seal to weather barrier surface.

3.04 PROTECTION

- A. Do not leave materials exposed to weather longer than recommended by manufacturer.

END OF SECTION

SECTION 07 9200 JOINT SEALANTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Nonsag gunnable joint sealants.
- B. Self-leveling pourable joint sealants.

1.02 RELATED REQUIREMENTS

- A. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions: Additional requirements for sealants and primers.
- B. Section 07 1300 - Sheet Waterproofing: Sealing cracks and joints in waterproofing substrate surfaces using materials specified in this section.
- C. Section 07 2500 - Weather Barriers: Sealants required in conjunction with air barriers and vapor retarders.
- D. Section 07 8400 - Firestopping: Firestopping sealants.
- E. Section 08 7100 - Door Hardware: Refer to Drawings- Sheet A601: Setting exterior door thresholds in sealant.
- F. Section 08 8000 - Glazing: Glazing sealants and accessories.
- G. Section 09 2116 - Gypsum Board Assemblies: Sealing acoustical and sound-rated walls and ceilings.
- H. Section 09 3000 - Tiling: Sealant between tile and plumbing fixtures and at junctions with other materials and changes in plane.

1.03 REFERENCE STANDARDS

- A. ASTM C661 - Standard Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer; 2006 (Reapproved 2011).
- B. ASTM C834 - Standard Specification for Latex Sealants; 2014.
- C. ASTM C919 - Standard Practice for Use of Sealants in Acoustical Applications; 2012.
- D. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2014.
- E. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2013.
- F. ASTM C1248 - Standard Test Method for Staining of Porous Substrate by Joint Sealants; 2008 (Reapproved 2012).
- G. ASTM C1311 - Standard Specification for Solvent Release Sealants; 2014.
- H. ASTM D2240 - Standard Test Method for Rubber Property--Durometer Hardness; 2005 (Reapproved 2010).

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data for Sealants: Submit manufacturer's technical data sheets for each product to be used, that includes the following.
 - 1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
 - 2. List of backing materials approved for use with the specific product.
 - 3. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
 - 4. Substrates the product should not be used on.
- C. Color Cards for Selection: Where sealant color is not specified, submit manufacturer's color cards showing standard colors available for selection.

PART 2 PRODUCTS

2.01 JOINT SEALANT APPLICATIONS

- A. Scope:
 - 1. Exterior Joints: Seal open joints, whether or not the joint is indicated on drawings, unless specifically indicated not to be sealed. Exterior joints to be sealed include, but are not limited to, the following items.
 - a. Wall expansion and control joints.
 - b. Joints between door, window, and other frames and adjacent construction.
 - c. Joints between different exposed materials.
 - d. Openings below ledge angles in masonry.
 - e. Other joints indicated below.
 - 2. Interior Joints: Do not seal interior joints unless specifically indicated to be sealed. Interior joints to be sealed include, but are not limited to, the following items.
 - a. Joints between door, window, and other frames and adjacent construction.
 - b. In sound-rated wall and ceiling assemblies, gaps at electrical outlets, wiring devices, piping, and other openings; between wall/ceiling and other construction; and other flanking sound paths.
 - c. Other joints indicated below.
 - 3. Do not seal the following types of joints.
 - a. Intentional weepholes in masonry.
 - b. Joints indicated to be treated with manufactured expansion joint cover or some other type of sealing device.
 - c. Joints where sealant is specified to be provided by manufacturer of product to be sealed.
 - d. Joints where installation of sealant is specified in another section.
 - e. Joints between suspended panel ceilings/grid and walls.
- B. Exterior Joints: Use nonsag non-staining silicone sealant, Type 1, unless otherwise indicated.
 - 1. Lap Joints in Sheet Metal Fabrications: Butyl rubber, non-curing; Type 10.
- C. Interior Joints: Use nonsag polyurethane sealant, Type 2, unless otherwise indicated.
 - 1. Wall and Ceiling Joints in Non-Wet Areas: Acrylic emulsion latex sealant; Type 4.
 - 2. Wall and Ceiling Joints in Wet Areas: Nonsag polyurethane sealant for continuous liquid immersion; Type 8.
 - 3. Floor Joints in Wet Areas: Nonsag polyurethane "nontraffic-grade" sealant suitable for continuous liquid immersion; Type 5.
 - 4. Joints between Fixtures in Wet Areas and Floors, Walls, and Ceilings: Mildew-resistant silicone sealant; white; Type 2.
 - 5. In Sound-Rated Assemblies: Acrylic emulsion latex sealant; Type 6.
 - 6. Narrow Control Joints in Interior Concrete Slabs: Self-leveling epoxy sealant; Type 9.
 - 7. Other Floor Joints: Self-leveling polyurethane "traffic-grade" sealant; Type 7.
- D. Interior Wet Areas: Bathrooms, restrooms, kitchens, food service areas, and food processing areas; fixtures in wet areas include plumbing fixtures, food service equipment, countertops, cabinets, and other similar items.

2.02 JOINT SEALANTS - GENERAL

- A. Sealants and Primers: Provide products with levels of volatile organic compound (VOC) content as indicated in Section 01 6116.

2.03 NONSAG JOINT SEALANTS

- A. Type 1 - Non-Staining Silicone Sealant: ASTM C920, Grade NS, Uses M and A; not expected to withstand continuous water immersion or traffic.
 - 1. Movement Capability: Plus and minus ____ percent, minimum.
 - 2. Non-Staining To Porous Stone: Non-staining to light-colored natural stone when tested in accordance with ASTM C1248.
 - 3. Dirt Pick-Up: Reduced dirt pick-up compared to other silicone sealants.

4. Manufacturers:
 - a. Dow Chemical Company; DOWSIL 756 SMS Building Sealant: consumer.dow.com/en-us/industry/ind-building-construction.html/#sle.
 - b. Pecora Corporation; Pecora 864 NST (Non-Staining Technology): www.pecora.com/#sle.
- B. Type 2 - Mildew-Resistant Silicone Sealant: ASTM C920, Grade NS, Uses M and A; single component, mildew resistant; not expected to withstand continuous water immersion or traffic.
 1. Color: White.
- C. Type 3 - Polyurethane Sealant: ASTM C920, Grade NS, Uses M and A; single or multicomponent; not expected to withstand continuous water immersion or traffic.
 1. Movement Capability: Plus and minus ____ percent, minimum.
 2. Color: To be selected by Architect from manufacturer's standard range.
 3. Service Temperature Range: Minus 40 to 180 degrees F.
 4. Manufacturers:
 - a. Pecora Corporation; DynaTrol II: www.pecora.com/#sle.
 - b. The QUIKRETE Companies; QUIKRETE® Polyurethane Non-Sag Sealant: www.quikrete.com/#sle.
 - c. Sherwin-Williams Company; Stampede-1/-TX Polyurethane Sealant: www.sherwin-williams.com/#sle.
- D. Type 4 - Polyurethane Sealant for Continuous Water Immersion: ASTM C920, Grade NS, Uses M and A; single or multicomponent; explicitly approved by manufacturer for continuous water immersion; suitable for traffic exposure when recessed below traffic surface .
 1. Movement Capability: Plus and minus 35 percent, minimum.
- E. Type 5 - Nonsag "Traffic-Grade" Polyurethane Sealant: ASTM C920, Grade NS, Uses M and A; single or multicomponent; explicitly approved by manufacturer for continuous water immersion and traffic without the necessity to recess sealant below traffic surface.
 1. Movement Capability: Plus and minus 25 percent, minimum.
 2. Hardness Range: 40 to 50, Shore A, when tested in accordance with ASTM C661.
- F. Type 6 - Acrylic Emulsion Latex: Water-based; ASTM C834, single component, non-staining, non-bleeding, non-sagging; not intended for exterior use.
 1. Color: Standard colors matching finished surfaces, Type OP (opaque).
 2. Manufacturers:
 - a. Pecora Corporation; AC-20 +Silicone: www.pecora.com/#sle.
 - b. Pecora Corporation; AC-20 FTR Acoustical and Insulation Sealant: www.pecora.com.
 - c. Substitutions: See Section 01 6000 - Product Requirements.
- G. Type 10 - Non-Curing Butyl Sealant: Solvent-based; ASTM C1311; single component, nonsag, non-skinning, non-hardening, non-bleeding; vapor-impermeable; intended for fully concealed applications.

2.04 SELF-LEVELING SEALANTS

- A. Type 7 - Self-Leveling Polyurethane Sealant: ASTM C920, Grade P, Uses M and A; single or multicomponent; explicitly approved by manufacturer for traffic exposure; not expected to withstand continuous water immersion .
 1. Movement Capability: Plus and minus 25 percent, minimum.
 2. Hardness Range: 35 to 55, Shore A, when tested in accordance with ASTM C661.
 3. Color: To be selected by Architect from manufacturer's standard range.
 4. Service Temperature Range: Minus 40 to 180 degrees F.
 5. Manufacturers:
 - a. Pecora Corporation; ____: www.pecora.com/#sle.
 - b. The QUIKRETE Companies; QUIKRETE® Polyurethane Self-Leveling Sealant: www.quikrete.com/#sle.

- c. Sherwin-Williams Company; Stampede 1SL Polyurethane Sealant: www.sherwin-williams.com/#sle.
 - d. Sika Corporation; Sikaflex-1c SL: www.usa-sika.com/#sle.
- B. Type 8 - Self-Leveling Polyurethane Sealant for Continuous Water Immersion: Polyurethane; ASTM C920, Grade P, Uses M and A; single or multicomponent; explicitly approved by manufacturer for traffic exposure and continuous water immersion.
 - 1. Movement Capability: Plus and minus 25 percent, minimum.
- C. Type 9 - Semi-Rigid Self-Leveling Epoxy Joint Filler: Epoxy or epoxy/polyurethane copolymer; intended for filling cracks and control joints not subject to significant movement; rigid enough to support concrete edges under traffic.
 - 1. Composition: Multi-component, 100 percent solids by weight.
 - 2. Durometer Hardness: Minimum of 85 for Type A or 35 for Type D, after seven days when tested in accordance with ASTM D2240.
 - 3. Joint Width, Minimum: 1/8 inch.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that joints are ready to receive work.
- B. Verify that backing materials are compatible with sealants.

3.02 PREPARATION

- A. Remove loose materials and foreign matter that could impair adhesion of sealant.
- B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.
- C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.
- D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.

3.03 INSTALLATION

- A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B. Perform installation in accordance with ASTM C1193.
- C. Perform acoustical sealant application work in accordance with ASTM C919.
- D. Install bond breaker backing tape where backer rod cannot be used.
- E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.
- F. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.
- G. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.
- H. Concrete Floor Joint Filler: After full cure, shave joint filler flush with top of concrete slab.

END OF SECTION

SECTION 08 1113
HOLLOW METAL DOORS AND FRAMES

.01 SELECT TYPE OF SPECIFICATION TO BE PREPARED: A LONG FORM SPEC, WITH MANUFACTURER NAMES LISTED.

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Non-fire-rated hollow metal doors and frames.
- B. Hollow metal frames for wood doors.
- C. Fire-rated hollow metal doors and frames.
- D. Thermally insulated hollow metal doors with frames.
- E. Hollow metal borrowed lites glazing frames.

1.02 RELATED REQUIREMENTS

- A. Section 08 7100 - Door Hardware: Refer to Drawings- Sheet A601.
- B. Section 08 8000 - Glazing: Glass for doors and borrowed lites.
- C. Section 09 9113 - Exterior Painting: Field painting.
- D. Section 09 9123 - Interior Painting: Field painting.

1.03 ABBREVIATIONS AND ACRONYMS

1.04 REFERENCE STANDARDS

- A. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design; 2010.
- B. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames and Frame Anchors; 2011.
- C. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100); 2014.
- D. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames; 2011.
- E. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.
- F. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable; 2015.
- G. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength; 2014.
- H. BHMA A156.115 - American National Standard for Hardware Preparation in Steel Doors and Steel Frames; 2014.
- I. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2009.
- J. NAAMM HMMA 830 - Hardware Selection for Hollow Metal Doors and Frames; 2002.
- K. NAAMM HMMA 831 - Hardware Locations for Hollow Metal Doors and Frames; 2011.
- L. NAAMM HMMA 840 - Guide Specifications for Installation and Storage of Hollow Metal Doors and Frames; 2007.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

- B. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Comply with NAAMM HMMA 840 or ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.
- B. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion and adverse effects on factory applied painted finish.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Hollow Metal Doors and Frames:
 - 1. Curries; 707 Series, an Assa Abloy Group company: www.assaabloydss.com.
 - 2. Republic Doors; Standard: www.republicdoor.com.
 - 3. Steelcraft; SL Series, an Allegion brand: www.allegion.com/us.
 - 4. Substitutions: See Section 01 6000 - Product Requirements.

2.02 PERFORMANCE REQUIREMENTS

- A. Requirements for Hollow Metal Doors and Frames:
 - 1. Steel Sheet: Comply with one or more of the following requirements; galvanized steel complying with ASTM A653/A653M, cold-rolled steel complying with ASTM A1008/A1008M, or hot-rolled pickled and oiled (HRPO) steel complying with ASTM A1011/A1011M, commercial steel (CS) Type B, for each.
 - 2. Accessibility: Comply with ICC A117.1 and ADA Standards.
 - 3. Exterior Door Top Closures: Flush end closure channel, with top and door faces aligned.
 - 4. Door Edge Profile: Manufacturers standard for application indicated.
 - 5. Typical Door Face Sheets: Flush.
 - 6. Glazed Lights: Non-removable stops on non-secure side; sizes and configurations as indicated on drawings. Style: Manufacturers standard.
 - 7. Hardware Preparations, Selections and Locations: Comply with NAAMM HMMA 830 and NAAMM HMMA 831 or BHMA A156.115 and ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.
 - 8. Zinc Coating for Typical Interior and/or Exterior Locations: Provide metal components zinc-coated (galvanized) and/or zinc-iron alloy-coated (galvanized) by the hot-dip process in accordance with ASTM A653/A653M, with manufacturer's standard coating thickness, unless noted otherwise for specific hollow metal doors and frames.
 - a. Based on SDI Standards: Provide at least A40/ZF120 (galvanized) when necessary, coating not required for typical interior door applications, and at least A60/ZF180 (galvanized) for corrosive locations.
- B. Combined Requirements: If a particular door and frame unit is indicated to comply with more than one type of requirement, comply with the specified requirements for each type; for instance, an exterior door that is also indicated as being sound-rated must comply with the requirements specified for exterior doors and for sound-rated doors; where two requirements conflict, comply with the most stringent.

2.03 HOLLOW METAL DOORS

- A. Type 1, Exterior Doors: Thermally insulated.
 - 1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
 - a. Level 1 - Standard-duty.
 - b. Physical Performance Level C, 250,000 cycles; in accordance with ANSI/SDI A250.4.
 - c. Model 1 - Full Flush.
 - d. Door Face Metal Thickness: 20 gage, 0.032 inch, minimum.
 - 2. Core Material: Polyurethane, 1.8 lbs/cu ft minimum density.

3. Door Thermal Resistance: R-Value of 8.7, minimum, for installed thickness of polyurethane.
 4. Door Thickness: 1-3/4 inch, nominal.
 5. Weatherstripping: Refer to Section 08 7100.
 6. Door Finish: Factory primed and field finished.
- B. Type 2, Interior Doors, Non-Fire Rated:
1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
 - a. Level 1 - Standard-duty.
 - b. Physical Performance Level C, 250,000 cycles; in accordance with ANSI/SDI A250.4.
 - c. Model 1 - Full Flush.
 - d. Door Face Metal Thickness: 20 gage, 0.032 inch, minimum.
 2. Door Core Material: Manufacturers standard core material/construction and in compliance with requirements.
 3. Door Thickness: 1-3/4 inch, nominal.
 4. Door Finish: Factory primed and field finished.

2.04 HOLLOW METAL FRAMES

- A. Comply with standards and/or custom guidelines as indicated for corresponding door in accordance with applicable door frame requirements.
- B. Frame Finish: Factory primed and field finished.
- C. Exterior Door Frames: Face welded type.
 1. Galvanizing: Components hot-dipped zinc-iron alloy-coated (galvannealed) in accordance with ASTM A653/A653M, with A40/ZF120 coating.
 2. Frame Metal Thickness: 16 gage, 0.053 inch, minimum.
 3. Weatherstripping: Separate, see Section 08 7100.
- D. Interior Door Frames, Non-Fire Rated: Full profile/continuously welded type.
 1. Frame Metal Thickness: 16 gage, 0.053 inch, minimum.
- E. Door Frames, Fire-Rated: Face welded type.
 1. Fire Rating: Same as door, labeled.
- F. Frames for Wood Doors: Comply with frame requirements in accordance with corresponding door.
- G. Borrowed Lites Glazing Frames: Construction and face dimensions to match door frames, and as indicated on drawings.
- H. Provide mortar guard boxes for hardware cut-outs in frames to be installed in masonry or to be grouted.
- I. Frames in Masonry Walls: Size to suit masonry coursing with head member 4 inch high to fill opening without cutting masonry units.
- J. Frames Wider than 48 inches: Reinforce with steel channel fitted tightly into frame head, flush with top.

2.05 FINISHES

- A. Primer: Rust-inhibiting, complying with ANSI/SDI A250.10, door manufacturer's standard.

2.06 ACCESSORIES

- A. Glazing: As specified in Section 08 8000, factory installed.
- B. Grout for Frames: Portland cement grout with maximum 4 inch slump for hand troweling; thinner pumpable grout is prohibited.
- C. Silencers: Resilient rubber, fitted into drilled hole; provide three on strike side of single door, three on center mullion of pairs, and two on head of pairs without center mullions.
- D. Temporary Frame Spreaders: Provide for factory- or shop-assembled frames.

2.07 FINISHES

- A. Primer: Rust-inhibiting, complying with ANSI/SDI A250.10, door manufacturer's standard.
- B. Bituminous Coating: Asphalt emulsion or other high-build, water-resistant, resilient coating.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that opening sizes and tolerances are acceptable.
- C. Verify that finished walls are in plane to ensure proper door alignment.

3.02 PREPARATION

- A. Coat inside of frames to be installed in masonry or to be grouted, with bituminous coating, prior to installation.

3.03 INSTALLATION

- A. Install doors and frames in accordance with manufacturer's instructions and related requirements of specified door and frame standards or custom guidelines indicated.
- B. Coordinate frame anchor placement with wall construction.
- C. Grout frames in masonry construction, using hand trowel methods; brace frames so that pressure of grout before setting will not deform frames.
- D. Install door hardware as specified in Section 08 7100.

3.04 TOLERANCES

- A. Maximum Diagonal Distortion: 1/16 inch measured with straight edge, corner to corner.

3.05 ADJUSTING

- A. Adjust for smooth and balanced door movement.

3.06 SCHEDULE

- A. Refer to Door and Frame Schedule on the drawings.

END OF SECTION

SECTION 08 1416
FLUSH WOOD DOORS

PART 2 PRODUCTS

1.01 DOORS AND PANELS

- A. Doors: Refer to drawings for locations and additional requirements.

1.02 DOOR AND PANEL CORES

1.03 DOOR FACINGS

1.04 ACCESSORIES

- A. Glazed Openings:
 - 1. Heat-Strengthened and Fully Tempered Glass: 1.
 - 2. Fire-Protection-Rated Glass: Safety Certification, 1, Category II.
 - 3. Tint: Clear.
- B. Glazing Stops: Wood, of same species as door facing, mitered corners; prepared for countersink style tamper proof screws.
- C. Astragals for Non-Rated Double Doors: Wood, T shaped, overlapping and recessed at face edge.
- D. Astragals for Fire Rated Double Doors: Steel, T shaped, overlapping and recessed at face edge, specifically for double doors.

1.05 DOOR CONSTRUCTION

- A. Fabricate doors in accordance with door quality standard specified.
- B. Glazed Openings: Non-removable stops on non-secure side; sizes and configurations as indicated on drawings.
- C. Factory machine doors for hardware other than surface-mounted hardware, in accordance with hardware requirements and dimensions.
- D. Factory fit doors for frame opening dimensions identified on shop drawings, with edge clearances in accordance with specified quality standard.
- E. Provide edge clearances in accordance with the quality standard specified.

1.06 FACTORY FINISHING - WOOD VENEER DOORS

END OF SECTION

SECTION 08 3100
ACCESS DOORS AND PANELS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Wall mounted access units.
- B. Ceiling mounted access units.

1.02 RELATED REQUIREMENTS

- A. Section 09 9123 - Interior Painting: Field paint finish.

1.03 REFERENCE STANDARDS

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide sizes, types, finishes, hardware, scheduled locations, and details of adjoining work.
- C. Shop Drawings: Indicate exact position of each access door and/or panel unit.

PART 2 PRODUCTS

2.01 ACCESS DOORS AND PANELS ASSEMBLIES

- A. Wall-Mounted Units with Return Air Grille:
 - 1. Size: 12 inch by 12 inch.
 - 2. Door/Panel: Hinged, standard duty, with tool-operated spring or cam lock and no handle.
 - 3. Tool-operated spring or cam lock; no handle.
 - 4. Wall Mounting Criteria: Provide surface-mounted face frame and door surface flush with frame surface.
- B. Wall-Mounted Units in Wet Areas:
 - 1. Size: 12 inch by 12 inch.
 - 2. Door/Panel: Hinged, standard duty, with tool-operated spring or cam lock and no handle.
 - 3. Tool-operated spring or cam lock; no handle.
 - 4. Wall Mounting Criteria: Provide surface-mounted face frame and door surface flush with frame surface.
- C. Fire-Rated Wall-Mounted Units:
 - 1. Wall Fire-Rating: As indicated on drawings.
 - 2. Size: 12 inch by 12 inch.
 - 3. Door/Panel: Insulated double-surface panel, with tool-operated spring or cam lock and no handle.
 - 4. Tool-operated spring or cam lock; no handle.
- D. Ceiling-Mounted Units with Return Air Grille:
 - 1. Size - Lay-In Grid Ceilings: To match module of ceiling grid.
 - 2. Size - Other Ceilings: 12 inch by 12 inch.
 - 3. Door/Panel: Hinged, standard duty, with tool-operated spring or cam lock and no handle.
 - 4. Tool-operated spring or cam lock; no handle.

2.02 WALL AND CEILING MOUNTED ACCESS UNITS

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that rough openings are correctly sized and located.

