



City of Rockville
Rockville, Maryland

INVITATION FOR BIDS # 07-25

TWINBROOK COMMUNITY CENTER AND ANNEX RESTROOM RENOVATION

**Bids Due by 2:00 PM (EDT)
March 18, 2025**

ISSUED BY:
Procurement Division
City of Rockville, City Hall
111 Maryland Avenue, 1st Floor
Rockville, Maryland 20850
Phone: (240) 314-8430
Fax: (240) 314-8439

A 5% Bid Bond is required for this Invitation for Bid

Any individual with a disability who would like to receive the information in this publication in another form may contact the ADA Coordinator at
240-314-8100, TDD 240-314-8137

Project Funded Via Maryland Department Of General Services Capital Grant

There are no additional State or Federal requirements associated with this work as the City's standard requirements, terms and conditions meet or exceed those contained in the grant. Costs associated with the Contractor observing and complying with all Federal, State, County and City laws, statutes, rules, and regulations that affect the work to be done, as well as furnishing any and all documents, materials, or data developed as a result of any subsequent contract that may be requested by the City for reporting to State and Federal agencies shall be all inclusive of the bid price.

MFD-V Outreach Program

It is the intent of the City of Rockville to increase opportunities for minority, female, disabled or veteran (MFD-V) owned businesses to compete effectively at supplying goods, equipment, and services to the City, within the constraints of statutory purchasing requirements, departmental needs, availability, and sound economical considerations, including subcontracting or mentoring opportunities. Suggested changes and MFD-V enhancements to this solicitation's requirements for possible consideration and/or inclusion in future solicitations are strongly encouraged. Any questions regarding MFD-V outreach or questions/concerns regarding the City's bidding process should be addressed to procurement@rockvillemd.gov or 240-314-8430.



Statement of "No Bid Submittal"

If you do not intend to submit on this requirement, please complete and return this form prior to date shown for receipt of bids to the buyer listed in this IFB by **email only to jpierson@rockvillemd.gov**.

I/WE HAVE DECLINED TO BID ON **IFB # 07-25**, titled **Twinbrook Community Center and Annex Restroom Renovation Invitation for Bid** for the following reason(s): [Please place a check mark (ü) next to the reason(s) as applicable]

(ü)	Reason
	Proposal requirements too "restrictive".
	Insufficient time to respond to the Invitation for Bids.
	We do not offer this service.
	Our schedule would not permit us to perform.
	Unable to meet requirements.
	Unable to meet insurance or bond requirements.
	Scope of Services unclear (please explain below).
	Other (please specify below).

REMARKS:

Are you a Minority, Female, or Disabled (MFD) business? _____ Yes _____ No

Company Name: _____

Mailing Address: _____

Telephone Number: _____ Email Address: _____

Authorized Signatory

Printed Name

Title

Date



**CITY OF ROCKVILLE
ROCKVILLE, MARYLAND**

INVITATION FOR BIDS # 07-25

**TWINBROOK COMMUNITY CENTER
AND
ANNEX RESTROOM RENOVATION**

TABLE OF CONTENTS

Section	Contents
I	Announcement, Description and General Information
II	General Terms, Conditions, and Instructions to Bidders
III	Special Provisions
IV	Technical Specifications
V	Bid Packet, Proposal Forms and Sample Documents
VI	Appendices and Permits Appendix A Montgomery County Department of Environmental Protection Noise Control Ordinance
VII	Drawings



CITY OF ROCKVILLE
ROCKVILLE, MARYLAND

INVITATION FOR BIDS # 07-25

**TWINBROOK COMMUNITY CENTER
AND
ANNEX RESTROOM RENOVATION**

1. **SECURED BIDS** will be received electronically via a City designated bid receipt software solution until **TUESDAY, MARCH 18, 2025 at 02:00 PM (EDT)**. The bidder assumes full responsibility for the timely delivery of a bid via the designated solution. Bids delivered in any other fashion will not be considered. Properly submitted bids will be opened in a virtual environment after the time set for receipt of bids and will be read aloud via a City telepresence software solution at the phone number and/or web address provided by the City and contained within this solicitation.

Submission of a bid electronically is consent by the bidder to conduct any or all elements of the procurement by electronic means, in accordance with the terms of this invitation for bid.

Bids presented after the bid receiving deadline will not be received for any reason. The official time clock for receiving bids will be that of the City's third-party software solution provider's computer server system.

ATTENTION: BIDDERS ARE HEREBY NOTIFIED THAT THE CITY'S THIRD-PARTY SOFTWARE SOLUTION PROVIDER'S COMPUTER SERVER TIME MAY DIFFER FROM THAT OF OTHER ELECTRONIC DEVICES, COMPUTER SOFTWARE AND COMPUTER HARDWARE THAT MAY BE USED TO ELECTRONICALLY SUBMIT THE BID. BIDDERS ARE RESPONSIBLE FOR ALLOWING ADEQUATE TIME TO SUCCESSFULLY DELIVER THE BID TO THE REQUIRED ELECTRONIC LOCATION BY THE REQUIRED TIME.

2. **PRE-BID CONFERENCE**

A virtual, telepresence pre-bid meeting will be held on **TUESDAY, FEBRUARY 25, 2025, AT 03:30 PM (EDT)**. Individuals interested in viewing the project location may participate in the site visit referenced below after the pre-bid meeting. Bidders must register below in order to attend the meeting. This meeting is not mandatory; however, bidders are strongly encouraged to attend.