3.02 INSTALLATION

- A. Install units in accordance with manufacturer's instructions.
- B. Install frames plumb and level in openings, and secure units rigidly in place.
- C. Position units to provide convenient access to concealed equipment when necessary.

END OF SECTION

SECTION 08 3313
COILING COUNTER DOORS

.01 SELECT TYPE OF SPECIFICATION TO BE PREPARED: A SHORT FORM 3-PART SPEC, WITH MANUFACTURER NAMES LISTED.

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Non-fire-rated coiling counter doors and operating hardware.

1.02 RELATED REQUIREMENTS

- A. Section 06 1000 - Rough Carpentry: Rough openings.
- B. Section 07 9200 - Joint Sealants: Sealing joints between frames and adjacent construction.
- C. Section 08 7100 - Door Hardware: Refer to Drawings- Sheet A601: Cylinder cores and keys.
- D. Section 09 2116 - Gypsum Board Assemblies: Rough openings.
- E. Section 09 9113 - Exterior Painting: Field paint finish.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Submit manufacturer's standard literature showing materials and details of construction and finish. Include data on electrical operation.
- C. Shop Drawings: Indicate rough and actual opening dimensions, anchorage methods, hardware locations, and installation details.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Coiling Counter Doors:
 - 1. Alpine Overhead Doors, Inc; Counter Shutter: www.alpinedoors.com.
 - 2. Overhead Door; Model 652.
 - 3. Cornell Iron Works; Rolling Counter Doors
 - 4. Substitutions: See Section 01 6000 - Product Requirements.

2.02 COILING COUNTER DOORS

2.03 MATERIALS

- A. Curtain Construction: Interlocking, single thickness slats.
 - 1. Slat Ends: Alternate slats fitted with end locks to act as wearing surface in guides and to prevent lateral movement.
 - 2. Curtain Bottom: Fitted with angles to provide reinforcement and positive contact in closed position.
- B. Guide Construction: Continuous, of profile to retain door in place, with mounting brackets of same metal.
- C. Lock Hardware:
- D. Latching Mechanism: Inside mounted, adjustable keeper, spring activated latch bar feature to keep in locked or retracted position.
- E. Roller Shaft Counterbalance: Steel pipe and torsion steel spring system, capable of producing torque sufficient to ensure smooth operation of curtain from any position and capable of holding position at mid-travel; with adjustable spring tension; requiring 25 lb nominal force to operate.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install units in accordance with manufacturer's instructions.
- B. Use anchorage devices to securely fasten assembly to wall construction and building framing without distortion or stress.
- C. Securely and rigidly brace components suspended from structure. Secure guides to structural members only.
- D. Fit and align assembly including hardware; level and plumb, to provide smooth operation.

3.02 TOLERANCES

- A. Maintain dimensional tolerances and alignment with adjacent work.
- B. Maximum Variation From Plumb: 1/16 inch.
- C. Maximum Variation From Level: 1/16 inch.
- D. Longitudinal or Diagonal Warp: Plus or minus 1/8 inch per 10 ft straight edge.

3.03 ADJUSTING

- A. Adjust operating assemblies for smooth and noiseless operation.

3.04 CLEANING

- A. Clean installed components.
- B. Remove labels and visible markings.

END OF SECTION

SECTION 08 4229
AUTOMATIC ENTRANCES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Operators for doors provided in other sections.
- B. Controllers, actuators and safety devices.
- C. Maintenance.

1.02 RELATED REQUIREMENTS

- A. Section 28 4600 - Fire Detection and Alarm: Connection to fire alarm system.

1.03 REFERENCE STANDARDS

- A. BHMA A156.10 - American National Standard for Power Operated Pedestrian Doors; 2011.
- B. BHMA A156.19 - American National Standard for Power Assist and Low Energy Power Operated Doors; 2013.
- C. NFPA 101 - Life Safety Code; 2015.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings:
 - 1. Indicate layout and dimensions; head, jamb, and sill conditions; elevations; components, anchorage, recesses, materials, and finishes, electrical characteristics and connection requirements.
 - 2. Identify installation tolerances required, assembly conditions, routing of service lines and conduit, and locations of operating components and boxes.
- C. Product Data: Provide data on system components, sizes, features, and finishes.
- D. Warranty: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.
- E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. Wrenches and other tools required for maintenance of equipment.

1.05 WARRANTY

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Swinging Automatic Entrance Door Assemblies:
 - 1. ASSA ABLOY Entrance Solutions; Besam SW200i: www.besam-usa.com/#sle.
 - 2. Horton Automatics; HD-Swing Series 4500LE: www.hortondoors.com.
 - 3. Substitutions: See Section 01 6000 - Product Requirements.

2.02 POWER OPERATED DOORS

- A. Power Operated Doors: Provide products that comply with NFPA 101 and requirements of authorities having jurisdiction; provide equipment selected for actual door weight and for light pedestrian traffic, unless otherwise indicated.
 - 1. Swinging Door Operators: Fully adjustable for opening and closing speeds, checking speeds, and hold-open time; in the event of power failure, disengage operator allowing door to function as a door with a spring closer.
 - 2. Exterior Swinging Doors: Provide equipment capable of operating, closing, and holding doors closed under positive and negative differential pressure; if necessary, provide power closing.

3. Exterior and Vestibule Doors: Provide equipment suitable for operating temperature range of minus 20 to plus 140 degrees F ambient.
- B. Swinging Doors with Low-Energy Power Operators: Comply with BHMA A156.19; operator activated by pushing or pulling the door or by a manual actuator, not a sensor; safeties not required.
 1. Kinetic Energy of Door in Motion: 1.25 pound-force foot, maximum.
 2. Force Required to Prevent Stopped Door From Opening or Closing: 15 pound-force, maximum, measured at 1 inch from the latch edge of the door at any point in the swing cycle.
 3. Force Required to Release Latch, When Unpowered: 15 pound-force, maximum, measured at 1 inch from the latch edge of the door at any point in the swing cycle.
 4. Force Required to Set Door in Motion When Unpowered: 30 pound-force, maximum, measured at 1 inch from the latch edge of the door at any point in the closing cycle.
 5. Force Required to Fully Open Door When Unpowered: 15 pound-force, maximum, measured at 1 inch from the latch edge of the door at any point in the closing cycle.
- C. Operators:
 1. Electric Operators: 1/8 hp minimum, self-contained, gear driven, with release clutch.

2.03 OPERATORS FOR SWINGING DOORS PROVIDED BY OTHERS

- A. Door Operator: Electric, concealed overhead.
 1. Operation: Low-energy power open, spring close operation.
 2. Variable speed control for opening and closing cycles.
 3. "Push" Side Actuator: Push plate.
 4. "Pull" Side Actuator: Push plate.
 5. Pull-Side Safety: Door-mounted.
 6. Hold Open: Toggle switch at inside head of doors; deactivate hold-open on activation of fire alarm system, refer to Section 28 4600.

2.04 CONTROLLERS, ACTUATORS, AND SAFETIES

- A. Controller: Provide microprocessor operated controller for each door.
- B. Comply with BHMA A156.10 for actuator and safety types and zones.
- C. Push Plate Actuator: Standard wall mounted, recessed momentary contact type; satin stainless steel plate; 6 inches diameter; labeled PUSH.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that electric power is available and is of the correct characteristics.

3.02 INSTALLATION

- A. Install equipment in accordance with manufacturer's instructions.
- B. Coordinate installation of components with related and adjacent work; level and plumb.

3.03 ADJUSTING

- A. Adjust door equipment for correct function and smooth operation.

3.04 CLEANING

- A. Remove temporary protection, clean exposed surfaces.

3.05 CLOSEOUT ACTIVITIES

- A. Demonstrate operation, operating components, adjustment features, and lubrication requirements.

3.06 MAINTENANCE

- A. See Section 01 7000 - Execution and Closeout Requirements, for additional requirements relating to maintenance service.

- B. Provide service and maintenance of operating equipment for one year from Date of Substantial Completion, at no extra charge to Owner.

END OF SECTION

SECTION 08 4313
ALUMINUM-FRAMED STOREFRONTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Aluminum-framed storefront, with vision glass.
- B. Aluminum doors and frames.

1.02 RELATED REQUIREMENTS

- A. Section 05 5000 - Metal Fabrications: Steel attachment devices.
- B. Section 07 2500 - Weather Barriers: Sealing framing to weather barrier installed on adjacent construction.
- C. Section 07 9200 - Joint Sealants: Sealing joints between frames and adjacent construction.
- D. Section 08 4229 - Automatic Entrances.
- E. Section 08 4413 - Glazed Aluminum Curtain Walls.
- F. Section 08 5113 - Aluminum Windows: Operable sash within glazing system.
- G. Section 08 7100 - Door Hardware: Refer to Drawings- Sheet A601: Hardware items other than specified in this section.
- H. Section 08 8000 - Glazing: Glass and glazing accessories.
- I. Section 12 2400 - Window Shades: Attachments to framing members.

1.03 REFERENCE STANDARDS

- A. AAMA CW-10 - Care and Handling of Architectural Aluminum From Shop to Site; 2015.
- B. AAMA 609 & 610 - Cleaning and Maintenance Guide for Architecturally Finished Aluminum (Combined Document); 2015.
- C. AAMA 1503 - Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections; 2009.
- D. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels; 2013.
- E. ASCE 7 - Minimum Design Loads for Buildings and Other Structures; 2010, with 2013 Supplements and Errata.
- F. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2014.
- G. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes [Metric]; 2013.
- H. ASTM E283 - Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen; 2004 (Reapproved 2012).
- I. ASTM E330/E330M - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference; 2014.
- J. ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference; 2000 (Reapproved 2009).

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate with installation of other components that comprise the exterior enclosure.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

- B. Product Data: Provide component dimensions, describe components within assembly, anchorage and fasteners, glass and infill, internal drainage details .
- C. Shop Drawings: Indicate system dimensions, framed opening requirements and tolerances, affected related work, expansion and contraction joint location and details, and field welding required.
- D. Samples: Submit two samples 3 x 5 inches in size illustrating finished aluminum surface.
- E. Hardware Schedule: Complete itemization of each item of hardware to be provided for each door, cross-referenced to door identification numbers in Contract Documents.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Handle products of this section in accordance with AAMA CW-10.
- B. Protect finished aluminum surfaces with wrapping. Do not use adhesive papers or sprayed coatings that bond to aluminum when exposed to sunlight or weather.

PART 2 PRODUCTS

2.01 BASIS OF DESIGN -- FRAMING FOR INSULATING GLAZING

- A. Front-Set Style, Thermally-Broken:
 - 1. Basis of Design: YKK AP America Inc; YES 600.
 - 2. Vertical Mullion Dimensions: 1 3/4 inches wide by 6 inches deep..
- B. Other Manufacturers: Provide either the product identified as "Basis of Design" or an equivalent product of one of the manufacturers listed below:
 - 1. C.R. Laurence Company, Inc; U.S. Aluminum; _____: www.crl-arch.com/#sle.
 - 2. EFCO, a Pella Company; _____: www.efcocorp.com/#sle.
 - 3. Kawneer, an Alcoa Company.

2.02 BASIS OF DESIGN -- FRAMING FOR MONOLITHIC GLAZING

- A. Front-Set Style:
 - 1. Basis of Design: YKK AP America Inc.; YES 600..
 - 2. Vertical Mullion Dimensions: 1-3/4 inches wide by 6 inches deep.
- B. Other Manufacturers: Provide either the product identified as "Basis of Design" or an equivalent product of one of the manufacturers listed below:
 - 1. C.R. Laurence Company, Inc; U.S. Aluminum; _____: www.crl-arch.com/#sle.
 - 2. EFCO, a Pella Company; _____: www.efcocorp.com/#sle.
 - 3. Kawneer North America.

2.03 BASIS OF DESIGN -- SWINGING DOORS

- A. Wide Stile, Monolithic Glazing non-thermal:
 - 1. Basis of Design: YKK 50D Series.
- B. Wide Stile, Insulating Glazing, Thermally-Broken:
 - 1. Basis of Design: YKK Megatherm 50XT
- C. Other Manufacturers: Provide either the product identified as "Basis of Design" or an equivalent product of one of the manufacturers listed below:
 - 1. C.R. Laurence Company, Inc; U.S. Aluminum; _____: www.crl-arch.com/#sle.
 - 2. EFCO, a Pella Company; _____: www.efcocorp.com/#sle.
 - 3. Kawneer North America.

2.04 ALUMINUM-FRAMED STOREFRONT

- A. Aluminum-Framed Storefront: Factory fabricated, factory finished aluminum framing members with infill, and related flashings, anchorage and attachment devices.
 - 1. Finish: Superior performing organic coatings.
 - a. Factory finish all surfaces that will be exposed in completed assemblies.
 - b. Touch-up surfaces cut during fabrication so that no natural aluminum is visible in completed assemblies, including joint edges.

2. Finish Color: As selected by Architect from manufacturer's standard line.
3. Fabrication: Joints and corners flush, hairline, and weatherproof, accurately fitted and secured; prepared to receive anchors and hardware; fasteners and attachments concealed from view; reinforced as required for imposed loads.
4. Construction: Eliminate noises caused by wind and thermal movement, prevent vibration harmonics, and prevent "stack effect" in internal spaces.
5. System Internal Drainage: Drain to the exterior by means of a weep drainage network any water entering joints, condensation occurring in glazing channel, and migrating moisture occurring within system.
6. Expansion/Contraction: Provide for expansion and contraction within system components caused by cycling temperature range of 170 degrees F over a 12 hour period without causing detrimental effect to system components, anchorages, and other building elements.
7. Movement: Allow for movement between storefront and adjacent construction, without damage to components or deterioration of seals.
8. Perimeter Clearance: Minimize space between framing members and adjacent construction while allowing expected movement.
9. Air and Vapor Seal: Maintain continuous air barrier and vapor retarder throughout assembly, primarily in line with inside pane of glazing and inner sheet of infill panel and heel bead of glazing compound.

B. Performance Requirements:

1. Wind Loads: Design and size components to withstand the specified load requirements without damage or permanent set, when tested in accordance with ASTM E330/E330M, using loads 1.5 times the design wind loads and 10 second duration of maximum load.
 - a. Design Wind Loads: Comply with requirements of ASCE 7. and as indicated on the Structural Drawings.
 - b. Member Deflection: Limit member deflection to flexure limit of glass in any direction, with full recovery of glazing materials.
2. Water Penetration Resistance: No uncontrolled water on interior face, when tested in accordance with ASTM E331 at pressure differential of 10 psf.
3. Air Leakage Laboratory Test: Maximum of 0.06 cu ft/min sq ft of wall area, when tested in accordance with ASTM E283 at 6.27 psf pressure differential across assembly.
4. Condensation Resistance Factor of Framing: 78, minimum, measured in accordance with AAMA 1503.
5. Overall U-value Including Glazing: 0.36 Btu/(hr sq ft deg F), maximum.

2.05 COMPONENTS

- A. Aluminum Framing Members: Tubular aluminum sections, thermally broken with interior section insulated from exterior, drainage holes and internal weep drainage system.
 1. Framing members for interior applications need not be thermally broken.
 2. Glazing Stops: Flush.
 3. Cross-Section: 1 3/4 x 6 inch nominal dimension.
- B. Glazing: As specified in Section 08 8000.
- C. Swing Doors: Glazed aluminum.
 1. Thickness: 2 3/8 inches.
 2. Top Rail: 5 inches wide.
 3. Vertical Stiles: 5 inches wide.
 4. Bottom Rail: 10 inches wide.
 5. Finish: Same as storefront.

2.06 MATERIALS

- A. Extruded Aluminum: ASTM B221 (ASTM B221M).
- B. Fasteners: Stainless steel.

- C. Glazing Gaskets: Type to suit application to achieve weather, moisture, and air infiltration requirements.

2.07 FINISHES

- A. High Performance Organic Coatings: AAMA 2604; multiple coats, thermally cured fluoropolymer system.
- B. Color: As selected by Architect from manufacturer's standard range.

2.08 HARDWARE

- A. For each door, include weatherstripping, sill sweep strip, and threshold.
- B. Other Door Hardware: Storefront manufacturer's standard type to suit application.
 - 1. Finish on Hand-Contacted Items: Satin Stainless Steel.
 - 2. For each door, include butt hinges, pivots, push handle, and pull handle.
- C. Automatic Door Operators and Actuators: As specified in Section 08 4229.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify dimensions, tolerances, and method of attachment with other work.
- B. Verify that wall openings and adjoining air and vapor seal materials are ready to receive work of this section.

3.02 INSTALLATION

- A. Install wall system in accordance with manufacturer's instructions.
- B. Attach to structure to permit sufficient adjustment to accommodate construction tolerances and other irregularities.
- C. Provide alignment attachments and shims to permanently fasten system to building structure.
- D. Align assembly plumb and level, free of warp or twist. Maintain assembly dimensional tolerances, aligning with adjacent work.
- E. Provide thermal isolation where components penetrate or disrupt building insulation.
- F. Install sill flashings. Turn up ends and edges; seal to adjacent work to form water tight dam.
- G. Where fasteners penetrate sill flashings, make watertight by seating and sealing fastener heads to sill flashing.
- H. Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.
- I. Set thresholds in bed of sealant and secure.
- J. Install hardware using templates provided.
 - 1. See Section 08 7100 for hardware installation requirements.
 - 2. See Section 08 4229 for operator and actuator installation requirements.
- K. Install glass and infill panels in accordance with Section 08 8000, using glazing method required to achieve performance criteria.
- L. Touch-up minor damage to factory applied finish; replace components that cannot be satisfactorily repaired.

3.03 TOLERANCES

- A. Maximum Variation from Plumb: 0.06 inch per 3 feet non-cumulative or 0.06 inch per 10 feet, whichever is less.
- B. Maximum Misalignment of Two Adjoining Members Abutting in Plane: 1/32 inch.

3.04 ADJUSTING

- A. Adjust operating hardware and sash for smooth operation.

3.05 CLEANING

- A. Remove protective material from pre-finished aluminum surfaces.
- B. Wash down surfaces with a solution of mild detergent in warm water, applied with soft, clean wiping cloths, and take care to remove dirt from corners and to wipe surfaces clean.
- C. Upon completion of installation, thoroughly clean aluminum surfaces in accordance with AAMA 609 & 610.

3.06 PROTECTION

- A. Protect installed products from damage until Date of Substantial Completion.

END OF SECTION

SECTION 08 4413
GLAZED ALUMINUM CURTAIN WALLS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Aluminum-framed curtain wall, with vision glazing and glass infill panels.

1.02 RELATED REQUIREMENTS

- A. Section 05 1200 - Structural Steel Framing: Steel attachment members.
- B. Section 07 2500 - Weather Barriers: Sealing framing to weather barrier installed on adjacent construction.
- C. Section 07 9200 - Joint Sealants: Sealing joints between frames and adjacent construction.
- D. Section 08 4313 - Aluminum-Framed Storefronts: Entrance framing and doors.
- E. Section 08 8000 - Glazing.
- F. Section 09 2116 - Gypsum Board Assemblies: Metal stud and gypsum board wall at interior of curtain wall.

1.03 REFERENCE STANDARDS

- A. AAMA CW-10 - Care and Handling of Architectural Aluminum From Shop to Site; 2015.
- B. AAMA 609 & 610 - Cleaning and Maintenance Guide for Architecturally Finished Aluminum (Combined Document); 2015.
- C. AAMA 1503 - Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections; 2009.
- D. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels; 2013.
- E. ASCE 7 - Minimum Design Loads for Buildings and Other Structures; 2010, with 2013 Supplements and Errata.
- F. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2014.
- G. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2015.
- H. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2014.
- I. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes [Metric]; 2013.
- J. ASTM C794 - Standard Test Method for Adhesion-In-Peel of Elastomeric Joint Sealants; 2015.
- K. ASTM E283 - Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen; 2004 (Reapproved 2012).
- L. SSPC-Paint 20 - Zinc-Rich Primers (Type I, "Inorganic," and Type II, "Organic"); 2002 (Ed. 2004).

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate with installation of other components that comprise the exterior enclosure.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide component dimensions, describe components within assembly, anchorage and fasteners, internal drainage details, glazing, and infill.

- C. Shop Drawings: Indicate system dimensions, framed opening requirements and tolerances, affected related Work, expansion and contraction joint location and details, and field welding required.
- D. Samples: Submit two samples 3 x 5 inches in size illustrating finished aluminum surface, glazing.
- E. Design Data: Provide framing member structural and physical characteristics and engineering calculations, and identify dimensional limitations; include load calculations at points of attachment to building structure.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with not less than three years of documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Handle products of this section in accordance with AAMA CW-10.
- B. Protect finished aluminum surfaces with wrapping. Do not use adhesive papers or sprayed coatings that bond to aluminum when exposed to sunlight or weather.

1.08 FIELD CONDITIONS

- A. Do not install sealants when ambient temperature is less than 40 degrees F. Maintain this minimum temperature during and 48 hours after installation.

PART 2 PRODUCTS

2.01 BASIS OF DESIGN - CURTAIN WALL SYSTEMS

- A. Pressure Cap Four Sides; Not Unitized, Field Assembled:
 - 1. Basis of Design: YCW 750 Series; YKK AP America Inc.
- B. Pressure Cap at Four Sides; Unitized and Thermally Enhanced:
- C. Other Manufacturers: Provide either product identified as "Basis of Design" or an equivalent product of one of the manufacturers listed below.
 - 1. C.R. Laurence Company, Inc; U.S. Aluminum; ____: www.crl-arch.com/#sle.
 - 2. EFCO, a Pella Company; ____: www.efcocorp.com/#sle.
 - 3. Trulite Glass & Aluminum Solutions, LLC; ____: www.trulite.com/#sle.
- D. Substitutions: See Section 01 6000 - Product Requirements.

2.02 CURTAIN WALL

- A. Aluminum-Framed Curtain Wall: Factory fabricated, factory finished aluminum framing members with infill, and related flashings, anchorage and attachment devices.
 - 1. Fabrication Method: Field fabricated stick system.
 - 2. Glazing Method: Field glazed system.
 - 3. Vertical Mullion Dimensions: 2 1/2" wide X 6" deep.
 - 4. Finish: High performance organic coatings.
 - a. Factory finish surfaces that will be exposed in completed assemblies.
 - b. Touch-up surfaces cut during fabrication so that no natural aluminum is visible in completed assemblies, including joint edges.
 - c. Coat concealed metal surfaces that will be in contact with cementitious materials or dissimilar metals with bituminous paint.
 - 5. Provide flush joints and corners, weathersealed, accurately fitted and secured; prepared to receive anchors; fasteners and attachments concealed from view; reinforced as required for imposed loads.
 - 6. Construction: Eliminate noises caused by wind and thermal movement, prevent vibration harmonics, and prevent "stack effect" in internal spaces.
 - 7. System Internal Drainage: Drain to the exterior by means of a weep drainage network any water entering joints, condensation occurring in glazing channel, and migrating moisture occurring within system.

8. Air and Vapor Seal: Maintain continuous air barrier and vapor retarder throughout assembly, primarily in line with inside pane of glazing and heel bead of glazing compound.
 9. Perimeter Clearance: Minimize space between framing members and adjacent construction while allowing expected movement.
- B. Structural Performance Requirements: Design and size components to withstand the following load requirements without damage or permanent set.
1. Design Wind Loads: Comply with the requirements of ASCE 7. and as indicated on Structural Drawings.
 2. Movement: Accommodate the following movement without damage to components or deterioration of seals:
 - a. Expansion and contraction caused by 180 degrees F surface temperature.
 - b. Expansion and contraction caused by cycling temperature range of 170 degrees F over a 12 hour period.
 - c. Movement of curtain wall relative to perimeter framing.
 - d. Deflection of structural support framing, under permanent and dynamic loads.
- C. Water Penetration Resistance on Manufactured Assembly: No uncontrolled water on indoor face when tested as follows:
1. Test Pressure Differential: 15 psf.
- D. Air Leakage Laboratory Test: Maximum of 0.06 cu ft/min sq ft of wall area, when tested in accordance with ASTM E283 at 6.27 psf pressure differential across assembly.
- E. Thermal Performance Requirements:
1. Condensation Resistance Factor of Framing: 78, minimum, measured in accordance with AAMA 1503.
 2. Overall U-value Including Glazing: 0.36 Btu/(hr sq ft deg F), maximum.

2.03 COMPONENTS

- A. Aluminum Framing Members: Tubular aluminum sections, thermally broken with interior section insulated from exterior, drainage holes and internal weep drainage system.
1. Cross-Section: 2 1/2 by 6 inch nominal dimension.
 2. Structurally Reinforced Members: Extruded aluminum with internal reinforcement of structural steel member.
- B. Glazing: As specified in Section 08 8000.

2.04 MATERIALS

- A. Extruded Aluminum: ASTM B221 (ASTM B221M).
- B. Structural Steel Sections: ASTM A36/A36M; galvanized in accordance with requirements of ASTM A123/A123M.
- C. Fasteners: Stainless steel; type as required or recommended by curtain wall manufacturer.
- D. Exposed Flashings: Aluminum sheet, 20 gage, 0.032 inch minimum thickness; finish to match framing members.
- E. Weatherseal Sealant: Silicone, with adhesion in compliance with ASTM C794; compatible with glazing accessories.
- F. Sill Flashing Sealant: Elastomeric, silicone or polyurethane, and compatible with flashing material.
- G. Glazing Gaskets: Type to suit application to achieve weather, moisture, and air infiltration requirements.
- H. Glazing Accessories: As specified in Section 08 8000.
- I. Touch-Up Primer for Galvanized Steel Surfaces: SSPC-Paint 20, zinc rich.

2.05 FINISHES

- A. High Performance Organic Coatings: AAMA 2604; multiple coats, thermally cured fluoropolymer system.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify dimensions, tolerances, and method of attachment with other related work.
- B. Verify that curtain wall openings and adjoining air and vapor seal materials are ready to receive work of this section.
- C. Verify that anchorage devices have been properly installed and located.

3.02 INSTALLATION

- A. Install curtain wall system in accordance with manufacturer's instructions.
- B. Attach to structure to permit sufficient adjustment to accommodate construction tolerances and other irregularities.
- C. Provide alignment attachments and shims to permanently fasten system to building structure.
- D. Align assembly plumb and level, free of warp or twist. Maintain assembly dimensional tolerances, aligning with adjacent work.
- E. Provide thermal isolation where components penetrate or disrupt building insulation.
- F. Install sill flashings. Turn up ends and edges; seal to adjacent work to form water tight dam.
- G. Touch-up minor damage to factory applied finish; replace components that cannot be satisfactorily repaired.

3.03 TOLERANCES

- A. Maximum Variation from Plumb: 0.06 inches every 3 ft non-cumulative or 0.5 inches per 100 ft, whichever is less.
- B. Maximum Misalignment of Two Adjoining Members Abutting in Plane: 1/32 inch.
- C. Sealant Space Between Curtain Wall Mullions and Adjacent Construction: Maximum of 3/4 inch and minimum of 1/4 inch.

3.04 CLEANING

- A. Remove protective material from pre-finished aluminum surfaces.
- B. Wash down surfaces with a solution of mild detergent in warm water, applied with soft, clean wiping cloths, take care to remove dirt from corners, and wipe surfaces clean.
- C. Upon completion of installation, thoroughly clean aluminum surfaces in accordance with AAMA 609 & 610.

3.05 PROTECTION

- A. Protect installed products from damage until Date of Substantial Completion.

END OF SECTION

SECTION 08 8000
GLAZING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Insulating glass units.
- B. Glazing units.
- C. Glazing compounds and accessories.

1.02 RELATED REQUIREMENTS

- A. Section 07 2500 - Weather Barriers.
- B. Section 07 9200 - Joint Sealants: Sealants for other than glazing purposes.
- C. Section 08 1113 - Hollow Metal Doors and Frames: Glazed lites in doors and borrowed lites.
- D. Section 08 1416 - Flush Wood Doors: Glazed lites in doors.
- E. Section 08 4229 - Automatic Entrances: Glazing furnished as part of door assembly.
- F. Section 08 8300 - Mirrors.

1.03 REFERENCE STANDARDS

- A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials; current edition.
- B. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings, Safety Performance Specifications and Methods of Test; 2010.
- C. ASCE 7 - Minimum Design Loads for Buildings and Other Structures; 2010, with 2013 Supplements and Errata.
- D. ASTM C864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers; 2005 (Reapproved 2011).
- E. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2014.
- F. ASTM C1036 - Standard Specification for Flat Glass; 2011.
- G. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass; 2012.
- H. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2013.
- I. ASTM E1300 - Standard Practice for Determining Load Resistance of Glass in Buildings; 2012a.
- J. GANA (SM) - GANA Sealant Manual; 2008.
- K. NFRC 100 - Procedure for Determining Fenestration Product U-factors; 2014.
- L. NFRC 200 - Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence; 2014.
- M. NFRC 300 - Test Method for Determining the Solar Optical Properties of Glazing Materials and Systems; 2014.

1.04 FIELD CONDITIONS

- A. Do not install glazing when ambient temperature is less than 40 degrees F.
- B. Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

1.05 WARRANTY

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Insulating Glass Units: Provide a five (5) year manufacturer warranty to include coverage for seal failure, interpane dusting or misting, including providing products to replace failed units.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Glass Fabricators:
 - 1. Viracon, Inc: www.viracon.com/#sle.
 - 2. Solar Seal: www.solarseal.com.
 - 3. Substitutions: Refer to Section 01 6000 - Product Requirements.
- B. Float Glass Manufacturers:
 - 1. Cardinal Glass Industries; ____: www.cardinalcorp.com/#sle.
 - 2. Guardian Glass, LLC; ____: www.guardianglass.com/#sle.
 - 3. Pilkington North America Inc; ____: www.pilkington.com/na/#sle.
 - 4. Vitro Architectural Glass (formerly PPG Glass); ____: www.vitroglazings.com/#sle.
 - 5. Substitutions: Refer to Section 01 6000 - Product Requirements.
- C. Fire-Protection-Rated Glass: Provide products as required to achieve indicated fire-rating period.
 - 1. SAFTIFIRST, a division of O'Keeffe's Inc; SuperClear 45-HS: www.safti.com/#sle.
 - 2. SCHOTT North America Inc; PYRAN Platinum: www.us.schott.com/#sle.
 - 3. Technical Glass Products; ____: www.fireglass.com/#sle.
 - 4. Vetrotech North America; Contraflam 45: www.vetrotechusa.com/#sle.

2.02 PERFORMANCE REQUIREMENTS - EXTERIOR GLAZING ASSEMBLIES

- A. Provide type and thickness of exterior glazing assemblies to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of glass.
 - 1. Design Pressure:
 - a. Positive Design Pressure: 24 psf.
 - b. Negative Design Pressure: 32 psf.
 - 2. Comply with ASTM E1300 for design load resistance of glass type, thickness, dimensions, and maximum lateral deflection of supported glass.
 - 3. Seismic Loads: Design and size glazing components to withstand seismic loads and sway displacement in accordance with the requirements of ASCE 7.
 - 4. Provide glass edge support system sufficiently stiff to limit the lateral deflection of supported glass edges to less than 1/175 of their lengths under specified design load.
 - 5. Glass thicknesses listed are minimum.
- B. Vapor Retarder and Air Barrier Seals: Provide completed assemblies that maintain continuity of building enclosure vapor retarder and air barrier.
 - 1. In conjunction with vapor retarder and joint sealer materials described in other sections.
 - a. Refer to Section 07 2500.
 - 2. To utilize the inner pane of multiple pane insulating glass units for the continuity of the vapor retarder and air barrier seal.
 - 3. To maintain a continuous vapor retarder and air barrier throughout the glazed assembly from glass pane to heel bead of glazing sealant.
- C. Thermal and Optical Performance: Provide exterior glazing products with performance properties as indicated. Performance properties are in accordance with manufacturer's published data as determined with the following procedures and/or test methods:
 - 1. Center of Glass U-Value: Comply with NFRC 100 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
 - 2. Center of Glass Solar Heat Gain Coefficient (SHGC): Comply with NFRC 200 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
 - 3. Solar Optical Properties: Comply with NFRC 300 test method.

2.03 GLASS MATERIALS

- A. Float Glass: Provide float glass based glazing unless otherwise indicated.
 - 1. Annealed Type: ASTM C1036, Type I - Transparent Flat, Class 1 - Clear, Quality - Q3.

2. Kind HS - Heat-Strengthened Type: Complies with ASTM C1048.
3. Fully Tempered Safety Glass: Complies with ANSI Z97.1 or 16 CFR 1201 criteria for safety glazing used in hazardous locations.

2.04 BASIS OF DESIGN - INSULATING GLASS UNITS

- A. Type IG-1 - Insulating Glass Units: Vision glazing, with Low-E coating.
 1. Space between lites filled with argon.
 2. Total Thickness: 1 inch.
 3. Thermal Transmittance (U-Value), Winter - Center of Glass: 0.24, maximum.
 4. Inboard Lite: Heat-strengthened float glass, 1/4 inch thick.
 - a. Coating: No coating on inboard lite.
 - b. Glass: Clear.
 5. Basis of Design - Viracon.
 6. Outboard Lite: Heat-strengthened float glass, 1/4 inch thick, minimum.
 - a. Tint: Optigray.
 - b. Low-E Coating: Viracon VNE-63.
 - c. Coating: Viraspan silkscreen.
 7. Inboard Lite: Annealed float glass, 1/4 inch thick.
 - a. Tint: clear.
 8. Other Manufacturers: Provide either the product identified as "Basis of Design" or an equivalent product of another acceptable manufacturer.
 9. Substitution Procedures: See Section 01 6000 - Product Requirements.
 - a. For any product not identified as "Basis of Design", submit information as specified for substitutions.
- B. Type IG-2 - Insulating Glass Units: Vision glazing, with Low-E coating.
 1. Applications: Exterior insulating glass glazing unless otherwise indicated.
 2. Space between lites filled with argon.
 3. Total Thickness: 1 inch.
 4. Thermal Transmittance (U-Value), Winter - Center of Glass: [0.24], maximum.
 5. Basis of Design - PPG Industries, Inc: www.ppgideascape.com.
 6. Outboard Lite: Heat-strengthened float glass, 1/4 inch thick, minimum.
 - a. Low-E Coating: Viracon VNE-63 on #2 surface.
 - b. Tint: Optigray.
 7. Inboard Lite: Annealed float glass, 1/4 inch thick.
 - a. Coating: No coating on inboard lite.
 - b. Tint: Clear.

2.05 GLAZING COMPOUNDS

- A. Butyl Sealant: Single component; ASTM C920, Grade NS, Class 12-1/2, Uses M and A, Shore A hardness of 10 to 20; black color.
- B. Polysulfide Sealant: Two component; chemical curing, non-sagging type; ASTM C920, Type M, Grade NS, Class 25, Uses M, A, and G; with cured Shore A hardness range of 15 to 25; color as selected.
- C. Polyurethane Sealant: Single component, chemical curing, non-staining, non-bleeding; ASTM C920, Type S, Grade NS, Class 25, Uses M, A, and G; with cured Shore A hardness range of 20 to 35; As selected color.
- D. Silicone Sealant: Single component; neutral curing; capable of water immersion without loss of properties; non-bleeding, non-staining; ASTM C920, Type S, Grade NS, Class 25, Uses M, A, and G; with cured Shore A hardness range of 15 to 25; As selected color.

2.06 ACCESSORIES

- A. Setting Blocks: Neoprene, with 80 to 90 Shore A durometer hardness; ASTM C864 Option II. Length of 0.1 inch for each square foot of glazing or minimum 4 inch x width of glazing rabbet space minus 1/16 inch x height to suit glazing method and pane weight and area.

- B. Spacer Shims: Neoprene, 50 to 60 Shore A durometer hardness; ASTM C864 Option II. Minimum 3 inch long by one half the height of the glazing stop by thickness to suit application, self adhesive on one face.
- C. Glazing Tape, Back Bedding Mastic Type: Preformed, butyl-based, 100 percent solids compound with integral resilient spacer rod applicable to application indicated; 5 to 30 cured Shore A durometer hardness; coiled on release paper; black color.
 - 1. Width: As required for application.
 - 2. Thickness: As required for application.
 - 3. Spacer Rod Diameter: As required for application.
 - 4. Manufacturers:
 - a. Pecora Corporation: www.pecora.com.
 - b. Tremco Global Sealants: www.tremcosealants.com.
 - c. Substitutions: Refer to Section 01 6000 - Product Requirements.
- D. Glazing Gaskets: Resilient silicone extruded shape to suit glazing channel retaining slot; ASTM C864 Option II; color as selected.

PART 3 EXECUTION

3.01 VERIFICATION OF CONDITIONS

- A. Verify that openings for glazing are correctly sized and within tolerances, including those for size, squareness, and offsets at corners.
- B. Verify that the minimum required face and edge clearances are being provided.
- C. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and support framing is ready to receive glazing system.
- D. Verify that sealing between joints of glass framing members has been completed effectively.
- E. Proceed with glazing system installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Clean contact surfaces with appropriate solvent and wipe dry within maximum of 24 hours before glazing. Remove coatings that are not tightly bonded to substrates.
- B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.
- C. Prime surfaces scheduled to receive sealant where required for proper sealant adhesion.

3.03 INSTALLATION, GENERAL

- A. Install glazing sealants in accordance with ASTM C1193, GANA (SM), and manufacturer's instructions.

3.04 INSTALLATION - DRY GLAZING METHOD (GASKET GLAZING)

- A. Application - Exterior and/or Interior Glazed: Set glazing infills from either the exterior or the interior of the building.
- B. Place setting blocks at 1/4 points with edge block no more than 6 inch from corners.
- C. Rest glazing on setting blocks and push against fixed stop with sufficient pressure on gasket to attain full contact.
- D. Install removable stops without displacing glazing gasket; exert pressure for full continuous contact.

3.05 INSTALLATION - DRY GLAZING METHOD (TAPE AND GASKET SPLINE GLAZING)

- A. Application - Exterior Glazed: Set glazing infills from the exterior of the building.
- B. Cut glazing tape to length; install on glazing pane. Seal corners by butting tape and sealing junctions with butyl sealant.
- C. Place setting blocks at 1/4 points with edge block no more than 6 inch from corners.

- D. Rest glazing on setting blocks and push against fixed stop with sufficient pressure to attain full contact.
- E. Install removable stops without displacing glazing spline. Exert pressure for full continuous contact.
- F. Carefully trim protruding tape with knife.

3.06 CLEANING

- A. Remove excess glazing materials from finish surfaces immediately after application using solvents or cleaners recommended by manufacturers.
- B. Remove non-permanent labels immediately after glazing installation is complete.
- C. Clean glass and adjacent surfaces after sealants are fully cured.
- D. Clean glass on both exposed surfaces not more than 4 days prior to Date of Substantial Completion in accordance with glass manufacturer's written recommendations.

END OF SECTION

SECTION 09 2116
GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Performance criteria for gypsum board assemblies.
- B. Metal stud wall framing.
- C. Metal channel ceiling framing.
- D. Acoustic insulation.
- E. Gypsum sheathing.
- F. Gypsum wallboard.
- G. Joint treatment and accessories.

1.02 RELATED REQUIREMENTS

- A. Section 05 4000 - Cold-Formed Metal Framing: Structural steel stud framing.
- B. Section 06 1000 - Rough Carpentry: Wood blocking product and execution requirements.
- C. Section 07 2100 - Thermal Insulation: Acoustic insulation.
- D. Section 07 2500 - Weather Barriers: Water-resistive barrier over sheathing.
- E. Section 07 8400 - Firestopping: Top-of-wall assemblies at fire rated walls.
- F. Section 07 9200 - Joint Sealants: Sealing acoustical gaps in construction other than gypsum board or plaster work.
- G. Section 09 3000 - Tiling: Tile backing board.

1.03 REFERENCE STANDARDS

- A. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2012.
- B. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board; 2013.
- C. ASTM C954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs From 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness; 2015.
- D. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs; 2014.
- E. ASTM C1047 - Standard Specification for Accessories For Gypsum Wallboard and Gypsum Veneer Base; 2014a.
- F. ASTM C1177/C1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing; 2013.
- G. ASTM C1280 - Standard Specification for Application of Gypsum Sheathing Board; 2013.
- H. ASTM C1396/C1396M - Standard Specification for Gypsum Board; 2014.
- I. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber; 2012.
- J. GA-216 - Application and Finishing of Gypsum Board; 2013.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on metal framing, gypsum board, accessories, and joint finishing system.

PART 2 PRODUCTS

2.01 BOARD MATERIALS

- A. Exterior Sheathing Board: Sizes to minimize joints in place; ends square cut.
 - 1. Application: Exterior sheathing, unless otherwise indicated.
 - 2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
 - 3. Glass Mat Faced Sheathing: Glass mat faced gypsum substrate as defined in ASTM C1177/C1177M.
 - 4. Core Type: Regular and Type X, as indicated.
 - 5. Type X Thickness: 5/8 inch.
 - 6. Regular Board Thickness: 5/8 inch.
 - 7. Edges: Square.
 - 8. Glass Mat Faced Products:
 - a. American Gypsum Company; M-Glass Exterior Sheathing Type X.
 - b. American Gypsum Company; M-Glass Exterior Sheathing.
 - c. Georgia-Pacific Gypsum; DensGlass Sheathing.
 - d. Georgia-Pacific Gypsum; DensGlass Fireguard Sheathing.
- B. Exterior Soffit Board: Exterior gypsum soffit board as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
 - 1. Application: Ceilings and soffits in protected exterior areas, unless otherwise indicated.
 - 2. Types: Type X and Type C, in locations indicated.
 - 3. Type X Thickness: 5/8 inch.
 - 4. Type C Thickness: 5/8 inch.
 - 5. Edges: Tapered.
 - 6. Products:
 - a. Georgia-Pacific Gypsum; ToughRock Fireguard C Soffit Board.

2.02 GYPSUM WALLBOARD ACCESSORIES

- A. Acoustic Insulation: ASTM C665; preformed glass fiber, friction fit type, unfaced. Thickness: 3 inches.
- B. Acoustic Sealant: Acrylic emulsion latex or water-based elastomeric sealant; do not use solvent-based non-curing butyl sealant.
- C. Water-Resistive Barrier: As specified in Section 07 2500.
- D. Finishing Accessories: ASTM C1047, galvanized steel or rolled zinc, unless noted otherwise.
 - 1. Types: As detailed or required for finished appearance.
 - 2. Special Shapes: In addition to conventional corner bead and control joints, provide U-bead at exposed panel edges.
 - 3. Products:
 - a. Same manufacturer as framing materials.
 - b. Phillips Manufacturing Co: www.phillipsmfg.com.
 - c. Trim-tex, Inc: www.trim-tex.com/#sle.
- E. Screws for Fastening of Gypsum Panel Products to Cold-Formed Steel Studs Less than 0.033 inch in Thickness and Wood Members: ASTM C1002; self-piercing tapping screws, corrosion resistant.
- F. Screws for Fastening of Gypsum Panel Products to Steel Members from 0.033 to 0.112 inch in Thickness: ASTM C954; steel drill screws, corrosion resistant.
- G. Anchorage to Substrate: Tie wire, nails, screws, and other metal supports, of type and size to suit application; to rigidly secure materials in place.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that project conditions are appropriate for work of this section to commence.

3.02 ACOUSTIC ACCESSORIES INSTALLATION

- A. Acoustic Insulation: Place tightly within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.
- B. Acoustic Sealant: Install in accordance with manufacturer's instructions.

3.03 BOARD INSTALLATION

- A. Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.
- B. Exterior Sheathing: Comply with ASTM C1280. Install sheathing horizontally, with edges butted tight and ends occurring over firm bearing.
 - 1. Seal joints, cut edges, and holes with water-resistant sealant.
- C. Exterior Soffits: Install exterior soffit board perpendicular to framing, with staggered end joints over framing members or other solid backing.

3.04 INSTALLATION OF TRIM AND ACCESSORIES

- A. Control Joints: Place control joints consistent with lines of building spaces and as indicated.
- B. Corner Beads: Install at external corners, using longest practical lengths.
- C. Edge Trim: Install at locations where gypsum board abuts dissimilar materials.

3.05 TOLERANCES

- A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction.

END OF SECTION

SECTION 09 2236.23

METAL LATH

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Metal lath for cement and gypsum plaster.

1.02 RELATED REQUIREMENTS

- A. Section 09 2300 - Gypsum Plastering.

1.03 REFERENCE STANDARDS

- A. ASTM C841 - Standard Specification for Installation of Interior Lathing and Furring; 2003 (Reapproved 2013).
- B. ASTM C847 - Standard Specification for Metal Lath; 2014a.