Register for the Virtual Pre-bid Meeting Here: [Registration Link](#)

3. **SITE VISIT**

An opportunity to physically visit the site will be afforded from **WEDNESDAY, FEBRUARY 26, 2025 THROUGH FRIDAY, FEBRUARY 28, 2025, FROM 08:00 AM (EDT) TO 05:00 PM (EDT)**. Individuals interested in viewing the project location during these times may contact Noel Gonzalez, Facilities Property Manager at ngonzalez@rockvillemd.gov or 240-314-8728 in the event directions to the site are required. Site visit participants will be required to sign-in prior to entering the site where individual participants assume complete responsibility and liability in all matters regarding their site visit.

4. DEADLINE FOR QUESTIONS

Questions pertaining to this bid may be directed to Jonathan Pierson, Assistant Director via the City's Collaboration Portal **only** at <https://contracts.rockvillemd.gov/gateway/Default.aspx> no later than **THURSDAY, MARCH 06, 2025, AT 10:00 AM (EDT)**. Oral answers to questions relative to interpretation of specification or the bid process will not be binding on the City.

5. ADDENDUMS

Oral answers to questions relative to interpretation of specifications or the proposal process will not be binding on the City.

To ensure fair consideration for all offerors, any interpretation made to prospective offerors will be expressed in the form of an addendum to the specifications, if such information is deemed necessary for the preparation of proposals or if the lack of such information would be detrimental to the uninformed offeror. Such addendums, if issued, will posted at City's Collaboration Portal listed below:

<https://contracts.rockvillemd.gov/gateway/Default.aspx>

Please note, that it is the respondent's responsibility to check this site frequently for Addendums, which may impact pricing, this documents requirements, terms and/or conditions. Failure to sign and return an Addendum with your response may result in disqualification of proposal.

6. PROJECT DESCRIPTION

This project includes work at the Twinbrook Community Center and Annex located at 12920 Twinbrook Parkway Rockville, MD 20850. This project includes renovation of existing restrooms in the Twinbrook annex building and the main community recreation center. The work in the Twinbrook Annex includes conversion of both the men's and women's restrooms into (3) separate ADA accessible gender-neutral restrooms and a separate electrical room.

In the main community recreation center the work includes the conversion of an existing office space and janitorial closet into an ADA gender neutral restroom with a shower. Work in both of these areas includes removal and installation of new plumbing fixtures, and electrical and mechanical work where affected by modified wall layouts.

7. SUMMARY OF WORK

Work includes renovations in both buildings located within the Twinbrook Community Recreation Facility, the primary larger recreation building and the smaller annex building.

In the primary building the scope of work involves renovating an existing office and adjacent janitor's closet to become a new single use gender neutral restroom with a separate shower area. Demolition includes, but is not limited to, the removal of an existing partition, removal of doors and frames, demolition of the exiting slab on grade as required for the installation of new plumbing lines and a new shower floor, removal of floor and ceiling finishes, removal of a janitor's closet mop basin, removal of light fixtures, an electric heater, ceiling supply, return and exhaust diffusers and associated branch ductwork, sprinkler heads and branch lines, and other items as required for the new work.

The new work in the primary building includes but is not limited to the installation of new partitions, infill of openings, new doors, installation of privacy window film, restroom fixtures and accessories, a new shower, lockers, bench, new ceiling, wall and floor finishes, light fixtures, ceiling supply and exhaust diffusers and associated branch ductwork, sprinkler heads and branch lines, and other items as required for the new work.

In the annex building the scope of work involves converting the existing men's and women's rooms into three gender neutral restrooms, as well as a separate electrical closet. Demolition includes, but is not limited to, the removal of existing partitions, removal of doors and frames, removal of toilet partition systems,

demolition of the exiting slab on grade as required for the installation of new plumbing lines, removal of ceiling finishes, removal of light fixtures, ceiling supply and exhaust diffusers and associated branch ductwork and other items as required for the new work.

The new work in the annex building includes but is not limited to the installation of new partitions, infill of openings, new doors, restroom fixtures and accessories, new ceiling and wall finishes, light fixtures, ceiling supply and exhaust diffusers and associated branch ductwork, and other items as required for the new work. The annex building scope also includes two add alternates-one for the installation of an adult changing station, and the other for the replacement of existing ceramic tile wall and floor finishes.

8. PROJECT DURATION

The duration of all these tasks shall not exceed **120** days from the Notice to Proceed. NOTE that the facility must always remain open and accessible to the public. All mechanical, electrical, and plumbing shutdowns must be coordinated 15 days in advance.

9. PROJECT CLASSIFICATION

The estimated cost/classification of this project is within the range of \$100,000 to \$500,000 (Class B). This range is in accordance with project classifications established by the State of Maryland DGS.

10. BID SECURITY

Bids must be accompanied by an electronic copy of the Bid security made payable to the Mayor and Council of Rockville in an amount of five percent (5%) of Bidder's Total Bid Price and in the form of a Bid Bond (AIA Bid bond form is acceptable) or a certified check, where the original security instrument must be mailed to City of Rockville, Procurement Division, 111 Maryland Avenue, Rockville, Maryland 20850, referencing the solicitation number. The City reserves the right to disqualify any bid, in any instance, where the City cannot locate the mailed, original security instrument. The City shall not be liable for any certified checks it cannot locate, or in any instance where a certified check is cashed by any individual not employed by the City of Rockville.