PART 2 PRODUCTS

2.01 MANUFACTURERS

2.02 LATH

- A. Diamond Mesh Metal Lath: ASTM C847, galvanized; self-furring.
- B. Beads, Screeds, Joint Accessories, and Other Trim: Depth governed by plaster thickness, and maximum possible lengths.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that substrates are ready to receive work and conditions are suitable for application.
- C. Do not begin until unacceptable conditions have been corrected.
- D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 INSTALLATION - GENERAL

- A. Install interior lath and furring for gypsum plaster in accordance with ASTM C841.

3.03 WALL FURRING INSTALLATION

- A. Install wall furring by directly attaching to masonry walls.
- B. Install furring channels horizontally; secure with fasteners on alternate channel flanges at maximum 24 inches on center.
- C. Space furring channels maximum 16 inches on center, and not more than 4 inches away from floor and ceiling lines.

3.04 LATH INSTALLATION

- A. Apply lath taut, with long dimension perpendicular to supports.
- B. Lap ends minimum 1 inch. Secure end laps with tie wire where they occur between supports.
- C. Continuously reinforce internal angles with corner mesh, except where the metal lath returns 3 inches from corner to form the angle reinforcement; fasten at perimeter edges only.
- D. Place corner bead at external wall corners; fasten at outer edges of lath only.
- E. Place base screeds at termination of plaster areas; secure rigidly in place.
- F. Place 4 inch wide strips of lath centered over junctions of dissimilar backing materials, and secure rigidly in place.

- G. Place lath vertically above each top corner and each side of door frames to 6 inches above ceiling line.
- H. Place casing beads at terminations of plaster finish. Butt and align ends. Secure rigidly in place.
- I. Place additional strip mesh diagonally at corners of lathed openings. Secure rigidly in place.

END OF SECTION

SECTION 09 2300
GYPSUM PLASTERING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Gypsum plastering.
- B. Gypsum plaster over gypsum lath and metal lath.
- C. Gypsum lath.

1.02 RELATED REQUIREMENTS

- A. Section 09 2236.23 - Metal Lath: Metal lath, furring, and accessories for plaster base.

1.03 REFERENCE STANDARDS

- A. ASTM C28/C28M - Standard Specification for Gypsum Plasters; 2010.
- B. ASTM C841 - Standard Specification for Installation of Interior Lathing and Furring; 2003 (Reapproved 2013).
- C. ASTM C842 - Standard Specification for Application of Interior Gypsum Plaster; 2005 (Reapproved 2010).
- D. ASTM C1396/C1396M - Standard Specification for Gypsum Board; 2014.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Gypsum Plaster:

2.02 PLASTER MATERIALS

- A. Ready-Mixed Gypsum Plaster: ASTM C28/C28M; mill-mixed type, requiring only the addition of water.

2.03 METAL LATH AND FURRING

- A. Metal Lath and Accessories: As specified in Section 09 2236.23. Use metal lath as plaster base at Toilet Rooms.

2.04 LATH AND ACCESSORIES

- A. Gypsum Lath: ASTM C1396/C1396M, standard type.

2.05 PLASTER MIXES

- A. Over Metal Lath: Three-coat application, ready-mixed plaster, mixed and proportioned in accordance with ASTM C842 and manufacturer's instructions.
- B. Ready-Mixed Plaster Materials: Mix in accordance with manufacturer's instructions.

PART 3 EXECUTION

3.01 INSTALLATION - GYPSUM LATH AND ACCESSORIES

- A. Install gypsum lath in accordance with ASTM C841.
- B. Install gypsum lath perpendicular to framing members, with lath face exposed. Stagger end joint of alternate courses. Butt joints tight. Maximum gap allowed: 1/8 inch.
- C. Place corner reinforcement diagonally over gypsum lath and across corner immediately above and below openings. Secure to gypsum lath only.
- D. Continuously reinforce internal angles with corner mesh, return 3 inches from corner to form the angle reinforcement; fasten at perimeter edges only.
- E. Place corner bead at external wall corners; fasten at outer edges of lath only.
- F. Place strip mesh diagonally at corners of lathed openings. Secure rigidly in place.

- G. Place 4 inch wide strips of strip mesh centered over junctions of dissimilar backing materials. Secure rigidly in place.
- H. Place casing beads at terminations of plaster finish. Butt and align ends. Secure rigidly in place.

3.02 PLASTERING

- A. Apply gypsum plaster in accordance with ASTM C842 and manufacturer's instructions.
- B. Thickness of Plaster including Finish Coat:
 - 1. Over metal lath: 5/8 inch.
 - 2. Over gypsum lath: 1/2 inch.

END OF SECTION

SECTION 09 2400
PORTLAND CEMENT PLASTERING

PART 1 GENERAL

1.01 SECTION INCLUDES

1.02 RELATED REQUIREMENTS

- A. Section 05 4000 - Cold-Formed Metal Framing: Structural metal framing for plaster.
- B. Section 09 2236.23 - Metal Lath: Metal furring and lathing for plaster.
- C. Section 09 9113 - Exterior Painting.

1.03 REFERENCE STANDARDS

- A. ASTM C150/C150M - Standard Specification for Portland Cement; 2015.
- B. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes; 2006 (Reapproved 2011).
- C. ASTM C926 - Standard Specification for Application of Portland Cement-Based Plaster; 2015b.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittals procedures.
- B. Product Data: Provide data on plaster materials, characteristics and limitations of products specified.

1.05 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing the work of this section with minimum three years documented experience.

1.06 FIELD CONDITIONS

- A. Do not apply plaster when substrate or ambient air temperature is under 50 degrees F or over 80 degrees F.
- B. Maintain minimum ambient temperature of 50 degrees F during installation of plaster and until cured.

PART 2 PRODUCTS

2.01 PORTLAND CEMENT PLASTER ASSEMBLIES

- A. Exterior Stucco: Portland cement plaster system, made of finish, brown, and scratch coat and reinforcing mesh.
 - 1. Provide continuous exterior insulation as part of the system, by the same manufacturer.
 - 2. Provide weather resistive barrier and air barrier as part of the system, by the same manufacturer.

2.02 PLASTER MATERIALS

- A. Portland Cement, Aggregates, and Other Materials: In accordance with ASTM C926.
- B. Premixed One-Coat Stucco: Mixture of Type I Portland cement, complying with ASTM C150/C150M, hydrated lime complying with ASTM C207, fibers and other approved ingredients, install in accordance with ASTM C926.
- C. Premixed Base Coat: Mixture of cement, aggregate, and proprietary admixtures for scratch and brown coats, installed in accordance with ASTM C926.
- D. Premixed Textured Coating: Polymer modified acrylic coating, integrally colored, trowel applied to substrates prepared in accordance with manufacturer's recommendations.
 - 1. Color: As selected by Architect from manufacturer's standard colors.

- E. Water: Clean, fresh, potable and free of mineral or organic matter that could adversely affect plaster.

2.03 METAL LATH

- A. Metal Lath and Accessories: As specified in Section 09 2236.23.
- B. Beads, Screeds, and Joint Accessories: As specified in Section 09 2236.23.

2.04 PLASTER MIXES

- A. Mix only as much plaster as can be used prior to initial set.
- B. Mix materials dry, to uniform color and consistency, before adding water.
- C. Protect mixtures from freezing, frost, contamination, and excessive evaporation.
- D. Do not retemper mixes after initial set has occurred.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify the suitability of existing conditions before starting work.
- B. Metal Lath and Accessories: Verify lath is flat, secured to substrate, and joint and surface perimeter accessories are in place.

3.02 PLASTERING

- A. Apply premixed plaster in accordance with manufacturer's instructions.
- B. Apply plaster in accordance with ASTM C926.
- C. Three-Coat Application Over Metal Lath:
 - 1. Apply first coat to a nominal thickness of 3/8 inch.
 - 2. Apply second coat to a nominal thickness of 3/8 inch.
 - 3. Apply finish coat to a nominal thickness of 1/8 inch.
- D. Moist cure base coats.
- E. Apply second coat immediately following initial set of first coat.
- F. After curing, dampen previous coat prior to applying finish coat.
- G. Finish Texture: Float to a consistent and smooth finish.
- H. Avoid excessive working of surface. Delay troweling as long as possible to avoid drawing excess fines to surface.
- I. Moist cure finish coat for minimum period of 48 hours.

3.03 TOLERANCES

3.04 SCHEDULES

- A. Miscellaneous areas in Toilet Room wall surfaces as required and noted on drawings.

END OF SECTION

SECTION 09 3000
TILING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Tile for floor applications.
- B. Tile for wall applications.
- C. Coated glass mat backer board as tile substrate.
- D. Ceramic accessories.
- E. Ceramic trim.
- F. Non-ceramic trim.

1.02 RELATED REQUIREMENTS

- A. Section 07 9200 - Joint Sealants: Sealing joints between tile work and adjacent construction and fixtures.

1.03 REFERENCE STANDARDS

- A. ANSI A108.1a - American National Standard Specifications for Installation of Ceramic Tile in the Wet-Set Method, with Portland Cement Mortar; 2014.
- B. ANSI A108.1b - American National Standard Specifications for Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex-Portland Cement Mortar; 1999 (Reaffirmed 2010).
- C. ANSI A108.1c - Specifications for Contractors Option: Installation of Ceramic Tile in the Wet-Set Method with Portland Cement Mortar or Installation of Ceramic Tile on a Cured Portland Cement Mortar Bed with Dry-Set or Latex-Portland Cement; 1999 (Reaffirmed 2010).
- D. ANSI A108.4 - American National Standard Specifications for Installation of Ceramic Tile with Organic Adhesives or Water Cleanable Tile-Setting Epoxy Adhesive; 2009 (Revised).
- E. ANSI A108.5 - American National Standard Specifications for Installation of Ceramic Tile with Dry-Set Portland Cement Mortar or Latex-Portland Cement Mortar; 1999 (Reaffirmed 2010).
- F. ANSI A108.6 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant, Water Cleanable Tile-Setting and -Grouting Epoxy; 1999 (Reaffirmed 2010).
- G. ANSI A108.8 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant Furan Resin Mortar and Grout; 1999 (Reaffirmed 2010).
- H. ANSI A108.9 - American National Standard Specifications for Installation of Ceramic Tile with Modified Epoxy Emulsion Mortar/Grout; 1999 (Reaffirmed 2010).
- I. ANSI A108.10 - American National Standard Specifications for Installation of Grout in Tilework; 1999 (Reaffirmed 2010).
- J. ANSI A108.11-SystemDeleted - American National Standard for Interior Installation of Cementitious Backer Units; 2010 (Revised).
- K. ANSI A108.12 - American National Standard for Installation of Ceramic Tile with EGP (Exterior glue plywood) Latex-Portland Cement Mortar; 1999 (Reaffirmed 2010).
- L. ANSI A108.13 - American National Standard for Installation of Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone; 2005 (Reaffirmed 2010).
- M. ANSI A118.4 - American National Standard Specifications for Modified Dry-Set Cement Mortar; 2012 (Revised).

- N. ANSI A118.7 - American National Standard Specifications for High Performance Cement Grouts for Tile Installation; 2010 (Revised).
- O. ANSI A137.1 - American National Standard Specifications for Ceramic Tile; 2013.1.
- P. ASTM C373 - Standard Test Method for Water Absorption, Bulk Density, Apparent Porosity, and Apparent Specific Gravity of Fired Whiteware Products, Ceramic Tiles, and Glass Tiles; 2014a.
- Q. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring; 2011.
- R. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride; 2011.
- S. TCNA (HB) - Handbook for Ceramic, Glass, and Stone Tile Installation; 2015.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturers' data sheets on tile, mortar, grout, and accessories. Include instructions for using grouts and adhesives.
- C. Samples: Mount tile and apply grout on two plywood panels, minimum 18 by 18 inches in size illustrating pattern, color variations, and grout joint size variations.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Protect adhesives from freezing or overheating in accordance with manufacturer's instructions.

1.06 FIELD CONDITIONS

- A. Do not install solvent-based products in an unventilated environment.
- B. Maintain ambient and substrate temperature above 50 degrees F and below 100 degrees F during installation and curing of setting materials.

PART 2 PRODUCTS

2.01 TILE

- A. Manufacturers: All products by the same manufacturer.
 - 1. Dal-Tile Corporation: www.daltile.com/#sle.
- B. Glazed Wall Tile: ANSI A137.1, standard grade.
 - 1. Moisture Absorption: 7.0 to 20.0 percent as tested in accordance with ASTM C373.
 - 2. Size: 3 by 6 inch, nominal.
 - 3. Edges: Cushioned.
 - 4. Surface Finish: Matte glaze.
 - 5. Color(s): To be selected by Architect from manufacturer's standard range.
 - 6. Products:
 - a. Daltile Glazed Wall: Semi-Gloss.
- C. Porcelain Tile, Type _____: ANSI A137.1, standard grade.
 - 1. Size: __12__by__24__ inch, nominal.
 - 2. Products:
 - a. Dal-Tile Corporation; _____: www.daltile.com/#sle.
 - b. Linden Pointe.

2.02 TRIM AND ACCESSORIES

- A. Non-Ceramic Trim: Satin natural anodized extruded aluminum, style and dimensions to suit application, for setting using tile mortar or adhesive.
 - 1. Applications:
 - a. Open edges of wall tile.
 - b. Open edges of floor tile.
 - c. Wall corners, outside and inside.

- d. Transition between floor finishes of different heights.
- e. Thresholds at door openings.
- 2. Manufacturers:
 - a. Schluter-Systems: www.schluter.com/#sle.
 - b. Substitutions: See Section 01 6000 - Product Requirements.

2.03 SETTING MATERIALS

- A. Latex-Portland Cement Mortar Bond Coat: ANSI A118.4 or ANSI A118.15.
 - 1. Applications: Use this type of bond coat where indicated and where no other type of bond coat is indicated.
 - 2. Products:
 - a. ARDEX Engineered Cements; ARDEX X 77 MICROTEC: www.ardexamericas.com.
 - b. LATICRETE International, Inc; LATICRETE 254 Platinum: www.laticrete.com.
 - c. Merkrete, by Parex USA, Inc; Merkrete 735 Premium Flex: www.merkrete.com/sle.
- B. Mortar Bed Materials: Pre-packaged mix of Portland cement, sand, latex additive, and water.
 - 1. Products:
 - a. LATICRETE International, Inc; LATICRETE 3701 Fortified Mortar Bed: www.laticrete.com/#sle.
 - b. Merkrete, by Parex USA, Inc; Merkrete Underlay C: www.merkrete.com/#sle.

2.04 GROUTS

- A. High Performance Polymer Modified Grout: ANSI A118.7 polymer modified cement grout.
 - 1. Applications: Use this type of grout where indicated and where no other type of grout is indicated.
 - 2. Use sanded grout for joints 1/8 inch wide and larger; use unsanded grout for joints less than 1/8 inch wide.
 - 3. Color(s): As selected by Architect from manufacturer's full line.
 - 4. Products:
 - a. ARDEX Engineered Cements; ARDEX FG-C MICROTEC: www.ardexamericas.com.
 - b. LATICRETE International, Inc; LATICRETE PERMACOLOR Grout: www.laticrete.com/#sle.
 - c. Merkrete, by Parex USA, Inc; Merkrete Pro Grout: www.merkrete.com/#sle.

2.05 MAINTENANCE MATERIALS

- A. Tile Sealant: Gunnable, silicone, siliconized acrylic, or urethane sealant; moisture and mildew resistant type.
 - 1. Applications: Between tile and plumbing fixtures.
 - 2. Color(s): As selected by Architect from manufacturer's full line.
 - 3. Products:
 - a. ARDEX Engineered Cements; ARDEX SX: www.ardexamericas.com/#sle.
 - b. LATICRETE International, Inc; LATICRETE LATASIL: www.laticrete.com/#sle.
 - c. Merkrete, by Parex USA, Inc; Merkrete Colored Caulking: www.merkrete.com/#sle.
- B. Grout Sealer: Liquid-applied, moisture and stain protection for existing or new Portland cement grout.
 - 1. Composition: Water-based colorless silicone.

2.06 ACCESSORY MATERIALS

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that sub-floor surfaces are smooth and flat within the tolerances specified for that type of work and are ready to receive tile.

- B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive tile.
- C. Verify that sub-floor surfaces are dust-free and free of substances that could impair bonding of setting materials to sub-floor surfaces.
- D. Verify that concrete sub-floor surfaces are ready for tile installation by testing for moisture emission rate and alkalinity; obtain instructions if test results are not within the following limits:
 - 1. Moisture Emission Rate: Not greater than 3 lb per 1000 sq ft per 24 hours, test in accordance with ASTM F1869.
 - 2. Alkalinity (pH): Verify pH range of 5 to 9, test in accordance with ASTM F710.
- E. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

- A. Protect surrounding work from damage.
- B. Vacuum clean surfaces and damp clean.
- C. Seal substrate surface cracks with filler. Level existing substrate surfaces to acceptable flatness tolerances.

3.03 INSTALLATION - GENERAL

- A. Install tile and stair treads and grout in accordance with applicable requirements of ANSI A108.1A thru A108.13, manufacturer's instructions, and TCNA (HB) recommendations.
- B. Lay tile to pattern indicated. Do not interrupt tile pattern through openings.
- C. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners and bases neatly. Align floor joints.
- D. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make grout joints without voids, cracks, excess mortar or excess grout, or too little grout.
- E. Form internal angles square and external angles bullnosed.
- F. Install non-ceramic trim in accordance with manufacturer's instructions.
- G. Sound tile after setting. Replace hollow sounding units.
- H. Keep control and expansion joints free of mortar, grout, and adhesive.
- I. Prior to grouting, allow installation to completely cure; minimum of 48 hours.
- J. Grout tile joints unless otherwise indicated. Use standard grout unless otherwise indicated.
- K. At changes in plane and tile-to-tile control joints, use tile sealant instead of grout, with either bond breaker tape or backer rod as appropriate to prevent three-sided bonding.

3.04 INSTALLATION - FLOORS - THIN-SET METHODS

- A. Over interior concrete substrates, install in accordance with TCNA (HB) Method F113, dry-set or latex-Portland cement bond coat, with standard grout, unless otherwise indicated.
 - 1. Use uncoupling membrane under all tile unless other underlayment is indicated.

3.05 CLEANING

- A. Clean tile and grout surfaces.

3.06 PROTECTION

- A. Do not permit traffic over finished floor surface for 4 days after installation.

END OF SECTION

SECTION 09 5100
ACOUSTICAL CEILINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Suspended metal grid ceiling system.
- B. Acoustical units.

1.02 RELATED REQUIREMENTS

- A. Section 26 5100 - Interior Lighting: Light fixtures in ceiling system.
- B. Section 28 4600 - Fire Detection and Alarm: Fire alarm components in ceiling system.

1.03 REFERENCE STANDARDS

- A. ASTM C635/C635M - Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings; 2013a.
- B. ASTM E1264 - Standard Classification for Acoustical Ceiling Products; 2014.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Sequence work to ensure acoustical ceilings are not installed until building is enclosed, sufficient heat is provided, dust generating activities have terminated, and overhead work is completed, tested, and approved.
- B. Do not install acoustical units until after interior wet work is dry.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on suspension system components and acoustical units.
- C. Samples: Submit two samples 6 by 6 inch in size illustrating material and finish of acoustical units.
- D. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 6000 - Product Requirements, for additional provisions.
 - 2. Extra Acoustical Units: Quantity equal to 1 percent of total installed.

1.06 FIELD CONDITIONS

- A. Maintain uniform temperature of minimum 60 degrees F, and maximum humidity of 40 percent prior to, during, and after acoustical unit installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Acoustic Tiles/Panels:
 - 1. Armstrong World Industries, Inc; Ultima: www.armstrong.com.
 - 2. Substitutions: See Section 01 6000 - Product Requirements.
- B. Suspension Systems:
 - 1. Same as for acoustical units.

2.02 ACOUSTICAL UNITS

- A. Acoustical Units - General: ASTM E1264, Class A.
- B. Acoustical Tile Type A: Painted mineral fiber, ASTM E1264 Type III, with the following characteristics:
 - 1. Size: 24 by 24 inches.
 - 2. Thickness: 5/8 inches.
 - 3. Composition: Water felted.
 - 4. Light Reflectance: 0.89 percent, determined in accordance with ASTM E1264.

5. NRC Range: 0.50 to 0.75, determined in accordance with ASTM E1264.
 6. Ceiling Attenuation Class (CAC): 35, determined in accordance with ASTM E1264.
 7. Edge: Beveled tegular.
 8. Surface Color: White.
 9. Suspension System: Exposed 9/16 inch grid.
 10. Products:
 - a. Armstrong Dune #1775.
- C. Glass Fiber Acoustical Panels Type B: Vinyl faced glass fiber, ASTM E1264 Type XII, with the following characteristics:
1. Size: 24 by 24 inches.
 2. Thickness: 1 inches.
 3. Light Reflectance: 0.90 percent, determined in accordance with ASTM E1264.
 4. NRC Range: 0.90 to 0.95, determined in accordance with ASTM E1264.
 5. Articulation Class (AC): 190, determined in accordance with ASTM E1264.
 6. Ceiling Attenuation Class (CAC): N/A, determined in accordance with ASTM E1264.
 7. Edge: Square.
 8. Surface Color: White.
 9. Surface Pattern: Non-directional.
 10. Suspension System: Exposed 15/16 inch grid.
 11. Products:
 - a. Armstrong Pebble High NRC Perforated #2988.
 - b. Substitutions: See Section 01 6000 - Product Requirements.

2.03 SUSPENSION SYSTEM(S)

- A. Metal Suspension Systems - General: Complying with ASTM C635/C635M; die cut and interlocking components, with perimeter moldings, hold down clips, stabilizer bars, clips, and splices as required.
- B. Exposed Aluminum Suspension System: Extruded aluminum; intermediate-duty.
 1. Profile: Tee; 9/16 inch wide face. 15/16 inch wide face where noted.
 2. Finish: Painted white.
 3. Products:
 - a. Armstrong 9/16 inch Suprafine XL..
 - b. Armstrong 15/16 for Square Lay-in where noted on drawings.

2.04 ACCESSORIES

- A. Support Channels and Hangers: Galvanized steel; size and type to suit application, seismic requirements, and ceiling system flatness requirement specified.
- B. Hanger Wire: 12-gage 0.08 inch galvanized steel wire.
- C. Perimeter Moldings: Same metal and finish as grid.
 1. At Exposed Grid: Provide L-shaped molding for mounting at same elevation as face of grid with shadow molding profile.
- D. Touch-up Paint: Type and color to match acoustical and grid units.

PART 3 EXECUTION

3.01 INSTALLATION - SUSPENSION SYSTEM

- A. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.
- B. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.
 1. Use longest practical lengths.
- C. Install after major above-ceiling work is complete. Coordinate the location of hangers with other work.

- D. Suspension System, Non-Seismic: Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.
- E. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.
- F. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.
- G. Support fixture loads using supplementary hangers located within 6 inches of each corner, or support components independently.
- H. Do not eccentrically load system or induce rotation of runners.
- I. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.
 - 1. Use longest practical lengths.
 - 2. Overlap and rivet corners.

3.02 INSTALLATION - ACOUSTICAL UNITS

- A. Install acoustical units in accordance with manufacturer's instructions.
- B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.
- C. Fit border trim neatly against abutting surfaces.
- D. Install units after above-ceiling work is complete.
- E. Install acoustical units level, in uniform plane, and free from twist, warp, and dents.
- F. Cutting Acoustical Units:
 - 1. Make field cut edges of same profile as factory edges.
 - 2. Double cut and field paint exposed reveal edges.

END OF SECTION

**SECTION 09 6500
RESILIENT FLOORING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Resilient tile flooring.
- B. Installation accessories.

1.02 RELATED REQUIREMENTS

- A. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions.
- B. Section 03 3000 - Cast-in-Place Concrete: Restrictions on curing compounds for concrete slabs and floors to receive adhesive-applied resilient flooring.

1.03 REFERENCE STANDARDS

- A. ASTM F1066 - Standard Specification for Vinyl Composition Floor Tile; 2004 (Reapproved 2014).

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.
- C. Selection Samples: Submit manufacturer's complete set of color samples for Architect's initial selection.
- D. Verification Samples: Submit two samples, 12 by 12 inch in size illustrating color and pattern for each resilient flooring product specified.
- E. Concrete Testing Standard: Submit a copy of ASTM F710.
- F. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning, stripping, and re-waxing.
- G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 6000 - Product Requirements, for additional provisions.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Upon receipt, immediately remove any shrink-wrap and check materials for damage and the correct style, color, quantity and run numbers.
- B. Store all materials off of the floor in an acclimatized, weather-tight space.
- C. Maintain temperature in storage area between 55 degrees F and 90 degrees F.
- D. Protect roll materials from damage by storing on end.
- E. Do not double stack pallets.

1.06 FIELD CONDITIONS

- A. Store materials for not less than 48 hours prior to installation in area of installation at a temperature of 70 degrees F to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F.

PART 2 PRODUCTS

2.01 SHEET FLOORING

- A. Feature Strips: Of same material as sheet flooring, 2 inch wide.

2.02 TILE FLOORING

- A. Vinyl Composition Tile - Type ____: Homogeneous, with color extending throughout thickness.

1. Manufacturers:
 - a. Armstrong World Industries, Inc; Standard Excelon: www.armstrong.com.
 - b. Johnsonite, a Tarkett Company; Azrock VCT: www.johnsonite.com.
 - c. Substitutions: See Section 01 6000 - Product Requirements.
2. Minimum Requirements: Comply with ASTM F1066, of Class corresponding to type specified.
3. Size: 12 by 12 inch.
4. VOC Content Limits: As specified in Section 01 6116.
5. Thickness: 0.125 inch.
6. Pattern: As selected.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of flooring to substrate.
- B. Cementitious Subfloor Surfaces: Verify that substrates are ready for resilient flooring installation by testing for moisture and alkalinity (pH).
 1. Obtain instructions if test results are not within limits recommended by resilient flooring manufacturer and adhesive materials manufacturer.
- C. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

3.03 INSTALLATION - GENERAL

- A. Starting installation constitutes acceptance of subfloor conditions.
- B. Install in accordance with manufacturer's written instructions.
- C. Spread only enough adhesive to permit installation of materials before initial set.
- D. Fit joints and butt seams tightly.
- E. Set flooring in place, press with heavy roller to attain full adhesion.
- F. Where type of floor finish, pattern, or color are different on opposite sides of door, terminate flooring under centerline of door.
- G. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated.
 1. Resilient Strips: Attach to substrate using adhesive.
- H. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.

3.04 INSTALLATION - SHEET FLOORING

- A. Lay flooring with joints and seams parallel to longer room dimensions, to produce minimum number of seams. Lay out seams to avoid widths less than 1/3 of roll width; match patterns at seams.
- B. Coved Base: Install as detailed on drawings, using coved base filler as backing at floor to wall junction. Extend sheet flooring vertically to height indicated, and cover top edge with metal cap strip.

3.05 INSTALLATION - TILE FLOORING

- A. Mix tile from container to ensure shade variations are consistent when tile is placed, unless otherwise indicated in manufacturer's installation instructions.
- B. Install tile with three colors in each space in pattern to be determined.

3.06 CLEANING

- A. Remove excess adhesive from floor, base, and wall surfaces without damage.

- B. Clean in accordance with manufacturer's written instructions.

3.07 PROTECTION

- A. Prohibit traffic on resilient flooring for 48 hours after installation.

END OF SECTION

SECTION 09 6813
TILE CARPETING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Carpet tile, loose laid with edges and control grid adhered.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Tile Carpeting:
 - 1. Mohawk Group; ____: www.mohawkgroup.com/#sle.

2.02 MATERIALS

- A. Tile Carpeting, Type ____: Tufted, manufactured in one color dye lot.
 - 1. Product: SIDE STRIPE 566 CENTRAL manufactured by MOHAWK GROUP.
 - 2. Tile Size: ____24" _by_24"__ inch, nominal.

2.03 ACCESSORIES

- A. Threshold & Transitions: Embossed aluminum, ____ color.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that subfloor surfaces are smooth and flat within tolerances specified for that type of work and are ready to receive carpet tile.
- B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive carpet tile.
- C. Verify that subfloor surfaces are dust-free and free of substances that could impair bonding of adhesive materials to subfloor surfaces.

3.02 PREPARATION

- A. Prepare floor substrates as recommended by flooring and adhesive manufacturers.
- B. Remove subfloor ridges and bumps. Fill minor or local low spots, cracks, joints, holes, and other defects with subfloor filler.
- C. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Prohibit traffic until filler is cured.

3.03 INSTALLATION

- A. Starting installation constitutes acceptance of subfloor conditions.
- B. Install carpet tile in accordance with manufacturer's instructions.
- C. Blend carpet from different cartons to ensure minimal variation in color match.
- D. Cut carpet tile clean. Fit carpet tight to intersection with vertical surfaces without gaps.
- E. Lay carpet tile in square pattern, with pile direction parallel to next unit, set parallel to building lines.
- F. Trim carpet tile neatly at walls and around interruptions.
- G. Complete installation of edge strips, concealing exposed edges.

END OF SECTION

SECTION 10 1400

SIGNAGE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Room and door signs.
- B. Interior directional and informational signs.

1.02 RELATED REQUIREMENTS

1.03 REFERENCE STANDARDS

- A. 36 CFR 1191 - Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines; current edition.
- B. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design; 2010.
- C. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2009.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Package signs as required to prevent damage before installation.
- B. Package room and door signs in sequential order of installation, labeled by floor or building.
- C. Store tape adhesive at normal room temperature.

1.06 FIELD CONDITIONS

- A. Do not install tape adhesive when ambient temperature is lower than recommended by manufacturer.
- B. Maintain this minimum temperature during and after installation of signs.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Flat Signs:
 - 1. Best Sign Systems, Inc: www.bestsigns.com.
 - 2. Cosco Industries (ADA signs); ADA Series 1: www.coscoarchitecturalsigns.com/#sle.
 - 3. Inpro; ____: www.inprocorp.com.
 - 4. Mohawk Sign Systems, Inc: www.mohawksign.com.
 - 5. Substitutions: See Section 01 6000 - Product Requirements.
- B. Dimensional Letter Signs:
 - 1. Cosco Industries; Cast Aluminum: www.coscoarchitecturalsigns.com/#sle.
 - 2. Inpro; ____: www.inprocorp.com.
- C. Other Signs - _____:
- D. Photoluminescent Marking and Signage:
 - 1. Ecoglo, Inc: www.us.ecoglo.com.

2.02 SIGNAGE APPLICATIONS

- A. Accessibility Compliance: Signs are required to comply with ADA Standards and ICC A117.1, unless otherwise indicated; in the event of conflicting requirements, comply with the most comprehensive and specific requirements.
- B. Room and Door Signs: Provide a sign for every doorway, whether it has a door or not, not including corridors, lobbies, and similar open areas.

1. Sign Type: Flat signs with engraved panel media as specified.
 2. Provide "tactile" signage, with letters raised minimum 1/32 inch and Grade II braille.
 3. Character Height: 1 inch.
 4. Sign Height: 2 inches, unless otherwise indicated.
 5. Office Doors: Identify with room numbers to be determined later, not the numbers indicated on drawings; in addition, provide "window" section for replaceable occupant name.
 6. Conference and Meeting Rooms: Identify with room numbers to be determined later, not the numbers indicated on drawings; in addition, provide "window" section with sliding "In Use/Vacant" indicator.
 7. Service Rooms: Identify with room names and numbers to be determined later, not those indicated on drawings.
 8. Rest Rooms: Identify with pictograms, the names "MEN" and "WOMEN", room numbers to be determined later, and braille.
- C. Interior Directional and Informational Signs:
1. Sign Type: Same as room and door signs.
 2. Allow for 4 signs 4 inches high by 16 inches long.
 3. Where suspended, ceiling mounted, or projecting from wall signs are indicated, provide two-sided signs with same information on both sides.

2.03 SIGN TYPES

- A. Flat Signs: Signage media without frame.
1. Edges: Square.
 2. Corners: Radiused.
 3. Wall Mounting of One-Sided Signs: Tape adhesive.
 4. Wall and Ceiling Mounting of Two-Sided Signs: Aluminum wall bracket, powder coated, color selected from manufacturer's standard colors, attached with screws in predrilled mounting holes, set in clear silicone sealant.
 5. Suspended Mounting: Stainless steel suspension cables, cable clamps, and ceiling fastener suitable for attachment to ceiling construction indicated.
- B. Color and Font: Unless otherwise indicated:
1. Character Font: Helvetica, Arial, or other sans serif font.
 2. Character Case: Upper case only.
 3. Background Color: Clear.
 4. Character Color: Contrasting color.

2.04 TACTILE SIGNAGE MEDIA

- A. Engraved Panels: Laminated colored plastic; engraved through face to expose core as background color:
1. Total Thickness: 1/16 inch.

2.05 ACCESSORIES

- A. Tape Adhesive: Double sided tape, permanent adhesive.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install neatly, with horizontal edges level.
- C. Locate signs where indicated:
 1. Room and Door Signs: Locate on wall at latch side of door with centerline of sign at 60 inches above finished floor.
 2. If no location is indicated obtain Owner's instructions.
- D. Protect from damage until Substantial Completion; repair or replace damaged items.

END OF SECTION

SECTION 10 2113.19
PLASTIC TOILET COMPARTMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Solid plastic toilet compartments.

1.02 RELATED REQUIREMENTS

- A. Section 06 1000 - Rough Carpentry: Blocking and supports.
- B. Section 10 2800 - TOILET, BATH, AND LAUNDRY ACCESSORIES.

1.03 REFERENCE STANDARDS

- A. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2015.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination: Coordinate the work with placement of support framing and anchors in walls and ceilings.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate partition plan, elevation views, dimensions, details of wall supports, door swings.
- C. Product Data: Provide data on panel construction, hardware, and accessories.
- D. Samples: Submit two samples of partition panels, 2 x 2 inch in size illustrating panel finish, color, and sheen.
- E. Manufacturer's Installation Instructions: Indicate special procedures.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Solid Plastic Toilet Compartments:
 - 1. Scranton Products (Santana/Comtec/Capital); HINY HIDERS:
www.scrantonproducts.com.

2.02 PLASTIC TOILET COMPARTMENTS

- A. Toilet Compartments: Factory fabricated doors, pilasters, and divider panels made of solid molded high density polyethylene (HDPE), floor-mounted headrail-braced.
 - 1. Color: Charcoal Grey.
- B. Doors:
 - 1. Thickness: 1 inch.
 - 2. Width: 24 inch.
 - 3. Width for Handicapped Use: 36 inch.
 - 4. Height: 72 inch.
- C. Panels:
 - 1. Thickness: 1 inch.
 - 2. Height: 72 inch.
 - 3. Depth: As indicated on drawings.
- D. Pilasters:
 - 1. Thickness: 1 inch.
 - 2. Width: As required to fit space; minimum 3 inch.

2.03 ACCESSORIES

- A. Pilaster Shoes: Formed ASTM A666, Type 304 stainless steel with No. 4 finish, 6 in high, concealing floor fastenings.
 - 1. Provide adjustment for floor variations with screw jack through steel saddles integral with pilaster.
- B. Head Rails: Extruded aluminum, anti-grip profile.
- C. Pilaster Brackets: Satin stainless steel.
- D. Wall Brackets: Continuous type, satin stainless steel.
- E. Attachments, Screws, and Bolts: Stainless steel, tamper proof type.
- F. Hardware: Satin stainless steel:
 - 1. Continuous Stainless Steel Spring Loaded Hinge.
 - 2. Door Latch: Slide type with exterior emergency access feature.
 - 3. Door strike and keeper with rubber bumper; mounted on pilaster in alignment with door latch.
 - 4. Coat hook with rubber bumper; one per compartment, mounted on door.
 - 5. Provide door pull for outswinging doors.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify correct spacing of and between plumbing fixtures.
- C. Verify correct location of built-in framing, anchorage, and bracing.

3.02 INSTALLATION

- A. Install partitions secure, rigid, plumb, and level in accordance with manufacturer's instructions.
- B. Maintain 3/8 inch to 1/2 inch space between wall and panels and between wall and end pilasters.
- C. Attach panel brackets securely to walls using anchor devices.
- D. Attach panels and pilasters to brackets. Locate head rail joints at pilaster center lines.

3.03 TOLERANCES

- A. Maximum Variation From True Position: 1/4 inch.
- B. Maximum Variation From Plumb: 1/8 inch.

3.04 ADJUSTING

- A. Adjust and align hardware to uniform clearance at vertical edge of doors, not exceeding 3/16 inch.
- B. Adjust hinges to position doors in partial opening position when unlatched. Return outswinging doors to closed position.
- C. Adjust adjacent components for consistency of line or plane.

END OF SECTION

SECTION 10 2800
TOILET, BATH, AND LAUNDRY ACCESSORIES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Commercial toilet accessories.
- B. Accessories for toilet rooms, utility rooms, and janitor room.
- C. Electric hand/hair dryers.
- D. Utility room accessories.
- E. Grab bars.

1.02 RELATED REQUIREMENTS

- A. Section 10 2113.19 - Plastic Toilet Compartments.

1.03 REFERENCE STANDARDS

- A. ASTM A269/A269M - Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service; 2015.
- B. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2015.
- C. ASTM C1036 - Standard Specification for Flat Glass; 2011.
- D. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass; 2012.
- E. ASTM F2285 - Standard Consumer Safety Performance Specification for Diaper Changing Tables for Commercial Use; 2004 (Reapproved 2010).

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate the work with the placement of internal wall reinforcement, concealed ceiling supports, and reinforcement of toilet partitions to receive anchor attachments.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Submit data on accessories describing size, finish, details of function, and attachment methods.
- C. Manufacturer's Installation Instructions: Indicate special procedures and conditions requiring special attention.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Commercial Toilet, Shower, and Bath Accessories:
 - 1. ASI - American Specialties, Inc; _____: www.americanspecialties.com.
 - 2. Bradley Corporation: www.bradleycorp.com.
 - 3. Bobrick. www.bobrick.com.
- B. Electric Hand/Hair Dryers:
 - 1. American Dryer, Inc; _____: www.americandryer.com/#sle.
 - 2. Excel Dryer; Xlerator: www.exceldryer.com.
 - 3. Dyson Airblade V Series: www.dyson.com.
 - 4. Toto Hand Dryers: www.toto.com
 - 5. Bobrick: www.bobrick.com.

2.02 MATERIALS

- A. Accessories - General: Shop assembled, free of dents and scratches and packaged complete with anchors and fittings, steel anchor plates, adapters, and anchor components for installation.
 - 1. Grind welded joints smooth.
 - 2. Fabricate units made of metal sheet of seamless sheets, with flat surfaces.
- B. Stainless Steel Sheet: ASTM A666, Type 304.
- C. Stainless Steel Tubing: ASTM A269/A269M, Grade TP304 or TP316.
- D. Mirror Glass: Tempered safety glass, ASTM C1048; and ASTM C1036 Type I, Class 1, Quality Q2, with silvering as required.
- E. Adhesive: Two component epoxy type, waterproof.
- F. Fasteners, Screws, and Bolts: Hot dip galvanized; tamper-proof; security type.
- G. Expansion Shields: Fiber, lead, or rubber as recommended by accessory manufacturer for component and substrate.

2.03 FINISHES

- A. Stainless Steel: Satin finish, unless otherwise noted.

2.04 COMMERCIAL TOILET ACCESSORIES

- A. Toilet Paper Dispenser: Roll-in-reserve type, designed to allow automatic activation of reserve roll when needed, or manual activation by pressing release bar, semi-recessed, stainless steel unit with pivot hinge, tumbler lock.
 - 1. Product: Classic Series manufactured by Bobrick.
 - 2. Provide Recessed, Surface Mounted, or Toilet Partition Mounted as indicated.
- B. Electric Dryers: Traditional fan-in-case type, with downward nozzle.
 - 1. Operation: Automatic, sensor-operated on and off.
 - 2. Style: Contemporary styling, fixed nozzle.
 - 3. Mounting: Semi-recessed.
 - 4. Cover: Stainless steel with brushed finish.
 - a. Tamper-resistant screw attachment of cover to mounting plate.
 - 5. Air Velocity: 18,000 linear feet per minute, minimum, at full power.
 - 6. Heater: 500 W, minimum, at full power.
 - 7. Total Wattage: 1400 W, maximum.
 - 8. Runtime: Field adjustable or automatic, up to 35 seconds.
 - 9. Warranty: 3 years.
 - 10. Electric Hand Dryer Products:
 - a. Toto HDR 111#SS.
 - b. Dyson Airblade V Series AB12.
 - c. Excel Dryer Inc.; XLERATOR: www.exceldryer.com.
 - d. Substitutions: Section 01 6000 - Product Requirements.
- C. Soap Dispenser: Liquid soap dispenser, deck-mounted on vanity, with polyethylene container concealed below deck; piston and 4 inch spout of stainless steel with bright polished finish; chrome-plated deck escutcheon.
 - 1. Minimum Capacity: 32 ounces.
 - 2. Product: B-824 SureFlo manufactured by Bobrick.
 - 3. Automatic top fill, electronic activation system.
 - 4. 824-241 Battery Pack.
- D. Mirrors: Stainless steel framed, 1/4 inch thick tempered safety glass; ASTM C1048.
 - 1. Size: As indicated on drawings.
 - 2. Frame: 0.05 inch angle shapes, with mitered and welded and ground corners, and tamperproof hanging system; satin finish.

3. Backing: Full-mirror sized, minimum 0.03 inch galvanized steel sheet and nonabsorptive filler material.
 4. Product: B-165 Series Channel Frame manufactured by Bobrick.
- E. Grab Bars: Stainless steel, smooth surface.
1. Standard Duty Grab Bars:
 - a. Push/Pull Point Load: 250 pound-force, minimum.
 - b. Dimensions: 1-1/4 inch outside diameter, minimum 0.05 inch wall thickness, exposed flange mounting, 1-1/2 inch clearance between wall and inside of grab bar.
 - c. Length and Configuration: As indicated on drawings.
- F. Sanitary Napkin Disposal Unit: Stainless steel, surface-mounted, self-closing door, locking bottom panel with full-length stainless steel piano-type hinge, removable receptacle.
1. Product: Classic Series manufactured by Bobrick.
 2. Recessed, Semi-recessed, or Surface Mounted as indicated on drawings.
- G. Diaper Changing Station: Wall-mounted folding diaper changing station for use in commercial toilet facilities, meeting or exceeding ASTM F2285.
1. Style: Horizontal.
 2. Material: Stainless steel shell with polyethylene body.
 3. Mounting: Surface.
 4. Manufacturers:
 - a. Koala Kare Products: www.koalabear.com.
 - b. Substitutions: 01 6000 - Product Requirements.

2.05 UTILITY ROOM ACCESSORIES

- A. Combination Utility Shelf/Mop and Broom Holder: 0.05 inch thick stainless steel, Type 304, with 1/2 inch returned edges, 0.06 inch steel wall brackets.
1. Hooks: 4, 0.06 inch stainless steel rag hooks at shelf front.
 2. Mop/broom holders: Three spring-loaded rubber cam holders at shelf front.
 3. Length: Manufacturer's standard length for number of holders/hooks.
 4. Product: B-239 manufactured by Bobrick.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify exact location of accessories for installation.
- C. For electrically-operated accessories, verify that electrical power connections are ready and in the correct locations.
- D. Verify that field measurements are as indicated on drawings.

3.02 PREPARATION

3.03 INSTALLATION

- A. Mounting Heights: As required by accessibility regulations, unless otherwise indicated.
1. Grab Bars: As indicated on drawings.
 2. Mirrors: 40 inch, measured to bottom of mirrored surface.
 3. Electric Hand Dryers: Measured from floor to bottom of nozzle:
 - a. Men: 44 inches.
 - b. Women: 42 inches.
 - c. Teenager: 41 inches.
 - d. Child: 32 inches.
 - e. Handicap: 36 inches.
 4. Other Accessories: As indicated on drawings.

3.04 PROTECTION

- A. Protect installed accessories from damage due to subsequent construction operations.

END OF SECTION

SECTION 10 4400
FIRE PROTECTION SPECIALTIES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Fire extinguishers.
- B. Accessories.

1.02 RELATED REQUIREMENTS

- A. Section 06 1000 - Rough Carpentry: Wood blocking product and execution requirements.

1.03 REFERENCE STANDARDS

- A. FM (AG) - FM Approval Guide; current edition.
- B. NFPA 10 - Standard for Portable Fire Extinguishers; 2013.
- C. UL (DIR) - Online Certifications Directory; current listings at database.ul.com.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Fire Extinguishers:
 - 1. JL Industries; www.activarcpg.com..
 - 2. Larsen's Manufacturing Company; www.ManagementSpecialties.com.