11. AGREEMENT/PERFORMANCE & PAYMENT BONDS

The successful contractor shall be required to complete and electronically return a copy of the City's Standard Form of Agreement along with Performance and Payment Bonds in the amount of 100% of the Contract award within fifteen days after the date of issuance (samples attached), where two (2) sets of the original agreement and original bonds must be mailed to City of Rockville, Procurement Division, 111 Maryland Avenue, Rockville, Maryland 20850. No other form of performance or payment security will be permitted. Failure by the contractor to provide both the electronic versions and original versions of the agreement or bonds, as required, shall be just cause for annulment of the award and the forfeiture of the Bid Guarantee which shall become the property of the City, not as a penalty but in liquidation of damages sustained. Any instance where the City cannot locate the mailed versions of the agreement or bonds shall be just cause for annulment of the award and the forfeiture of the Bid Guarantee which shall become the property of the City, not as a penalty but in liquidation of damages sustained.

12. INSURANCE

The successful contractor shall be required to electronically furnish a certificate of insurance to include endorsements for additional insured and waiver of subrogation requirements within fifteen days after the date of request by the City. Failure by the contractor to provide insurance shall be just cause for annulment of the award and the forfeiture of the Bid Guarantee which shall become the property of the City, not as a penalty but in liquidation of damages sustained.

13. SUBMISSION

All bid forms and documents must be electronically filled out, signed, and submitted via one combined pdf document using the City's Collaboration Portal **only** at:

<https://contracts.rockvillemd.gov/gateway/Default.aspx>

At a minimum the file name of the pdf document must contain the Bid Number, Bidders Name and Bid Due Date.

A virtual, telepresence bid opening will be held a few minutes after the bid submittal due date and time. Individuals interested in attending the virtual bid opening must register below:

Register for Virtual Bid Opening Here: [Registration Link](#)

14. SUBMITTALS

The following information must be submitted with the bid, **where failure to submit requested items may result in rejection of the bid:**

- Bid Proposal Forms
- A certified check or bid bond must be in the amount of five percent (5%) of the total bid amount, made payable to the Mayor and Council of Rockville as in General Conditions and Inspections to Bidders, #24.
- If the bidder intends to subcontract any or part of the work, then the bidder must identify and include references for each qualified subcontractor, together with a description of the proposed subcontract work. This evidence shall be submitted with the bid. A minimum of three references shall be provided; additional project references may be required to meet all the requirements.

15. ADMINISTRATIVE BIDDING REQUIREMENTS AND INSTRUCTIONS

a. Procurement Rules:

The City of Rockville has established for purposes of this Invitation for Bid that the words “shall”, “must”, or “will” are equivalent in this IFB and indicate a mandatory requirement or condition, the material deviation from which will not be waived by the City. A deviation is material if, in the City’s sole discretion, the deficient response is not in substantial accord with this IFB’s mandatory requirements.

The words “should” or “may” are equivalent in this IFB and indicate very desirable conditions, or requirements but are permissive in nature. Deviation from, or omission of, such a desirable condition or requirement will not in and of itself cause automatic rejection of a bid proposal, but may result in being considered as not in the best interest of the City of Rockville.

To be considered for an award, the Bidder must agree to abide by each mandatory requirement included in this IFB.

b. Definitions:

The term “IFB” means this invitation for you, the Bidder, to make an offer to the City of Rockville.

The terms “**bid**” and “**bid proposal**” means the offer submitted by you, the Bidder.

The term “**bidder**” means the entity making an offer to the City of Rockville in response to this invitation.

The term “**City**” means the City of Rockville.

The term “**Contractor**” means a bidder that is awarded a contract as a result of this Invitation.

The term “**day**” means calendar day unless otherwise specified in the document.

The term “**dollar**” and the symbol “\$” mean United States of America dollars.

The term “**Engineer**” means the design professional responsible for the specifications and plans.

The acronyms “**MDSHA**” and “**SHA**” stand for the Maryland State Highway Administration.

The term “**Project Manager**” means the City of Rockville person managing the project for the City.

The terms “**you**” and “**your**” means the same as the term “bidder” above.

All references to a time of day are references to the time in Montgomery County, Maryland, USA.

c. Special Responsibility:

In addition to the evaluation of responsibility listed in Section II – Section II: GENERAL CONDITIONS AND INSTRUCTIONS TO BIDDERS CONSTRUCTION 3/2022, the City will also evaluate each bidder’s apparent special responsibility based upon the information provided by the bidder in its Bidder Questionnaire, from information provided by references, and on other investigations that the City may conduct. The bidder’s safety program and records are also a factor in determining this special responsibility.

The Bidder should carefully and thoroughly complete all sections of the Bidder Questionnaire and return it with the Bidder’s bid proposal.

If the City cannot readily determine from the Bidder Questionnaire and references that the Bidder is qualified and competent to successfully accomplish this project within the required time, the City will determine that the Bidder is non-responsible and its bid will not be considered for award.

The City reserves the right to reject the bid of a Bidder who has previously failed to satisfactorily perform or complete in a timely manner any similar type contract with any governmental or quasi-governmental agency.

d. Evaluation of Bids:

The City will review each bid proposal received and accepted prior to the official closing date and time for responsiveness:

Has the Bidder conformed to all requirements of this IFB?

Are all forms properly signed and sealed as required?

Are all required documents included with the bid proposal package?

Did the Bidder take any exceptions to the requirements?

e. Price Reasonableness and Price Realism Reviews:

The Director of Procurement will have all price proposals analyzed against City’s initial price estimate for price reasonableness (price too high) and price realism (price too low);

The Director of Procurement may have additional confidential price analysis(es) conducted on any price proposal.