2.02 FIRE EXTINGUISHERS

- A. Fire Extinguishers - General: Comply with product requirements of NFPA 10 and applicable codes, whichever is more stringent.
 - 1. Provide extinguishers labeled by UL (DIR) or FM (AG) for purpose specified and as indicated.
- B. Multi-purpose Chemical Type Fire Extinguishers: Carbon steel tank, with pressure gage.
 - 1. Class: A:B:C type.
 - 2. Size: 10 pound.
 - 3. Finish: Baked polyester powder coat, Red color.

2.03 ACCESSORIES

- A. Fire Extinguisher Monitoring: provide electronically monitoring of Fire Extinguishers as required by the State of New Hampshire Fire Marshal.
- B. Cabinet Signage: As required by the Town of Hudson Fire Department.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify rough openings for cabinet are correctly sized and located.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install cabinets plumb and level in wall openings, 44 inches from finished floor to operable latch.
- C. Secure rigidly in place.
- D. Place extinguishers in cabinets.
- E. Position cabinet signage at location directed by Hudson Fire Department.

END OF SECTION

SECTION 12 3600 COUNTERTOPS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Wall-hung counters and vanity tops.

1.02 REFERENCE STANDARDS

- A. ANSI A208.1 - American National Standard for Particleboard; 2009.
- B. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards; 2014.
- C. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards, U.S. Version 3.0; 2016.
- D. NEMA LD 3 - High-Pressure Decorative Laminates; 2005.
- E. PS 1 - Structural Plywood; 2009.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Selection Samples: For each finish product specified, color chips representing manufacturer's full range of available colors and patterns.
- C. Verification Samples: For each finish product specified, minimum size 6 inches square, representing actual product, color, and patterns.

1.04 QUALITY ASSURANCE

- A. Fabricator Qualifications: Same fabricator as for cabinets on which tops are to be installed.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.06 FIELD CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

PART 2 PRODUCTS

2.01 COUNTERTOPS

- A. Quality Standard: Custom Grade, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.
- B. Plastic Laminate Countertops: High-pressure decorative laminate (HPDL) sheet bonded to substrate.
 - 1. Laminate Sheet, Type ____: NEMA LD 3, Grade HGS, 0.048 inch nominal thickness.
 - a. Finish: Matte or suede, gloss rating of 5 to 20.
 - b. Surface Color and Pattern: As selected by Architect from the manufacturer's full line.
 - c. Manufacturers:
 - 1) Formica Corporation: www.formica.com.
 - 2) Wilsonart, LLC: www.wilsonart.com.
 - 2. Exposed Edge Treatment: Square, substrate built up to minimum 1-1/4 inch thick; covered with matching laminate.
 - 3. Back and End Splashes: Same material, same construction.

2.02 MATERIALS

- A. Wood-Based Components:
 - 1. Wood fabricated from old growth timber is not permitted.
- B. Plywood for Supporting Substrate: PS 1 Exterior Grade, A-C veneer grade, minimum 5-ply; minimum 3/4 inch thick; join lengths using metal splines.
- C. Particleboard for Supporting Substrate: ANSI A208.1 Grade 2-M-2, 45 pcf minimum density; minimum 3/4 inch thick; join lengths using metal splines.
- D. Adhesives: Chemical resistant waterproof adhesive as recommended by manufacturer of materials being joined.

2.03 FABRICATION

- A. Fabricate tops and splashes in the largest sections practicable, with top surface of joints flush.
 - 1. Join lengths of tops using best method recommended by manufacturer.
 - 2. Fabricate to overhang fronts and ends of cabinets 1 inch except where top butts against cabinet or wall.
 - 3. Prepare all cutouts accurately to size; replace tops having improperly dimensioned or unnecessary cutouts or fixture holes.
- B. Provide back/end splash wherever counter edge abuts vertical surface unless otherwise indicated.
 - 1. Secure to countertop with concealed fasteners and with contact surfaces set in waterproof glue.
 - 2. Height: 4 inches, unless otherwise indicated.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- C. Verify that wall surfaces have been finished and mechanical and electrical services and outlets are installed in proper locations.

3.02 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.03 INSTALLATION

- A. Securely attach countertops to cabinets using concealed fasteners. Make flat surfaces level; shim where required.
- B. Attach plastic laminate countertops using screws with minimum penetration into substrate board of 5/8 inch.
- C. Seal joint between back/end splashes and vertical surfaces.

3.04 TOLERANCES

- A. Variation From Horizontal: 1/8 inch in 10 feet, maximum.
- B. Offset From Wall, Countertops: 1/8 inch maximum; 1/16 inch minimum.
- C. Field Joints: 1/8 inch wide, maximum.

3.05 CLEANING

- A. Clean countertops surfaces thoroughly.

3.06 PROTECTION

- A. Protect installed products until completion of project.

- B. Touch-up, repair or replace damaged products before Date of Substantial Completion.

3.07 SCHEDULES

- A. Plastic Laminate: Staff Room (Alternate #2, Funded by Others)

END OF SECTION

APPENDICES

Appendix A – Compliance with Laws and Regulations

Appendix B – Federal Labor Standards Provisions

Appendix C – Applicable Davis-Bacon Wage Rate Decision

Appendix D – Limited Survey of Hazardous Material by RPF Environmental, Inc, dated September 24, 2019

APPENDIX A:**Compliance by Grantee and Any Contractors, and Subcontractors
with Laws and Regulations**

In connection with the performance of the Grant Activities, Grantee and any Subrecipient, contractor or subcontractor, shall comply with all applicable statutes, laws, regulations, and orders of federal, state, county or municipal authorities which shall impose any obligation or duty upon the Grantee and other participants in the Grant Activities.

SUBRECIPIENT and any contractor and subcontractors shall comply with the following federal and state laws and all applicable standards, rules, orders, or regulations issued pursuant thereto:

1. The Copeland "Anti Kickback" Act, as amended (118 USC 874) as supplemented in Department of Labor regulations (41 CFR Chapter 60).
2. Nondiscrimination, Title VI of the Civil Rights Act of 1974 (PL 88 352), as amended, (42 USC 2000d) the Fair Housing Act of 1968 (PL 90 284), Executive Orders 11063 and 12259, and the requirements imposed by the Regulations of the Department of Housing and Urban Development (24 CFR 107 and 24 CFR 570.496) issued pursuant to that Title.
3. Executive Order No. 11246 ("Equal Employment Opportunity") as supplemented by the regulations of the United States Department of Labor (41 C.F.R. Part 60), and with any rules, regulations and guidelines as the State of New Hampshire or the United States issue to implement these regulations.
4. Labor Standards. Contract Work Hours and Safety Standards Act (40 USC 327 333).
5. The Flood Disaster Protection Act of 1973 (PL 93 234), as amended, regulations issued pursuant to that act, and Executive Order 11985.
6. Architectural Barriers Act (PL 90 480), 42 USC 4151, as amended, and the regulations issued or to be issued thereunder, including uniform accessibility standards (24 CFR 40) for public buildings with 15 or more residential units. RSA 275 C:10 and the New Hampshire Architectural Barrier Free Design Code (Han 100, et. seq.) also apply.
7. Rehabilitation Act of 1973, 29 USC 794, Sections 503 and 504, Executive Order 11914 and U.S. Department of Labor regulations issued pursuant thereto.
8. The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (PL 91 646), as amended, 15 CFR Part 916 including amendments thereto and regulations thereunder.
9. The National Environmental Policy Act of 1969 (PL 90 190): the National Historic Preservation Act of 1966 (80 Stat 915, 116 USC 470); and Executive Order No. 11593 of May 31, 1971, as specified in 24 CFR 58.

10. The Clean Air Act, as Amended, 42 USC 1857 et seq., the Federal Water Pollution Control Act, as amended, 33 USC 1251 et seq. and the regulations of the Environmental Protection Agency with respect thereto, at 40 CFR Part 15, as amended from time to time.
11. RSA 354 and rules of the New Hampshire Human Rights Commission (HUM 100, et. seq.) on discrimination in employment, membership, accommodations, and housing.
12. The Age Discrimination Act of 1975 as amended (42 USC 6101, et. seq.) and implementing regulations.
13. The lead paint requirements (24 CFR 35) of The Lead Based Paint Poisoning Prevention Act (42 USC 4821, et. seq.).
14. The NH State Energy Code (RSA 155 D).
15. The NH State Life Safety Code (RSA 155:1) and rules of the NH State Fire Marshall.
16. Citizen Participation Requirements. The 1987 amendments to the Housing and Community Development Act of 1974, stated in Section 508.
17. Affirmative Action Requirements.
18. Section 3 of the Housing and Urban Development Act of 1968 (12 USC 1701u) as amended by the Housing and Community Development Act of 1992 (42 USC 5301).

Grantee (the City of Portsmouth) shall cause the applicable provisions of this section to be inserted in all subrecipient agreements, contracts and subcontracts for any work or Project Activities covered by this Agreement so that the provisions will be binding on each subrecipient, contractor and subcontractor; provided, however, that the foregoing provisions shall not apply to contracts for standard commercial supplies or raw materials. Grantee shall take such action with respect to any subrecipient agreement, contract or subcontract as the State, or, where applicable, the United States, may direct as a means of enforcing such provisions, including sanctions for noncompliance.

4. The Flood Disaster Protection Act of 1973 (PL 93-234), as amended, regulations issued pursuant to that act, and Executive Order 11985.
5. Architectural Barriers Act (PL 90-480), 42 USC 4151, as amended, and the regulations issued or to be issued thereunder, including uniform accessibility standards (24 CFR 40) for public buildings with 15 or more residential units. RSA 275-C:10 and the New Hampshire Architectural Barrier Free Design Code (Han 100, et. seq.) also apply.
6. Rehabilitation Act of 1973, 29 USC 794, Sections 503 and 504, Executive Order 11914 and U.S. Department of Labor regulations issued pursuant thereto.
7. The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (PL 91-646), as amended, 15 CFR Part 916 including amendments thereto and regulations thereunder.

8. The National Environmental Policy Act of 1969 (PL 90-190): the National Historic Preservation Act of 1966 (80 Stat 915, 116 USC 470); and Executive Order No. 11593 of May 31, 1971, as specified in 24 CFR 58.
9. The Clean Air Act, as Amended, 42 USC 1857 et seq., the Federal Water Pollution Control Act, as amended, 33 USC 1251 et seq. and the regulations of the Environmental Protection Agency with respect thereto, at 40 CFR Part 15, as amended from time to time.
10. RSA 354 and rules of the New Hampshire Human Rights Commission (HUM 100, et. seq.) on discrimination in employment, membership, accommodations, and housing.
11. The Age Discrimination Act of 1975 as amended (42 USC 6101, et. seq.) and implementing regulations.
12. The lead paint requirements (24 CFR 35) of The Lead-Based Paint Poisoning Prevention Act (42 USC 4821, et. seq.).
13. The NH State Energy Code (RSA 155-D).
14. The NH State Life Safety Code (RSA 155:1) and rules of the NH State Fire Marshall.
15. Citizen Participation Requirements. The 1987 amendments to the Housing and Community Development Act of 1974, stated in Section 508.
16. Affirmative Action Requirements.
17. Section 3 of the Housing and Urban Development Act of 1968 (12 USC 1701u) as amended by the Housing and Community Development Act of 1992 (42 USC 5301).
18. In addition to other provisions required by the Federal agency or non-Federal entity, all contracts made by the non-Federal entity under the Federal award must contain provisions covering the following, as applicable. **[APPENDIX II TO PART 200—CONTRACT PROVISIONS FOR NON-FEDERAL ENTITY CONTRACTS UNDER FEDERAL AWARDS]**

(A) Contracts for more than the simplified acquisition threshold currently set at \$150,000, which is the inflation adjusted amount determined by the Civilian Agency Acquisition Council and the Defense Acquisition Regulations Council (Councils) as authorized by 41 U.S.C. 1908, must address administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as appropriate.

(B) All contracts in excess of \$10,000 must address termination for cause and for convenience by the non-Federal entity including the manner by which it will be effected and the basis for settlement.

(C) Equal Employment Opportunity. Except as otherwise provided under 41 CFR Part 60, all contracts that meet the definition of “federally assisted construction contract” in 41 CFR Part 60-1.3 must include the equal opportunity clause provided under 41 CFR 60-1.4(b), in accordance with Executive Order 11246, “Equal Employment Opportunity” (30 FR 12319, 12935, 3 CFR Part, 1964-1965 Comp., p. 339), as amended by Executive Order 11375, “Amending Executive Order 11246 Relating to Equal Employment Opportunity,” and implementing regulations at 41 CFR part 60, “Office of Federal Contract Compliance Programs, Equal Employment

Opportunity, Department of Labor.”

(D) Davis-Bacon Act, as amended (40 U.S.C. 3141-3148). When required by Federal program legislation, all prime construction contracts in excess of \$2,000 awarded by non-Federal entities must include a provision for compliance with the Davis-Bacon Act (40 U.S.C. 3141-3144, and 3146-3148) as supplemented by Department of Labor regulations (29 CFR Part 5, “Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction”) (see Attachment B). In accordance with the statute, contractors must be required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, contractors must be required to pay wages not less than once a week. The non-Federal entity must place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation. The decision to award a contract or subcontract must be conditioned upon the acceptance of the wage determination (see Attachment C, Wage Rate Decision). The non-Federal entity must report all suspected or reported violations to the Federal awarding agency. The contracts must also include a provision for compliance with the Copeland “Anti-Kickback” Act (40 U.S.C. 3145), as supplemented by Department of Labor regulations (29 CFR Part 3, “Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States”). The Act provides that each contractor or SUBRECIPIENT must be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency.

(E) Contract Work Hours and Safety Standards Act (40 U.S.C. 3701-3708). Where applicable, all contracts awarded by the non-Federal entity in excess of \$100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Under 40 U.S.C. 3702 of the Act, each contractor must be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

(F) Rights to Inventions Made Under a Contract or Agreement. If the Federal award meets the definition of “funding agreement” under 37 CFR §401.2 (a) and the recipient or SUBRECIPIENT wishes to enter into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that “funding agreement,” the recipient or SUBRECIPIENT must comply with the requirements of 37 CFR Part 401, “Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements,” and any implementing regulations issued by the awarding agency.

(G) Clean Air Act (42 U.S.C. 7401-7671q.) and the Federal Water Pollution Control Act (33 U.S.C. 1251-1387), as amended—Contracts and subgrants of amounts in excess of \$150,000 must contain a provision that requires the non-Federal award to agree to comply with all

applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).

(H) Debarment and Suspension (Executive Orders 12549 and 12689)—A contract award (see 2 CFR 180.220) must not be made to parties listed on the government wide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR part 1986 Comp., p. 189) and 12689 (3 CFR part 1989 Comp., p. 235), “Debarment and Suspension.” SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549.

(I) Byrd Anti-Lobbying Amendment (31 U.S.C. 1352)—Contractors that apply or bid for an award exceeding \$100,000 must file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the non-Federal award.

(J) See §200.322 Procurement of recovered materials.

[78 FR 78608, Dec. 26, 2013, as amended at 79 FR 75888, Dec. 19, 2014]

APPENDIX B:

Federal Labor Standards Provisions

[see following pages]

Federal Labor Standards Provisions

U.S. Department of Housing and Urban Development Office of Labor Relations

Applicability

The Project or Program to which the construction work covered by this contract pertains is being assisted by the United States of America and the following Federal Labor Standards Provisions are included in this Contract pursuant to the provisions applicable to such Federal assistance.

A. 1. (i) Minimum Wages. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period.

Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under 29 CFR 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible, place where it can be easily seen by the workers.

(ii) (a) Any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. HUD shall approve an additional classification and wage rate and fringe benefits therefor only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(b) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and HUD or its designee agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by HUD or its designee to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB control number 1215-0140.)

(c) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and HUD or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), HUD or its designee shall refer the questions, including the views of all interested parties and the recommendation of HUD or its designee, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

(d) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (1)(ii)(b) or (c) of this paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part

of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

2. Withholding. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee or helper, employed or working on the site of the work, all or part of the wages required by the contract, HUD or its designee may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased. HUD or its designee may, after written notice to the contractor, disburse such amounts withheld for and on account of the contractor or subcontractor to the respective employees to whom they are due. The Comptroller General shall make such disbursements in the case of direct Davis-Bacon Act contracts.

3. (i) Payrolls and basic records. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in Section I(b)(2)(B) of the Davis-bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5 (a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section I(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been

communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs. (Approved by the Office of Management and Budget under OMB Control Numbers 1215-0140 and 1215-0017.)

(ii) (a) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant sponsor, or owner, as the case may be, for transmission to HUD or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i) except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant sponsor, or owner, as the case may be, for transmission to HUD or its designee, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this subparagraph for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to HUD or its designee. (Approved by the Office of Management and Budget under OMB Control Number 1215-0149.)

(b) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under 29 CFR 5.5 (a)(3)(ii), the appropriate information is being maintained under 29 CFR 5.5(a)(3)(i), and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR Part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(c) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by subparagraph A.3.(ii)(b).

(d) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under subparagraph A.3.(i) available for inspection, copying, or transcription by authorized representatives of HUD or its designee or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, HUD or its designee may, after written notice to the contractor, sponsor, applicant or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and Trainees.

(i) **Apprentices.** Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who

is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) **Trainees.** Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by

the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) **Equal employment opportunity.** The utilization of apprentices, trainees and journeymen under 29 CFR Part 5 shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR Part 3 which are incorporated by reference in this contract

6. Subcontracts. The contractor or subcontractor will insert in any subcontracts the clauses contained in subparagraphs 1 through 11 in this paragraph A and such other clauses as HUD or its designee may by appropriate instructions require, and a copy of the applicable prevailing wage decision, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this paragraph.

7. Contract termination; debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act Requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and HUD or its designee, the U.S. Department of Labor, or the employees or their representatives.

10. (i) Certification of Eligibility. By entering into this contract the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be

awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001. Additionally, U.S. Criminal Code, Section 1 01 0, Title 18, U.S.C., "Federal Housing Administration transactions", provides in part: "Whoever, for the purpose of . . . influencing in any way the action of such Administration..... makes, utters or publishes any statement knowing the same to be false..... shall be fined not more than \$5,000 or imprisoned not more than two years, or both."

11. Complaints, Proceedings, or Testimony by Employees. No laborer or mechanic to whom the wage, salary, or other labor standards provisions of this Contract are applicable shall be discharged or in any other manner discriminated against by the Contractor or any subcontractor because such employee has filed any complaint or instituted or caused to be instituted any proceeding or has testified or is about to testify in any proceeding under or relating to the labor standards applicable under this Contract to his employer.

B. Contract Work Hours and Safety Standards Act. The provisions of this paragraph B are applicable where the amount of the prime contract exceeds \$100,000. As used in this paragraph, the terms "laborers" and "mechanics" include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which the individual is employed on such work to work in excess of 40 hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of 40 hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in subparagraph (1) of this paragraph, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in subparagraph (1) of this paragraph, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of 40 hours without payment of the overtime wages required by the clause set forth in subparagraph (1) of this paragraph.

(3) **Withholding for unpaid wages and liquidated damages.** HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contract, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act which is held by the same prime contractor such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in subparagraph (2) of this paragraph.

(4) **Subcontracts.** The contractor or subcontractor shall insert in any subcontracts the clauses set forth in subparagraph (1) through (4) of this paragraph and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in subparagraphs (1) through (4) of this paragraph.

C. Health and Safety. The provisions of this paragraph C are applicable where the amount of the prime contract exceeds \$100,000.

(1) No laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health and safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation.

(2) The Contractor shall comply with all regulations issued by the Secretary of Labor pursuant to Title 29 Part 1926 and failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act, (Public Law 91-54, 83 Stat 96). 40 USC 3701 et seq.

(3) The contractor shall include the provisions of this paragraph in every subcontract so that such provisions will be binding on each subcontractor. The contractor shall take such action with respect to any subcontractor as the Secretary of Housing and Urban Development or the Secretary of Labor shall direct as a means of enforcing such provisions.

APPENDIX C:**Applicable Davis-Bacon Wage Rate Decision**

"General Decision Number: NH20190022 09/27/2019

Superseded General Decision Number: NH20180042

State: New Hampshire

Construction Type: Building

County: Rockingham County in New Hampshire.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.60 for calendar year 2019 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.60 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2019. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/04/2019
1	01/18/2019
2	01/25/2019
3	06/14/2019
4	06/21/2019
5	06/28/2019
6	09/27/2019

* ASBE0006-014 09/01/2019

	Rates	Fringes
ASBESTOS WORKER/HEAT & FROST INSULATOR.....	\$ 38.75	29.75

BOIL0029-004 01/01/2017

	Rates	Fringes
BOILERMAKER.....	\$ 42.42	24.92

BRNH0003-001 05/01/2018

	Rates	Fringes
BRICKLAYER.....	\$ 30.36	25.20

ELEC0490-006 06/01/2019

	Rates	Fringes
ELECTRICIAN (Includes Low Voltage Wiring and Alarm Installation).....	\$ 30.13	20.12

ELEV0004-007 01/01/2019

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 59.47	33.705

a. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day, Christmas Day and the Friday after Thanksgiving.

b. VACATION: Employer contributes 8% of basic hourly rate for 5 years or more of service; 6% of basic hourly rate for 6 months to 5 years of service as vacation pay credit.

IRON0007-037 03/16/2019

	Rates	Fringes
IRONWORKER (Reinforcing and Structural).....	\$ 26.01	22.57

LABO0976-008 06/01/2018

	Rates	Fringes
LABORER: Common or General.....	\$ 21.01	17.57

PLUM0131-004 06/01/2019

	Rates	Fringes
PIPEFITTER.....	\$ 34.07	23.48

SUNH2015-008 06/16/2017

	Rates	Fringes
CARPENTER, Includes Acoustical Ceiling Installation and Form Work (Excludes Drywall Hanging and Drywall Finishing/Taping.....	\$ 24.47	8.55
CEMENT MASON/CONCRETE FINISHER...	\$ 22.04	9.70
DRYWALL FINISHER/TAPER.....	\$ 25.00	0.00
DRYWALL HANGER, Includes Metal Stud Installation.....	\$ 25.00	0.00
GLAZIER.....	\$ 26.75	3.48
LABORER: Mason Tender - Brick...	\$ 16.52	4.74
OPERATOR: Backhoe/Excavator/Trackhoe.....	\$ 24.02	4.25
OPERATOR: Crane.....	\$ 27.42	3.83
OPERATOR: Loader.....	\$ 22.25	2.13
OPERATOR: Roller.....	\$ 23.56	3.28
PAINTER (Brush and Roller).....	\$ 18.10	1.58
PAINTER: Spray.....	\$ 22.99	3.28
PLUMBER, Includes HVAC Pipe Installation.....	\$ 26.72	5.56
ROOFER.....	\$ 19.22	0.00
SHEET METAL WORKER, Includes HVAC Duct Installation.....	\$ 24.88	5.46
SPRINKLER FITTER (Fire Sprinklers).....	\$ 31.29	9.78
WATERPROOFER.....	\$ 26.69	0.00

WELDERS - Receive rate prescribed for craft performing
operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

=====

END OF GENERAL DECISION"

APPENDIX D:

Asbestos Testing Reports

1) Hazardous Materials Survey Entitled: “Limited Survey Findings” by RPF Environmental dated September 24, 2019 (test date August 28, 2019), entitled “Discovery Center, 10 Middle Street, Portsmouth, NH, Limited Survey Findings RPF File No. 199435.”

September 24, 2019

Dan Hartrey
City of Portsmouth
Facilities Project Manager
680 Peverly Hill Road
Portsmouth, NH 03801

Re: Discovery Center, 10 Middle Street, Portsmouth, NH
Limited Survey Findings
RPF File No. 199435

Dear Mr. Hartrey:

On August 28, 2019, RPF Environmental, Inc. (RPF) conducted a limited survey at the Discovery Center located at 10 Middle Street in Portsmouth, New Hampshire. The limited survey was performed in the affected areas of the building, as designated by you or your site representative, for accessible hazardous building material, as indicated herein. Below is a summary of findings, discussion of the results and preliminary recommendations for proper management of the identified hazardous building material asbestos containing building material. Attached to this report are the survey data tables, laboratory results, survey methodologies and limitations.

This report is not intended to be used as an abatement specification or work plan. To proceed with abatement work, the following important steps are necessary:

1. A work plan or project design documents must be prepared prior to abatement by a certified abatement project designer.
2. The abatement specification or work plan should then be used to solicit bids from qualified abatement contractors. Only properly licensed contractors should be used for asbestos abatement and disposal.
3. A qualified industrial hygiene/testing consultant should conduct sufficient testing and inspections of the work, independent of the abatement contractor. The consultant should also prepare final abatement reports for the work.

Summary of Findings

The Portsmouth Discover Center is a two-story, masonry structure. The survey was limited to the public bathrooms, staff restrooms, kitchenette, storage area, and a portion of the staff room located in the southwest corner of the 1st floor area.

The scope of the survey included accessible asbestos-containing building material in accordance with the initial asbestos inspection requirements prior to renovation or demolition work as stated in the state regulations and applicable federal regulations. In addition, the survey included screening for polychlorinated biphenyls (PCB) in caulking.

Asbestos

Multiple types of suspect asbestos-containing building material (ACBM) were observed by RPF, including friable and nonfriable suspect material. Based on the testing performed by RPF, asbestos was detected in the following materials:

- 12" Tan Floor Tile and Black Mastic
- Sink Basin Undercoating

PCB in Caulking

Based on visual observations performed by RPF, two representative samples of door caulking were sampled and tested for PCBs. No detectable levels of PCBs were present in the exterior door caulk, while only very low levels of PCBs were detected in the interior door caulk which were well below the US EPA threshold.

Depending on the extent of renovation and final construction plans, proper abatement and/or management of the materials will be required in accordance with applicable State and federal regulations. Renovation and demolition plans should be reviewed by a certified industrial hygienist and a licensed project designer for possible asbestos impact issues. Based on the impact assessment and planned usage, technical specifications should be prepared for abatement, as applicable. A management plan should also be prepared to address any asbestos or other hazardous material scheduled to remain after construction.

Discussion of Findings

Asbestos-Containing Building Material

Asbestos is the name for a group of naturally occurring minerals that separate into strong, very fine fibers. The adverse health effects associated with asbestos exposure have been extensively studied for many years. Results of these studies and epidemiological investigations have demonstrated that inhalation of asbestos fibers may lead to increased risk of developing one or more diseases. In all cases, extreme care must be used not to disturb asbestos-containing materials or to create fiber release episodes.

In the accessible locations surveyed, RPF identified twenty-four (24) homogeneous groups of accessible suspect asbestos-containing building material. Suspect materials were identified based on current industry standards, EPA, and other guideline listings of potential suspect ACBM.

The following is a summary list of the suspect ACBM identified and sampled during this survey:

Gypsum Board and Joint Compound	Straight Brown Covebase and Brown
Red Exterior Door Caulk	Adhesive
White Caulk	Curved Brown Covebase and Brown
White Interior Door Caulk	Adhesive
Laminate Countertop and Mastic	12" Tan Floor Tile and Black Mastic
Clear Carpet Glue	12" Blue Floor Tile and Yellow Mastic
Yellow Carpet glue	Ceramic Floor Tile Grout and Adhesive
Black Sink Basin Undercoat	2x2 Suspended Ceiling Tiles
Grey Covebase and Yellow Adhesive	

A total of forty-four (44) samples were extracted from the different groups of suspect material in accordance with EPA sampling protocols. Of the samples collected by RPF, asbestos was detected in two (2) groups of suspect ACBM. Table 1 below includes a list of ACBM identified in the building, EPA category listings, and asbestos content. A listing of the different homogenous groups of suspect material identified, samples collected, and analytical results is included in Appendix A.

TABLE 1
SUMMARY OF ACBM IDENTIFIED

Building Material	Location	Approximate Quantity	EPA Category	Asbestos Results
Black Sink Basin Undercoating	Kitchenette	5 square feet	Category II Nonfriable	3% Chrysotile
12" Tan Floor Tile with Black Mastic	Kitchenette, hallway outside staff restrooms, and the staff room (under blue floor tile)	350 square feet	Category I Nonfriable	3% Chrysotile

Notes: All quantities are approximate only and should be confirmed during abatement project design and abatement bidding.

The ACBM identified during this survey consists of nonfriable material which was observed to be in good to fair condition and, left undisturbed and properly managed, is unlikely to cause any major fiber release episodes.

It should be noted that suspect textured surfacing, present on the high ceiling in the hallway outside the public restrooms, was reported to RPF as being outside the scope of work of the project and sampling of the material was not needed at this time. If the scope of the project changes and this material will be impacted please notify RPF to arrange for proper testing and assessment.

The structure was in current use at the time of the survey and full destructive or exploratory survey methods were not feasible.

Suspect materials encountered at the site subsequent to this survey, which are not included on the enclosed listings of suspect material sampled, should be assumed to be ACBM until proper testing proves otherwise (for example prior to any disturbance due to maintenance, renovation or demolition activity). Please notify RPF in this event to arrange for proper testing and assessments. Please reference the attached methodology and limitations.

PCB in Caulking

Two (2) composite samples of building caulking were collected and submitted for analysis to determine PCB content. These samples were comprised of discrete caulking materials collected from various interior and exterior door trim. The samples were analyzed by Eastern Analytical, Inc. using EPA Method 8082. The results of this testing showed no detectable PCBs in the exterior door caulk and PCB concentration of 1.5 parts per million (ppm) total PCBs in the interior door caulk. PCBs in building materials at concentrations greater than 50 ppm is regulated pursuant to 40 CFR § 761.3. The results of the PCB analysis are included in Appendix B.

Conclusions

Based on the survey findings, the building was found to contain ACBM as detailed in Table 1 above and the asbestos sample results in Appendix A.

In accordance with current regulatory requirements, ACBM that may be impacted or disturbed (such that asbestos fiber release occurs) by renovation, demolition or other such activity must be removed by qualified, licensed firms. Although regulations for removal of nonfriable ACBM are somewhat less stringent than the requirements for friable ACBM, it should be noted that nonfriable ACBM that is subjected to grinding, abrasion, and other forces, could be rendered friable. In this event, the nonfriable ACBM would be re-categorized friable ACBM.

ACBM that will not be impacted by renovation or demolition activity may be left in place if managed properly and if the materials are maintained in good condition. ACBM to remain in the building should be included in an asbestos management plan and operations and maintenance (O&M) program detailing the measures to be used to safely occupy the building until the ACBM is fully removed. An accredited Management Planner should prepare the O&M Program in accordance with the guidelines set forth in 40 CFR Part 763 (AHERA).

Sufficiently in advance of the start of renovation and/or remediation work, abatement project design should be completed. As part the initial design steps any planned renovation and demolition activity should be reviewed for potential impact on ACBM. Asbestos removal is highly regulated at the State and federal level, and in some cases, at the local level also. Notification to NH Air Resources is required 10-days prior to the start of interior abatement work and demolition. Only qualified, trained, and licensed firms, as applicable, should be engaged to complete asbestos removal or other abatement activity. Asbestos abatement work must be designed (abatement specifications or work plan prepared) by accredited licensed personnel.

All employees and contractors that may access or otherwise disturb areas with suspect ACBM present should be notified of the presence of ACBM and possible hidden ACBM, and the need to use caution when proceeding with work. Appropriate notifications, labeling and other hazard communications should be completed to all employees, contractors and others in accordance with US OSHA regulations and other applicable requirements (including asbestos labeling in accordance with 29 CFR Part 1926). The scope of RPF services for this survey did not include labeling of ACBM or hazard communications to other employees, building occupants, contractors, or subcontractors.

Documentation of current ACBM conditions and in-depth hazard assessment is beyond the scope-of-work for this initial survey. With the exception of the specific testing and analysis detailed herein, no other samples of materials, oil, water, ground water, air, or other suspect hazardous materials were collected in the course of this inspection that supports or denies these conclusions. No additional services beyond those explicitly stated herein were performed and none should be inferred or implied. The summary and conclusions are based on reasonably ascertainable information as described in this report. RPF Environmental, Inc. makes no guarantees, warranties, or references regarding this property or the condition of the property after the period of this report.

If you have any questions at this time, or if you would like to discuss the remediation process, please call our office.

Sincerely,
RPF ENVIRONMENTAL, INC.



Brianna Ham, CMI
EH&S Consultant
NH Licensed Inspector

Enclosures:

- Appendix A: Asbestos Bulk Sample Results
- Appendix B: PCB Sample Results
- Appendix C: Photographs and Map
- Appendix D: Summary of Methodology and Limitations

199435 Discovery Center 082819 Limited Survey Report

APPENDIX A

**CITY OF PORTSMOUTH
 Discovery Center
 Southwest Portion of 1st Floor**

Polarized Light Microscopy – EPA 600/R-93/116 Method

Samples Collected: August 28, 2019

Sample ID	Description	Asbestos Status
082819-HG1a	Gypsum Board and Joint Compound - East Hallway, above restrooms	None Detected
082819-HG1b	Gypsum Board and Joint Compound - Outside Public Men's Restroom	None Detected
082819-HG1c	Gypsum Board and Joint Compound - Outside Public Women's Restroom	None Detected
082819-HG2a	Exterior Door Caulk, red - Exterior door in Staff room	None Detected
082819-HG2b	Exterior Door Caulk, red - Exterior door in Staff room	None Detected
082819-HG3a	Caulking, white - Kitchenette, around counter	None Detected
082819-HG3b	Caulking, white - Kitchenette, around counter	None Detected
082819-HG4a	Interior Door Caulk, white - Kitchenette, door	None Detected
082819-HG4b	Interior Door Caulk, white - Staff Women's Restroom, door	None Detected
082819-HG5 - A	Laminate Countertop, orange - Staff Room	None Detected
082819-HG5 - B	Mastic, yellow - Staff Room	None Detected
082819-HG6 - A	Laminate Countertop, white - Kitchenette	None Detected
082819-HG6 - B	Mastic, yellow - Kitchenette	None Detected
082819-HG7a	Carpet Glue, clear - Kitchenette, under carpet squares	None Detected
082819-HG7b	Carpet Glue, clear - Kitchenette, under carpet squares	None Detected
082819-HG8a	Carpet Glue, yellow - Outside Public Men's Restroom	None Detected
082819-HG8b	Carpet Glue, yellow - Outside Public Women's Restroom	None Detected
082819-HG9a	Sink Basin Undercoating, black - Kitchenette	3% Chrysotile
082819-HG9b	Sink Basin Undercoating, black - Kitchenette	*SFP
082819-HG10a - A	Cove Base, grey - Staff Room, by door to front	None Detected
082819-HG10a - B	Adhesive, yellow - Staff Room, by door to front	None Detected

Notes:

- SFP Means analysis was terminated because asbestos was detected on a previous homogenous sample.
- Please reference the full report for discussions and additional information and limitations pertaining to these results.

**CITY OF PORTSMOUTH
 Discovery Center
 Southwest Portion of 1st Floor**

Polarized Light Microscopy – EPA 600/R-93/116 Method

Samples Collected: August 28, 2019

Sample ID	Description	Asbestos Status
082819-HG10b - A	Cove Base, grey - Staff Room, by door to the west hallway	None Detected
082819-HG10b - B	Adhesive, yellow - Staff Room, by door to the west hallway	None Detected
082819-HG11a - A	Cove Base, straight brown - Outside Public Men's Restroom	None Detected
082819-HG11a - B	Adhesive, brown - Outside Public Men's Restroom	None Detected
082819-HG11b - A	Cove Base, straight brown - Outside Public Women's Restroom	None Detected
082819-HG11b - B	Adhesive, brown - Outside Public Women's Restroom	None Detected
082819-HG12a - A	Cove Base, curved brown - West Hallway, Outside Kitchenette	None Detected
082819-HG12a - B	Adhesive, brown - West Hallway, Outside Kitchenette	None Detected
082819-HG12b - A	Cove Base, curved brown - West Hallway, Outside Staff Men's Restroom	None Detected
082819-HG12b - B	Adhesive, brown - West Hallway, Outside Staff Men's Restroom	None Detected
082819-HG13a - A	12" Floor Tile, tan - West Hallway, by the door to the south room	3% Chrysotile
082819-HG13a - B	Mastic, black - West Hallway, by the door to the south room	3% Chrysotile
082819-HG13b - A	12" Floor Tile, tan - Kitchenette	*SFP
082819-HG13b - B	Mastic, black - Kitchenette	*SFP
082819-HG14a - A	12" Floor Tile, blue - Staff Room, by the door to the front	None Detected
082819-HG14a - B	Mastic, yellow - Staff Room, by the door to the front	None Detected
082819-HG14b - A	12" Floor Tile, blue - Staff Room, by door to west hallway	None Detected
082819-HG14b - B	Mastic, yellow - Staff Room, by door to west hallway	None Detected
082819-HG15a	Ceramic Floor Tile Grout, grey - Staff Men's Restroom	None Detected
082819-HG15b - A	Ceramic Floor Tile Grout, grey - Staff Women's Restroom	None Detected
082819-HG15b - B	Ceramic Floor Tile Adhesive, brown - Staff Women's Restroom	None Detected

Notes:

- SFP Means analysis was terminated because asbestos was detected on a previous homogenous sample.
- Please reference the full report for discussions and additional information and limitations pertaining to these results.

**CITY OF PORTSMOUTH
Discovery Center
Southwest Portion of 1st Floor**

Polarized Light Microscopy – EPA 600/R-93/116 Method

Samples Collected: August 28, 2019

Sample ID	Description	Asbestos Status
082819-HG16a	Suspended Ceiling Tile, 2x2 - West Hallway	None Detected
082819-HG16b	Suspended Ceiling Tile, 2x2 - Public Women's Restroom	None Detected

RPF Project Number: 199435

Notes:

- SFP Means analysis was terminated because asbestos was detected on a previous homogenous sample.
- Please reference the full report for discussions and additional information and limitations pertaining to these results.

APPENDIX B



Eastern Analytical, Inc.

professional laboratory and drilling services

Brianna Ham
RPF Environmental, Inc.
320 First NH Turnpike
Northwood, NH 03261



Subject: Laboratory Report

Eastern Analytical, Inc. ID: 199689
Client Identification: 199435 / Portsmouth Discovery
Date Received: 8/29/2019

Dear Ms. Ham :

Enclosed please find the laboratory report for the above identified project. All analyses were performed in accordance with our QA/QC Program. Unless otherwise stated, holding times, preservation techniques, container types, and sample conditions adhered to EPA Protocol. Samples which were collected by Eastern Analytical, Inc. (EAI) were collected in accordance with approved EPA procedures. Eastern Analytical, Inc. certifies that the enclosed test results meet all requirements of NELAP and other applicable state certifications. Please refer to our website at www.easternanalytical.com for a copy of our NELAP certificate and accredited parameters.

The following standard abbreviations and conventions apply to all EAI reports:

Solid samples are reported on a dry weight basis, unless otherwise noted

< : "less than" followed by the reporting limit

> : "greater than" followed by the reporting limit

%R : % Recovery

Eastern Analytical Inc. maintains certification in the following states: Connecticut (PH-0492), Maine (NH005), Massachusetts (M-NH005), New Hampshire/NELAP (1012), Rhode Island (269), Vermont (VT1012) and New York (12072).

The following information is contained within this report: Sample Conditions summary, Analytical Results/Data, Quality Control data (if requested) and copies of the Chain of Custody. This report may not be reproduced except in full, without the the written approval of the laboratory.

If you have any questions regarding the results contained within, please feel free to directly contact me or the chemist(s) who performed the testing in question. Unless otherwise requested, we will dispose of the sample (s) 30 days from the sample receipt date.

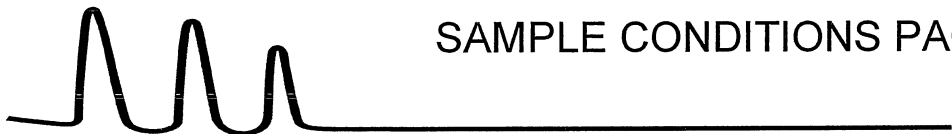
We appreciate this opportunity to be of service and look forward to your continued patronage.

Sincerely,

Lorraine Olashaw, Lab Director

Date

of pages (excluding cover letter)



SAMPLE CONDITIONS PAGE

EAI ID#: 199689

Client: RPF Environmental, Inc.

Client Designation: 199435 / Portsmouth Discovery

Temperature upon receipt (°C): 29.5

Received on ice or cold packs (Yes/No): N

Acceptable temperature range (°C): 0-6

Lab ID	Sample ID	Date	Date	Sample	% Dry	Exceptions/Comments (other than thermal preservation)
		Received	Sampled	Matrix	Weight	
199689.01	082819-PCB1	8/29/19	8/28/19	solid	99.2	Adheres to Sample Acceptance Policy
199689.02	082819-PCB2	8/29/19	8/28/19	solid	99.6	Adheres to Sample Acceptance Policy

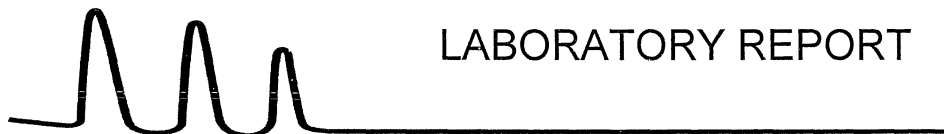
Samples were properly preserved and the pH measured when applicable unless otherwise noted. Analysis of solids for pH, Flashpoint, Ignitability, Paint Filter, Corrosivity, Conductivity and Specific Gravity are reported on an "as received" basis.

Immediate analyses, pH, Total Residual Chlorine, Dissolved Oxygen and Sulfite, performed at the laboratory were run outside of the recommended 15 minute hold time.

All results contained in this report relate only to the above listed samples.

References include:

- 1) EPA 600/4-79-020, 1983
- 2) Standard Methods for Examination of Water and Wastewater, 20th, 21st, 22nd & 23rd Edition or noted Revision year.
- 3) Test Methods for Evaluating Solid Waste SW 846 3rd Edition including updates IVA and IVB
- 4) Hach Water Analysis Handbook, 4th edition, 1992



LABORATORY REPORT

EAI ID#: 199689

Client: RPF Environmental, Inc.

Client Designation: 199435 / Portsmouth Discovery

Sample ID:	082819-PCB1	082819-PCB2
Lab Sample ID:	199689.01	199689.02
Matrix:	solid	solid
Date Sampled:	8/28/19	8/28/19
Date Received:	8/29/19	8/29/19
% Solid:	99.2	99.6
Units:	mg/kg	mg/kg
Date of Extraction/Prep:	8/29/19	8/29/19
Date of Analysis:	8/30/19	8/30/19
Analyst:	SG	SG
Extraction Method:	3540C	3540C
Analysis Method:	8082A	8082A
Dilution Factor:	29	27
PCB-1016	< 0.5	< 0.4
PCB-1221	< 0.5	< 0.4
PCB-1232	< 0.5	< 0.4
PCB-1242	1.5	< 0.4
PCB-1248	< 0.5	< 0.4
PCB-1254	< 0.5	< 0.4
PCB-1260	< 0.5	< 0.4
PCB-1262	< 0.5	< 0.4
PCB-1268	< 0.5	< 0.4
TMX (surr)	77 %R	77 %R
DCB (surr)	71 %R	71 %R

Acid clean-up was performed on the samples and associated batch QC.
Detection limits elevated in response to the lower initial mass used for analysis.



QC REPORT

EAI ID#: 199689

Client: RPF Environmental, Inc.

Batch ID: 637026-69012/S082919PCB1

Client Designation: 199435 / Portsmouth Discovery

Parameter Name	Blank	LCS	LCSD	Analysis Date	Units	Limits	RPD	Method
PCB-1016	< 0.02	0.13 (97 %R)	0.13 (97 %R) (1 RPD)	8/30/2019	mg/kg	40 - 140	30	8082A
PCB-1221	< 0.02	< 0.02 (%R N/A)	< 0.02 (%R N/A) (RPD N/A)	8/30/2019	mg/kg			8082A
PCB-1232	< 0.02	< 0.02 (%R N/A)	< 0.02 (%R N/A) (RPD N/A)	8/30/2019	mg/kg			8082A
PCB-1242	< 0.02	< 0.02 (%R N/A)	< 0.02 (%R N/A) (RPD N/A)	8/30/2019	mg/kg			8082A
PCB-1248	< 0.02	< 0.02 (%R N/A)	< 0.02 (%R N/A) (RPD N/A)	8/30/2019	mg/kg			8082A
PCB-1254	< 0.02	< 0.02 (%R N/A)	< 0.02 (%R N/A) (RPD N/A)	8/30/2019	mg/kg			8082A
PCB-1260	< 0.02	0.12 (91 %R)	0.12 (89 %R) (2 RPD)	8/30/2019	mg/kg	40 - 140	30	8082A
PCB-1262	< 0.02	< 0.02 (%R N/A)	< 0.02 (%R N/A) (RPD N/A)	8/30/2019	mg/kg			8082A
PCB-1268	< 0.02	< 0.02 (%R N/A)	< 0.02 (%R N/A) (RPD N/A)	8/30/2019	mg/kg			8082A
TMX (surr)	85 %R	88 %R	89 %R	8/30/2019	% Rec	30 - 150	30	8082A
DCB (surr)	85 %R	90 %R	86 %R	8/30/2019	% Rec	30 - 150	30	8082A

Samples were extracted and analyzed within holding time limits.