If based upon the price analysis, the Director of Procurement determines that the price proposed appears unreasonable or unrealistic the Director of Procurement will require that the Bidder submit documentation justifying the bid price(s) proposed.

If the Bidder's justification does not satisfy the Director of Procurement, and, if the award of the contract to the Bidder would result in an advantage to the Bidder with a corresponding disadvantage to the City, or, if the competitive bidding process is jeopardized, then Director of Procurement will reject the bid proposal as non-responsive in order to protect the public interest.

f. Unbalanced Bid:

An unbalanced bid is a bid with line items or unit prices with an extreme variation from the City's estimate, or where obvious unbalancing of unit prices has occurred.

If the Director of Procurement determines that the bid appears to be unbalanced, the Director of Procurement will require that the Bidder submit documentation justifying the bid price(s) proposed.

If the Bidder's justification does not satisfy the Director of Procurement, and, if the award of the contract to the Bidder would result in an advantage to the Bidder with a corresponding disadvantage to the City, or, if the competitive bidding process is jeopardized, then the Director of Procurement will reject the bid proposal as non-responsive in order to protect the public interest.

g. Award of Contract:

Award will be made to lowest responsive and responsible bidder(s) complying with all provisions of the Invitation for Bid provided the price is reasonable and in the best interest of the City to accept. The City reserves the right not to award or use any bid alternatives when determining the low bid value. In the event the City decides to award any bid alternatives, then the alternative bid item(s) selected will be used in determining the low bid value.

IF the City of Rockville awards a contract as the result of this IFB, the City intends to award it to a single bidder based upon the total lowest responsive and responsible bid.

Your bid proposal is a binding offer to the City. The City will consider the bid proposal (offer) that you, the Bidder, make to the City as a binding offer for not less than 90 calendar days from the IFB closing date. The City may request an extension on the time to award a contract, and, you have the right to accept or decline such a request. The City will consider the signed bid proposal as an offer by you and such offer shall be judged accepted by the City only in accordance with all requirements listed below.

- The City is not obligated to make any award as a result of this IFB.
- The City has the sole discretion and reserves the right to cancel this IFB, and to reject any and all bids, to waive any and all informalities and/or minor irregularities, or to re- advertise with either the identical or revised scope of work, if it is judged to be in the City's best interests to do so.
- In the event of default by the awarded Bidder, the City reserves the right to award a contract to the Bidder with the next lowest priced responsive and responsible bid proposal without any further notice or competition.

- The City reserves the right to reject any bid proposal determined by the Director of Procurement to be inadequate or unacceptable.

h. Acceptance of Offer:

A bid proposal / offer will be considered accepted by the City and a contract formed between the City and the Bidder **ONLY AFTER ALL** the following actions have been completed:

- The contract document(s) has been formally and legally approved, signed by the Bidder's authorized agent, and returned to the Director of Procurement; and
- The certificate of insurance and all endorsements have been received and approved by the City's Risk Manager; and
- The proposed award has been properly approved by the City of Rockville Mayor and Council; and
- The contract document has been formally and legally approved and counter-signed by the City Manager.

i. Licenses/Certificates:

The City reserves the right to require documentation that each Bidder is an established business and is abiding by the Ordinances, Regulation, and Laws of their community and the State of Maryland.

If you are required by any regulatory agency to maintain professional license or certification to provide any product and/or service solicited under this IFB, the City reserves the right to require you to provide documentation of your current license and/or certification before considering your bid proposal and/or before awarding a contract.

If you fail to keep your required license and/or certification current and in force for the term of the contract and any extension, the City will deem you to be in breach of contract and will take all appropriate actions.

j. Minimum Bidder Qualifications:

The Bidder and any proposed subcontractor(s) shall be properly licensed to conduct the project work in Montgomery County, Rockville, Maryland.

A bidder must provide written evidence of at least 5 years prior experience with the scope of work as detailed in the specifications.

If the Bidder intends to subcontract any or part of the work, then the Bidder must identify and include references for each qualified subcontractor, together with a description of the proposed subcontract work. This evidence shall be submitted with the bid, or the City, at its discretion, may determine the bid to be unresponsive. A minimum of three references shall be provided; additional project references may be required to meet all the requirements. The Bidder shall satisfy the City that it and any subcontractors have been engaged in the particular skills required to perform the work for at least 5 years and have established a successful performance record.

Subcontractors shall conform in all respects to the applicable provisions specified for the prime contractor and shall be subject to approval by the City. If a subcontractor or proposed subcontractor is determined to be unacceptable to the City, the Contractor shall substitute an acceptable subcontractor with no change in any contract unit prices or overall contract sum.

The City reserves the right to conduct such investigations as it deems necessary to determine the ability of the Bidder to successfully and timely perform the work. The City reserves the right to request additional information from the Bidder. The City may reject any bid where an investigation of the evidence or information submitted by the Bidder does not satisfy the City that the Bidder is qualified to properly carry out the terms of the Bid Document.

If your organization is listed on the U.S. Excluded Parties List <https://sam.gov/on> the Task Order official closing date or is put on the Excluded Parties List at any time prior to the formal award of the contract, the Director of Procurement shall immediately determine your organization as non-responsible and your bid proposal will be rejected.

k. Alternate / Equivalent Equipment or Material:

Alternate / Equivalent Item Proposed with Bid:

- If you propose using any item of equipment or material different from that specified in these documents, you must include a complete set of specifications and justifications with your bid proposal package to substantiate the equivalency or superiority of the proposed alternate item. You must clearly identify each proposed alternate item in the “Exceptions” section of your bid proposal. Neither the City nor the Engineer will conduct research to find specifications for any proposed alternate item.
- The Engineer will review the submitted documentation for each proposed alternate item to determine its equivalency to the minimum required specifications.
- If the Engineer concurs that the item(s) is(are) equivalent, then your bid proposal will be considered for award.
- If the Engineer determines that the proposed alternate item is not equivalent, then your bid proposal will be rejected as non-responsive and will not be considered for award.

Alternate / Equivalent Item Proposed after Award:

- If you propose using any item of equipment or material different from that specified in these documents, you shall submit a complete set of specifications and justifications as an Engineering Change Request to the Project Manager.
- The Project Manager will review the materials and submit a request to the Engineer for a price proposal to review the change request.
- The Project Manager will submit the Engineer’s price proposal to you for review and approval / rejection.
 - If within the time specified by the Project Manager, you approve the Engineer’s price proposal to review the proposed change, the amount of the Engineer’s price proposal will be deducted from your total contract

price. The Engineer will then analyze your requested change and make a decision which will be communicated to you by the Project Manager. If the change is approved, the City will modify the contract documents to reflect the change(s).

- If you do not respond within the time specified by the Project Manager, or, you do not approve the Engineer's price proposal, then the Engineering Change Request will be considered withdrawn.

16. ENVIRONMENTAL IMPACT

It is the intent of the City of Rockville to purchase goods, equipment, and services having the least adverse environmental impact, within the constraints of its codified purchasing requirements, departmental needs, availability, and sound economic considerations. Suggested changes and environmental enhancements for possible inclusion in future revisions of this specification are encouraged.

17. NOTICE TO BIDDERS

Companies not incorporated in the State of Maryland must be in compliance with the State of Maryland Code of Regulations Title 21, State Procurement Regulations in order to enter into a contract with the City. "Pursuant to 7-201 et seq. of the Corporations and Associations, Article of the Annotated Code of Maryland corporations not incorporated in the State, shall be registered with the Department of Assessments and Taxation, 301 West Preston Street, Baltimore, Maryland 21201 before doing any interstate or foreign business in this state. Before doing any intrastate business in this state, a foreign corporation shall qualify with the Department of Assessments and Taxation."

18. US TREASURY IDENTIFICATION NUMBER

Bidders must supply with their bids their U.S. Treasury Department Employers' Identification Number as such number is shown on their Employer's quarterly Federal Tax Return (U.S. Treasury Department Form No. 941). This number shall be inserted on the Bid Sheet in the space provided.

19. QUALIFICATION TO CONTRACT WITH PUBLIC BODY

Bidders must be qualified to bid in the State in accordance with Section 14-308 of the State Finance and Procurement Article of the Annotated Code of Maryland which ordains that any person convicted of bribery (upon acts committed after July 1, 1997) in furtherance of obtaining a contract from the state or any subdivision of the State of Maryland shall be disqualified from entering into a contract with the City.

20. DISABILITY INFORMATION

ANY INDIVIDUALS WITH DISABILITIES WHO WOULD LIKE TO RECEIVE THE INFORMATION IN THIS PUBLICATION IN ANOTHER FORM MAY CONTACT THE ADA COORDINATOR AT 240-314-8100 TDD 240-314-8137.



**CITY OF ROCKVILLE
MARYLAND
GENERAL CONDITIONS AND INSTRUCTIONS TO BIDDERS
CONSTRUCTION 3/2022**

1. **TERMS AND CONDITIONS** The terms and conditions of this document govern in event of conflict with any terms of the bidder's proposal and are not subject to change by reasons of written or verbal statement by the contractor unless accepted in writing. Words and abbreviations which have well known technical or trade meanings are used in accordance with such meanings.
2. **PRE-BID MEETING** A virtual, telepresence pre-bid meeting may be held for the purpose of describing the project and for answering any questions prospective bidders may have. If applicable, time and date will be shown on the bid announcement page.
3. **SUBMISSION OF BID** All bids are to be submitted electronically, in a pdf format file, via a City designated bid receipt software solution. File name of the pdf document must contain the Bid Number, Bidders Name and Bid Due Date. The following forms must be submitted:
 - Bid proposal page(s)
 - Non-collusion/non-conviction affidavit
 - Bid Bond
 - Reference sheet
 - Other forms as required in the bid document.

The bid proposal form must be filled out and submitted electronically. Conditional bids and bids containing escalator clauses will not be accepted. All bids must be regular in every respect and no interlineation, exclusions, or special conditions shall be made or included. Bids must contain an electronic or scanned signature, in the space provided, of an individual authorized to bind the bidder.

4. **LATE BIDS** It is the bidder's responsibility to assure delivery of the bid at the proper time via the designated electronic, software solution. Bids delivered in any other fashion will not be considered. All bids will be publicly opened in a virtual environment after the time set for receipt of bids and read aloud via a City telepresence software solution. Bidders may attend bid openings at the phone number and/or web address provided by the City.
5. **ADDENDUM** In the event that any addenda to this solicitation are issued, all solicitation terms and conditions will retain in effect unless they are specifically changed in the addendum. It is the responsibility of the bidder to make inquiry as to addenda issued. Oral answers to questions relative to interpretation of specifications or the proposal process will not be binding on the City.

Such addendums, if issued, will be posted via the city's designated electronic, software solution.

Please note, that it is the bidder's responsibility to check this site frequently for Addendums, which may impact pricing, this document's requirements, terms and/or conditions. Failure to acknowledge an addendum on the bid proposal form or to sign and return an Addendum with your response may result in disqualification of proposal.