Instrumentation was calibrated in accordance with the method requirements.

The method blanks were free of contamination at the reporting limits.

Sample surrogate recoveries met the above stated criteria.

The associated matrix spikes and/or Laboratory Control Samples met acceptance criteria.

There were no exceptions in the analyses, unless noted.

*// Flagged analyte recoveries deviated from the QA/QC limits. Unless noted below, flagged analytes that exceed acceptance limits in the Quality Control sample were not detected in the field samples.

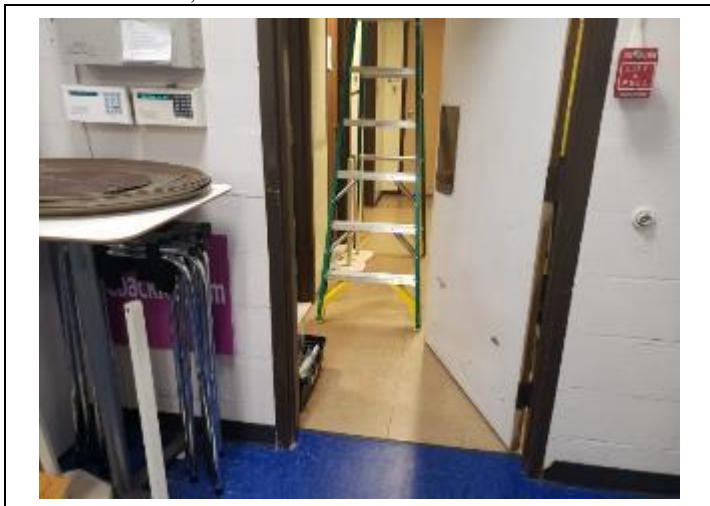
APPENDIX C



1. Portsmouth Discover Center located at 10 Middle Street in Portsmouth, NH.



2. View of the 1st floor public restrooms.



3. View of the 1st floor hallway by the staff restrooms and kitchenette.



4. Suspect textured surfacing present on the high ceiling in front of the public restrooms.



5. Staff Kitchenette located next to the staff restrooms



6. ACBM sink basin undercoating located in the Kitchenette.

EXAMPLE PICTURES

Site Address: Portsmouth Discovery Center
10 Middle Street
Portsmouth, NH



www.airpf.com
888-SAFE AIR

File No. 199435



7. ACBM 12" tan floor tile with ACBM black mastic in the hallway outside the staff restrooms.



8. ACBM 12" tan floor tile with ACBM black mastic is also present under the non-asbestos blue floor tile.

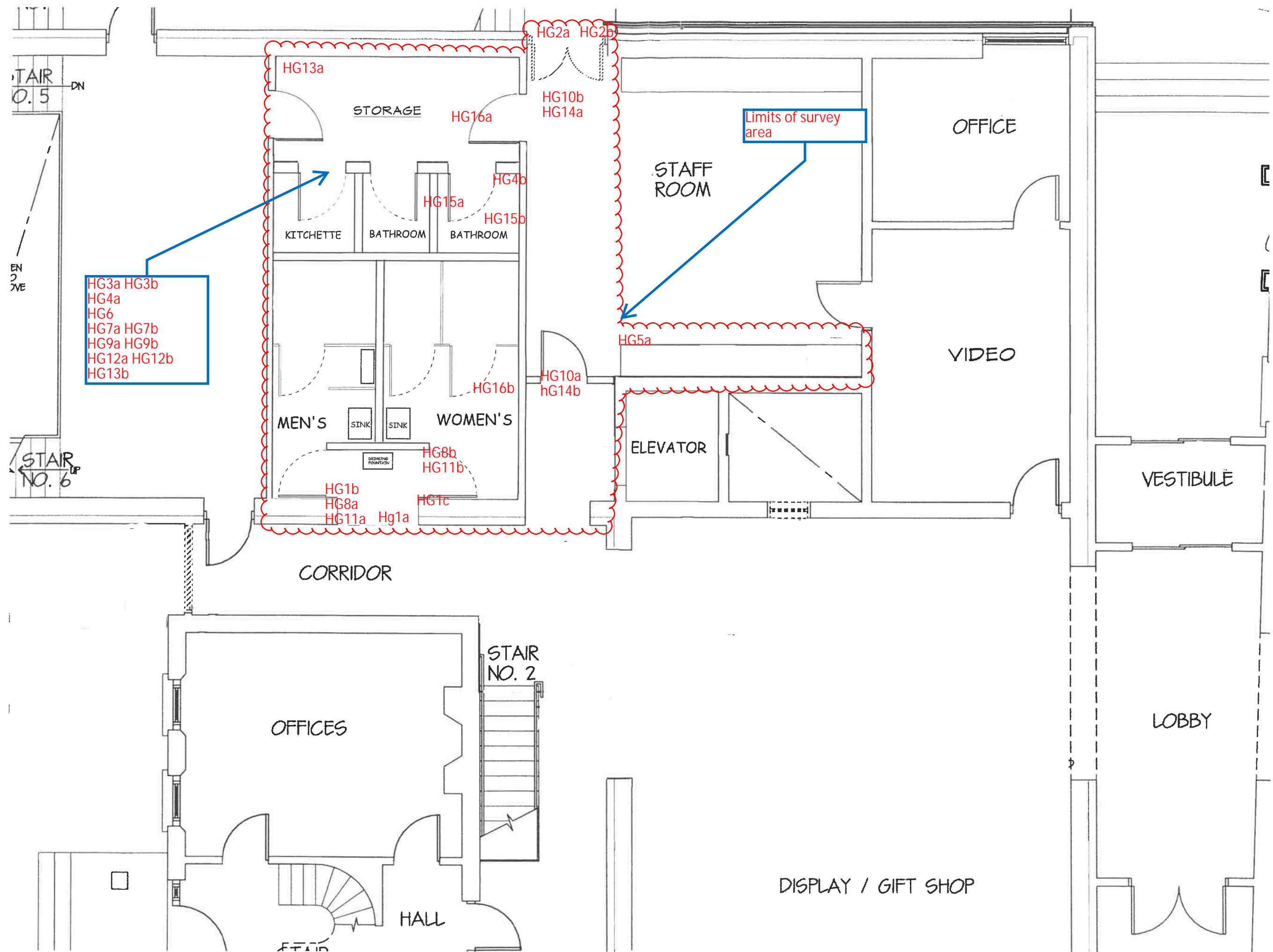
EXAMPLE PICTURES

Site Address: Portsmouth Discovery Center
10 Middle Street
Portsmouth, NH



www.airpf.com
888-SAFE AIR

File No. 199435



EXISTING CONDITIONS

Existing
Conditions

APPENDIX D

Summary of Methodology: Asbestos-Containing Building Materials Survey

EPA accredited inspector(s) surveyed accessible space in the building or site areas included within the RPF Scope of Work (SOW) to identify suspect asbestos-containing building material (ACBM). Suspect ACBM was inventoried and categorized into homogeneous groups of materials. To the extent indicated in the report, samples were then extracted from the different groups of homogeneous materials in accordance with applicable State and federal rules and regulations. For surveys in which the SOW included full inspections of the affect space, sampling methodologies were based on the requirements set forth in 40 CFR Part 763 (EPA) and 29 CFR Part 1926.1101 (OSHA). For preliminary or limited surveys, findings apply to only the affected material or space as indicated in the RPF SOW and Report and additional inspection and testing will be required to satisfy regulatory obligations associated with renovation, demolition, maintenance and other occupational safety and health requirements. Sampling methodologies used are as set forth in 40 CFR Part 763 (EPA):

- Surfacing Material: 3 bulk samples from each homogenous area and/or material that is 1,000 square feet or less. 5 bulk samples from each homogenous area that is greater than 1,000 square feet but less than or equal to 5000 square feet. 7 bulk samples from each homogenous area that is greater than 5,000 square feet.
- Thermal System Insulation: 3 bulk samples from each homogenous area. 1 bulk sample from each homogenous area of patched thermal system insulation if the patched section is less than 6 linear or square feet. Samples sufficient to determine whether the material is ACM from each insulated mechanical system where cement is utilized on tees, elbows, or valves.
- Miscellaneous ACM: 3 samples from each miscellaneous material. 1 sample if the amount of miscellaneous material is less than 6 square or linear feet.

Collected samples were individually placed into sealed containers, labeled, and submitted with proper chain of custody forms to the RPF NVLAP-accredited vendor laboratory. Sample containers and tools were cleaned after each sample was collected. Samples were analyzed for asbestos content using polarized light microscopy (PLM). Although PLM is the method currently recognized in State and federal regulations for asbestos identification in bulk samples, PLM may not be sensitive enough to detect all of the asbestos fibers in certain types of materials, such as floor tile and other nonfriable ACBM. In the event that more definitive results are requested in cases of with negative or trace results of asbestos are detected, RPF recommends that confirmation testing be completed using transmission electron microscopy.

For each homogeneous group of suspect material, a “stop at first positive” (SFP) method may have been employed during the analysis. The SFP method is based on current EPA sampling protocols and means that if one sample within a homogeneous group of suspect material is found to contain >1% asbestos, then further analysis of that specific homogenous group samples is terminated and the entire homogeneous group of material is considered to be ACBM regardless of the other sample results. This is based on the potential for inconsistent mix of asbestos in the product yielding varying findings across the different individual samples collected from the same homogeneous group. Unless otherwise noted in the report, sample groups found to have 1% to <10% asbestos content are assumed to be ACBM; to rebut this assumption further analysis with point count methods are required.

Inaccessible and hidden areas, including but not limited to wall/floor/ceiling cavity space, space with obstructed access (such as fiberglass insulation above suspended ceilings), sub floors, interiors of mechanical and process equipment, and similar spaces were not included in the inspection and care should be used when accessing these areas in the future. Unless otherwise noted in the RPF Report, destructive survey techniques were not employed during this survey.

In the event that additional suspect materials are encountered that are not addressed in this report, the materials should be properly tested by an accredited inspector. For example, during renovation and demolition it is likely that additional suspect material will be encountered and such suspect materials should be assumed to be hazardous until proper inspection and testing occurs.

RPF followed applicable industry standards; however, various assumptions and limitations of the methods can result in missed materials or misidentification of materials due several factors including but not limited to: inaccessible space due to physical or safety constraints, space that is difficult to reach to fully inspection, assumptions regarding the determination of homogenous groups of suspect material, assumptions regarding attempts to conduct representative sampling, and potential for varying mixtures and layers of material sampled not being representative of all areas of similar material. Also reference the Limitations document attached to the report.

Summary of Methodology: Polychlorinated Biphenyls, Mercury and Refrigerants

Various, accessible fluorescent light fixtures were inspected to determine if the ballasts contain a “No PCBs” label. Ballasts that do not have the “No PCBs” label are assumed to contain PCB.

Only limited fixtures were checked based on accessibility and safety concerns. Further inspection will be required during the course of construction, maintenance, renovation and demolition.

Various equipment and machinery within the building may also contain PCB oils. Specific findings relating to such equipment and machinery were not included in the RPF SOW.

It is common to find fluorescent light bulbs, thermostats and switches are present in buildings. RPF performed a visual inspection of specific areas included in the RPF SOW in an attempt to identify such materials. Findings are limited to the specific accessible space accessed by RPF.

Various compressor and refrigerant equipment may be present and is should be assumed that such equipment contains Freon or other chlorofluorocarbons unless otherwise tested or documented. Although general comment may be provided in the RPF Report, the specific identification of all potential Freon and CFCs is not included in the RPF SOW.

The findings may or may not be fully representative of all of the entire building. Confirmation testing and analysis of PCB, refrigerants and mercury was not included in the RPF SOW.

RPF followed applicable industry standards; however, RPF does not warrant or certify that all hazardous material in or on the building has been identified and included in this report. Various assumptions and limitations of the methods can result in missed materials or misidentification of materials due several factors including but not limited to: inaccessible space due to physical or safety constraints, space that is difficult to reach to fully inspection, electrical safety considerations, and assumptions relating to areas or material being representative of other locations which in fact may not be representative. Also reference the Limitations document attached to the report.

LIMITATIONS

1. The observations and conclusions presented in the Report were based solely upon the services described herein, and not on scientific tasks or procedures beyond the RPF Environmental, Inc. Scope of Work (SOW) as discussed in the proposal and/or agreement. The conclusions and recommendations are based on visual observations and testing, limited as indicated in the Report, and were arrived at in accordance with generally accepted standards of industrial hygiene practice and asbestos professionals. The nature of this survey or monitoring service was limited as indicated herein and in the report or letter of findings. Further testing, survey, and analysis is required to provide more definitive results and findings.
2. For site survey work, observations were made of the designated accessible areas of the site as indicated in the Report. While it was the intent of RPF to conduct a survey to the degree indicated, it is important to note that not all suspect ACM material in the designated areas were specifically assessed and visibility was limited, as indicated, due to the presence of furnishings, equipment, solid walls and solid or suspended ceilings throughout the facility and/or other site conditions. Asbestos or hazardous material may have been used and may be present in areas where detection and assessment is difficult until renovation and/or demolition proceeds. Access and observations relating to electrical and mechanical systems within the building were restricted or not feasible to prevent damage to the systems and minimize safety hazards to the survey team.
3. Although assumptions may have been stated regarding the potential presence of inaccessible or concealed asbestos and other hazardous material, full inspection findings for all asbestos and other hazardous material requires the use of full destructive survey methods to identify possible inaccessible suspect material and this level of survey was not included in the SOW for this project. For preliminary survey work, sampling and analysis as applicable was limited and a full survey throughout the site was not performed. Only the specific areas and /or materials indicated in the report were included in the SOW. This inspection did not include a full hazard assessment survey, full testing or bulk material, or testing to determine current dust concentrations of asbestos in and around the building. Inspection results should not be used for compliance with current EPA and State asbestos in renovation/demolition requirements unless specifically stated as intended for this use in the RPF report and considering the limitations as stated therein and within this limitations document.
4. Where access to portions of the surveyed area was unavailable or limited, RPF renders no opinion of the condition and assessment of these areas. The survey results only apply to areas specifically accessed by RPF during the survey. Interiors of mechanical equipment and other building or process equipment may also have asbestos and other hazardous material present and were not included in this inspection. For renovation and demolition work, further inspection by qualified personnel will be required during the course of construction activity to identify suspect material not previously documented at the site or in this survey report. Bordering properties were not investigated and comprehensive file review and research was not performed.
5. For lead in paint, observations were made of the designated accessible areas of the site as indicated in the Report. Limited testing may have been performed to the extent indicated in the text of the report. In order to conduct thorough hazard assessments for lead exposures, representative surface dust testing, air monitoring and other related testing throughout the building, should be completed. This type of in depth testing and analysis was beyond the scope of services for the initial inspection. For lead surveys with XRF readings, it is recommended that surfaces found to have LBP or trace amount of lead detected with readings of less than 4 mg/cm² be confirmed using laboratory analysis if more definitive results are required. Substrate corrections involving destructive sampling or damage to existing surfaces (to minimize XRF read-through) were not completed. In some instances, destructive testing may be required for more accurate results. In addition, depending on the specific thickness of the paint films on different areas of a building component, differing amounts of wear, and other factors, XRF readings can vary slightly, even on the same building component. Unless otherwise specifically stated in the scope of services and final report, lead testing performed is not intended to comply with other state and federal regulations pertaining to childhood lead poisoning regulations.

6. Air testing is to be considered a “snap shot” of conditions present on the day of the survey with the understanding that conditions may differ at other times or dates or operational conditions for the facility. Results are also limited based on the specific analytical methods utilized. For phase contrast microscopy (PCM) total airborne fiber testing, more sensitive asbestos-specific analysis using transmission electron microscopy (TEM) can be performed upon request.
7. For asbestos bulk and dust testing, although polarize light microscopy (PLM) is the method currently recognized in State and federal regulations for asbestos identification in bulk samples, some industry studies have found that PLM may not be sensitive enough to detect all of the asbestos fibers in certain nonfriable material, vermiculate type insulation, soils, surface dust, and other materials requiring more sensitive analysis to identify possible asbestos fibers. In the event that more definitive results are requested, RPF recommends that confirmation testing be completed using TEM methods or other analytical methods as may be applicable to the material. Detection of possible asbestos fibers may be made more difficult by the presence of other non-asbestos fibrous components such as cellulose, fiber glass, etc., by binder/matrix materials which may mask or obscure fibrous components, and/or by exposure to conditions capable of altering or transforming asbestos. PLM can show significant bias leading to false negatives and false positives for certain types of materials. PLM is limited by the visibility of the asbestos fibers. In some samples the fibers may be reduced to a diameter so small or masked by coatings to such an extent that they cannot be reliably observed or identified using PLM.
8. For hazardous building material inspection or survey work, RPF followed applicable industry standards; however, RPF does not warrant or certify that all asbestos or other hazardous materials in or on the building has been identified and included in this report. Various assumptions and limitations of the methods can result in missed materials or misidentification of materials due to several factors including but not limited to: inaccessible space due to physical or safety constraints, space that is difficult to reach to fully inspect, assumptions regarding the determination of homogenous groups of suspect material, assumptions regarding attempts to conduct representative sampling, and potential for varying mixtures and layers of material sampled not being representative of all areas of similar material.
9. Full assessments often requires multiple rounds of sampling over a period of time for air, bulk material, surface dust and water. Such comprehensive testing was beyond the scope of RPF services. In addition clearance testing for abatement, as applicable, was based on the visual observations and limited ambient area air testing as indicated in the report and in accordance with applicable state and federal regulations. The potential exists that microscopic surface dust remains with contaminant present even in the event that the clearance testing meets the state and federal requirements. Likewise for building surveys, visual observations are not sufficient alone to detect possible contaminant in settled dust. Unless otherwise specifically indicated in the report, surface dust testing was not included in the scope of the RPF services.
10. For abatement or remediation monitoring services: RPF is not responsible for observations and test for specific periods of work that RPF did not perform full shift monitoring of construction, abatement or remediation activity. In the event that problems occurred or concerns arouse regarding contamination, safety or health hazards during periods RPF was not onsite, RPF is not responsible to provide documentation or assurances regarding conditions, safety, air testing results and other compliance issues. RPF may have provided recommendations to the Client, as needed, pertaining to the Client’s Contractor compliance with the technical specifications, schedules, and other project related issues as agreed and based on results of RPF monitoring work. However, actual enforcement, or waiving of, contract provisions and requirements as well as regulatory liabilities shall be the responsibility of Client and Client’s Contractor(s). Off-site abatement activities, such as waste transportation and disposal, were not monitored or inspected by RPF.
11. For services limited to clearance testing following abatement or remediation work by other parties: The testing was limited to clearance testing only and as indicated in the report and a site assessment for possible environmental health and safety hazards was not performed as part of the scope of this testing. Client, or Client’s abatement contractor as applicable, was responsible for performing visual inspections

of the work area to determine completeness of work prior to air clearance testing by RPF.

12. For site work, including but not limited to air clearance testing services, in which RPF did not provide full site safety and health oversight, abatement design, full shift monitoring of all site activity, RPF expresses no warranties, guarantees or certifications of the abatement work conducted by the Client or other employers at the job site(s), conditions during the work, or regulatory compliance, with the exception of the specific airborne concentrations as indicated by the air clearance test performed by RPF during the conditions present for the clearance testing. Unless otherwise specifically noted in the RPF Report, visual inspections and air clearance testing results apply only to the specific work area and conditions present during the testing. RPF did not perform visual inspections of surfaces not accessible in the work area due to the presence of containment barriers or other obstructions. In these instances, some contamination may be present following RPF clearance testing and such contamination may be exposed during and after removal of the containment barriers or other obstructions following RPF testing services. Client or Client's Contractor is responsible for using appropriate care and inspection to identify potential hazards and to remediate such hazards as necessary to ensure compliance and a safe environment.
13. The survey was limited to the material and/or areas as specifically designated in the report and a site assessment for other possible environmental health and safety hazards or subsurface pollution was not performed as part of the scope of this site inspection. Typically, hazardous building materials such as asbestos, lead paint, PCBs, mercury, refrigerants, hydraulic fluids and other hazardous product and materials may be present in buildings. The survey performed by RPF only addresses the specific items as indicated in the Report.
14. For mold and moisture survey services, RPF services did not include design or remediation of moisture intrusion. Some level of mold will remain at the site regardless of RPF testing and Contractor or Client cleaning efforts. RPF testing associated with mold remediation and assessments is limited and may or may not be representative of other surfaces and locations at the site. Mold growth will occur if moisture intrusion deficiencies have not been fully remedied and if the site or work areas are not maintained in a sufficiently dry state. Porous surfaces in mold contaminated areas which are not removed and disposed of will likely result in future spore release, allergen sources, or mold contamination.
15. Existing reports, drawings, and analytical results provided by the Client to RPF, as applicable, were not verified and, as such, RPF has relied upon the data provided as indicated, and has not conducted an independent evaluation of the reliability of these data.
16. Where sample analyses were conducted by an outside laboratory, RPF has relied upon the data provided, and has not conducted an independent evaluation of the reliability of this data.
17. All hazard communication and notification requirements, as required by U.S. OSHA regulation 29 CFR Part 1926, 29 CFR Part 1910, and other applicable rules and regulations, by and between the Client, general contractors, subcontractors, building occupants, employees and other affected persons were the responsibility of the Client and are not part of the RPF SOW.
18. The applicability of the observations and recommendations presented in this report to other portions of the site was not determined. Many accidents, injuries and exposures and environmental conditions are a result of individual employee/employer actions and behaviors, which will vary from day to day, and with operations being conducted. Changes to the site and work conditions that occur subsequent to the RPF inspection may result in conditions which differ from those present during the survey and presented in the findings of the report.