6. **BID OPENING** All bids received in response to an Invitation for Bid will be opened at the date, time and place specified and publicly read via a City telepresence software solution. A tabulation of bids received are posted using the City's designated electronic software solution.
7. **ACCEPTANCE OF BIDS** Unless otherwise specified in the Invitation for Bid documents, the City will accept or reject any or all bids or any or all items within ninety (90) days after the date of bid opening. Bids may not be withdrawn during that period.
8. **BID WITHDRAWAL** Bids may be electronically withdrawn (deleted) or modified by deleting the initial file uploaded and replacing it with a modified file using the City's electronic, software solution before the time specified for bid opening. Requests received after bid opening will not be considered.

9. **BID AWARD** Unless otherwise specified in the Invitation for Bid documents, award will be made to lowest responsive and responsible bidder complying with all provisions of the Invitation for Bid, provided the price is reasonable and in the best interest of the City to accept. The City reserves the right to award by individual commodities/services, group, all or none or any combination thereof. When a group is specified, all items in the group must be bid.

In determining the responsibility of a bidder, the following criteria will be considered:

- a. The ability, capacity and skill of the bidder to perform the contract or provide the services required;
- b. Whether the bidder can perform the contract or provide the service promptly, or within the time specified, without delay or interference;
- c. The character, integrity, reliability, reputation, judgment, experience and efficiency of the bidder;
- d. The quality of performance on previous contracts or services;
- e. The previous and existing compliance by the bidder with laws and ordinance relating to the contract or service;
- f. The sufficiency of the financial resources and ability of the bidder to perform the contract or provide the service;
- g. The quality, availability and adaptability of the goods or services to the particular use required;
- h. The ability of the bidder to provide future maintenance and service for the use of the subject of the contract;
- i. Whether the bidder is in arrears to the City or a debt or contract or is in default on a surety to the City;
- j. Such other information as may be secured by the City having a bearing on the decision to award the contract.

10. **ELECTRONIC PAYMENT OPTION**

The Vendor ACH Payment Program of the City allows payments to be deposited directly to a designated financial institution account. Funds will be deposited into the account of your choice automatically and on time. All transactions are conducted in a secure environment. The program is totally free as part of the Finance Department's efforts to improve customer services.

11. **SENSITIVE DOCUMENTS**

All project participants needing either electronic or hardcopy documents dealing with critical facilities or sensitive information will be required to make application with and receive approval from the City prior to receiving this information. Permission to receive said documents (herein referred to as "sensitive") will pertain only to the individual approved. Sensitive documents (either electronic or hardcopy documents dealing with critical facilities or sensitive information) received from the City must be handled consistent with the terms of non-disclosure required for application. Contractor is responsible to restrict use of sensitive documents to project participants only and shall take appropriate measure to prevent distribution of sensitive document to anyone inside or outside of the Contractor's company except Contractor's project participants. After completion of the project, all sensitive documents remaining in the Contractor's possession shall continue to be governed under the terms of non-disclosure and must continue to be stored in a secure manner. After such records are no longer needed for record purposes, the records shall be destroyed or returned to the City.

Where services require the Contractor to access the City's electronic information resources and/or its electronic data assets, the Contractor shall adhere to all requirements, terms and conditions of the City's Contractor/Vendor On-Site and Remote Access Confidentiality Agreement, which can be viewed at the following web address:

<https://www.rockvillemd.gov/documentcenter/view/36407>

12. **DOCUMENTS, MATERIALS AND DATA** All documents, materials, or data developed as a result of this contract are the City's property. The City has the right to use and reproduce any documents, materials, and data, including confidential information, used in the performance of, or developed as a result of this contract. The City may use this information for its own purposes, including reporting to state and federal agencies. The contractor warrants that it has title to or right to use all documents, materials or data used or developed in connection with this contract. The Contractor must keep confidential all documents, materials and data prepared or developed by the contractor or supplied by the City.
13. **ERRORS IN BIDS** When an error is made in extending total prices, the unit price will govern. Erasures in bids must be initialed by the bidder. Carelessness in quoting prices or in preparation of the bid will not relieve the bidder from performing the contract. Errors discovered after public opening cannot be corrected and the bidder will be required to perform if the bid is accepted.
14. **MISTAKES** Bidders are expected to be thoroughly familiar with all bid documents, including all addenda. No consideration will be granted for any alleged misunderstanding of the intent of the contract documents. In the process of assembling and binding the bid documents individual pages or drawings may have been inadvertently omitted. Each bidder shall carefully and thoroughly examine these bid documents for completeness. No claim of any bidder will be allowed on the basis that these bid documents are incomplete.
15. **PRICES** Bids must be submitted on a firm, fixed price, F.O.B. destination basis only unless otherwise specified herein.

16. **PROMPT PAYMENT DISCOUNTS** All discounts other than prompt payment are to be included in the bid price. Prompt payment discounts will be considered in the evaluation of your bid if the discount on payment is not conditioned on payment being made in less than thirty (30) days from receipt of invoice.
17. **BIDDER'S PAYMENT TERMS** The City will reject as non-responsive a bid under this solicitation, which is conditioned on payment of proper invoices in less than thirty (30) days. However, this does not preclude a bidder from offering a prompt payment discount for payment of proper invoices in less than thirty (30) days.
18. **INTEREST IN MORE THAN ONE BID AND COLLUSION**
Multiple bids uploaded/received in response to a single solicitation from an individual, firm, partnership, corporation, affiliate, or association under the same or different names will be rejected. Reasonable grounds for believing that a bidder is interested in more than one bid for a solicitation both as a bidder and as a subcontractor for another bidder will result in rejection of all bids in which the bidder is interested. However, a firm acting only as a subcontractor may be included as a subcontractor for two or more bidders submitting a bid for the work. Any or all bids may be rejected if reasonable grounds exist for believing that collusion exists among any bidders. Bidders rejected under the above provisions shall be disqualified if they respond to a re-solicitation for the same work.
19. **QUALIFICATION OF THE BIDDER** The City shall have the right to take such steps as it deems necessary to determine the responsibility of the bidder to perform the obligations under the contract and the bidder shall furnish to the City all such information for this purpose as the City may request. The right is reserved to reject any bid where an investigation of available information does not satisfy the City that the bidder is qualified to carry out the terms of the contract.
20. **PLACING OF ORDERS** Orders against contracts will be placed with the Contractor on a Purchase Order (or Procurement Card – currently Mastercard) executed by the Purchasing Agent or designee. Where Master Agreements have been released by the City, orders may be placed directly with the Contractor by authorized personnel in the ordering Department(s). Issuance of all purchase orders will be contingent upon appropriation of funds by the Mayor and Council and encumbrance of such funds after July 1st of each year, as provided by the City Code.
21. **INSPECTION OF THE WORK SITE** Each bidder shall visit the site of the proposed work and become fully acquainted with the existing conditions and fully informed as to any facility involved, and the difficulties and restrictions attending the performance of this contract. Applicable drawings, technical specifications and contract documents should be thoroughly examined. The successful bidder shall in no way be relieved of any obligation due under the executed contract by the failure to examine any form of legal instrument or to visit the site.
22. **RISK OF LOSS AND CONDITION OF SITE** The City makes no representation and assumes no responsibility for the condition of the site or applicable structures on the site. The contractor shall accept the site and the contents thereon in the condition in which they are represented. Any damages or loss whatsoever while the contract is in effect (whether by reason of fire, theft, breakage, or other happenings) shall not relieve the Contractor from any obligations under this contract. The Contractor shall store any materials on site as not to damage the materials and shall maintain such storage areas, as directed by the City, in hazard free condition.
23. **SUBCONTRACTORS** Nothing contained in the contract documents, shall create any contractual relationship between the City and any subcontractor or sub-subcontractor.

Unless otherwise indicated, the successful contractor who will subcontract the delivery, installation, or portion of the work herein described will submit to the Project Manager, prior to the start of work, the following information: 1) A description of the items to be subcontracted, 2) the subcontractor name, address, and telephone number, and 3) the nature and extent of the work utilized during the life of the contract. Subcontractors shall be considered agents of the Contractor, who shall be held fully accountable for all of the subcontractor services, labor, and materials relative to the contract.
24. **BID BOND** Bids must be accompanied by an electronic copy of a certified check or bid bond for five percent (5%) of the total amount of the bid, made payable to the Mayor and Council of Rockville, where the original security instrument must be mailed to City of Rockville, Procurement Division, 111 Maryland Avenue, Rockville, Maryland 20850, referencing the solicitation number. AIA Bond forms are acceptable. Bonds must be issued by a surety licensed to do business in the State of Maryland. The City reserves the right to disqualify any bid, in any instance, where the City cannot locate the mailed, original security instrument. The City shall not be liable for any certified checks it cannot locate, or in any instance where a certified check is cashed by any individual not employed by the City of Rockville. Bid bonds will not be returned.
25. **EXECUTION OF AGREEMENT/BONDS** Subsequent to award and within fifteen (15) calendar days after the prescribed forms are presented to the Contractor, the Contractor shall execute and electronically deliver to the City the required Agreement and Bonds, where two (2) sets of the original agreement and original bonds must be mailed to City of Rockville, Procurement Division, 111 Maryland Avenue, Rockville, Maryland 20850.

Bonds shall be in effect during the original term of the contract and during the guarantee and warranty period required under the Contract, unless otherwise stated therein.

PERFORMANCE BOND The Contractor shall execute and deliver to the City the required Performance Bond for 100% of the bid amount.

PAYMENT BOND For a contract exceeding One Hundred Thousand Dollars (\$100,000) the payment bond shall be in an amount equal to 100% of the bid amount. For a contract exceeding Twenty-Five Thousand Dollars (\$25,000) but not exceeding One Hundred Thousand Dollars (\$100,000) the payment bond shall be in an amount equal to fifty percent (50%) of the bid amount. Bonds shall be executed by a surety company authorized to do business in the State of Maryland.

The successful bidder may request that in lieu of bonds, the City accept the equivalent in the form of a certified check or other security. Such requests will be accepted or rejected by the City Manager. If rejected, the successful bidder will be required to furnish the bonds or forfeit the bid bond. **The City shall not be liable for any certified checks it cannot locate, or in any instance where a certified check is cashed by any individual not employed by the City of Rockville.**

Failure of the successful bidder to execute the agreement and supply both the electronic versions and original versions of the required forms within fifteen (15) calendar days shall constitute a default. Any instance where the City cannot locate the mailed versions of the agreement or bonds shall also constitute a default. The successful bidder shall forfeit to the City as liquidated damages for such failure or refusal an amount in cash equal to the security deposited with the bid.

The City may either award the contract to the next low responsive and responsible bidder or re-advertise the bids and may charge against the original bidder the difference between the amount of the bid and the amount for which a contract for the work is subsequently executed. If a more favorable bid is received by a re-advertising, the defaulting bidder shall have no claim against the City for a refund.

26. **LEGAL REQUIREMENTS** All materials, equipment, supplies and services shall conform to applicable Federal, State, County and City laws, statutes, rules, and regulations. The Contractor shall observe and comply with all Federal, State, County and City laws, statutes, rules, and regulations that affect the work to be done. The provisions of this contract shall be governed by the laws of the State of Maryland.
27. **INDEMNIFICATION OF THE COUNCIL** The Contractor shall indemnify and save harmless the Mayor and Council from all suits, actions and damages or costs, of every name and description to which the Council may be subjected or put by reason of injury to persons or property as a result of the work, whether caused by negligence or carelessness on the part of the Contractor, or subcontractors or agents thereof.
28. **DELIVERY** Time is of the essence. The Contractor shall expedite the work and achieve substantial completion within the contract time. If time limits are not specified, state the number of days required to make delivery/completion in the space provided. Defective or unsuitable materials or workmanship shall be rejected and shall be made good by the Contractor, notwithstanding that such materials/workmanship have previously been overlooked and accepted.
29. **CHANGES IN QUANTITIES/ITEMS** The City reserves the right to add or delete any item(s) from the bid in whole or in part at the City's discretion as given in the Bid or Proposal wherever it deems it advisable or necessary so to do and such changes shall in no way vitiate the contract nor affect the bid prices for any item or remaining work. Unit prices submitted in the bid shall not be increased or decreased regardless of changes in quantity. The City may waive minor differences in specifications in bids provided these differences do not violate the specifications' intent nor materially affect the operation for which the items or services are being purchased.

The Contractor will be paid for the actual amount of authorized work done or material furnished under any item of the bid at the price bid and stipulated for such item. In case any quantity is increased, the Contractor shall not be entitled to any increased compensation over and above the unit price bid for such item, or any claim for damages on account of loss of anticipated profits should any quantities be decreased. The Contractor shall be responsible for confirming the accuracy of the specified quantities prior to ordering materials or supplies and the City's payment shall be based on the actual quantities incorporated in the work and not the quantities specified in the bid document. The quantities must not exceed the Contract specified quantities without specific written authorization of the Project Manager and it is the Contractor's responsibility to obtain said authorization.
30. **MATERIALS** All materials shall be new and free from defects. They shall be standard products of current manufacture. Unless otherwise noted in the contract documents, the Contractor shall abide by specific manufacturer instructions and recommendations on installation and operation.
31. **BRAND NAME OR EQUAL** Identification of an item by manufacturer's name, trade or brand name, or catalog number is for information and establishment of a quality level desired and is not intended to restrict competition. Bidders may offer any brand which meets or exceeds the specification, unless 'brand name only' is specified. Bids on other makes and/or models will be considered provided the bidder clearly states on the proposal what is being proposed and forwards with

the bid complete descriptive literature indicating how the characteristics of the article being offered will meet the specifications. The City reserves the right to accept or reject items offered as an equal.

32. **DEFECTIVE MATERIALS/WORKMANSHIP**

Defective or unsuitable materials or workmanship shall be rejected and shall be made good by the Contractor. If the work shall be found to be defective or to have been damaged before final acceptance, the Contractor shall make good such defect in a manner satisfactory to the City, without extra compensation even though said defect or injury may have not been due to any act or negligence of the Contractor.

33. **TIME OF BEGINNING AND COMPLETION** Unless otherwise specified in the Invitation for Bid documents, the Contractor shall begin work as directed by the City on the Contract within ten (10) working days after the mailing of a purchase order and shall diligently prosecute the same, so that it shall be fully completed within the time as stated in the contract. The Contractor shall not commence any work under the Contract until a written Purchase Order is received from the Purchasing Agent.

34. **FAILURE TO COMPLETE WORK ON TIME/ LIQUIDATED DAMAGES** The Contractor accepts this contract with the understanding and intention to perform fully and in an acceptable manner within the time stated. Should he fail to complete fully, to all intent and purpose, the work specified in the time specified, or within the time as it may have been extended by the City, the Contractor shall pay, for each calendar day that any work shall remain uncompleted, not including Sundays, the sum of \$400 per calendar day or such other amount as specified in the Special Provision, unless otherwise specified in the Invitation for Bid documents. This sum is hereby agreed upon, not as a penalty, but as liquidated damages and the City shall have the right to deduct the amount of such damages from any moneys due the Contractor under this Contract.

The City shall recover such Liquidated Damages by deducted the amount thereof out of any moneys due or that may become due the Contractor, and if said moneys are insufficient to cover said damages, then the Contractor or the Surety shall pay the amount due upon demand by the City.

35. **AUTHORITY OF THE CITY MANAGER IN DISPUTES** Except as may otherwise be provided by the final agreement, any dispute concerning a question of fact arising under the agreement signed by the City and the Contractor which is not disposed of by the final agreement shall be decided by the City Manager who shall notify the Contractor in writing of his determination. The Contractor shall be afforded the opportunity to be heard and offer evidence in support of the claim. Pending final decision of the dispute herein, the Contractor shall proceed diligently with performance under the agreement signed by the City and the Contractor. The decision of the City Manager shall be final and conclusive unless an appeal is taken pursuant to the City Purchasing Ordinance.

36. **CONTRACT DELAYS/EXTENSION OF TIME** The

Contractor shall pursue the contract so as to complete all work within the time allotted in the bid document. The completion date as set in the bid document allows for inclement weather, holidays, and coordination with other companies. If the Contractor is delayed in the delivery of the supplies, equipment, or services by any act of neglect of the City or by a separate Contractor employed by the City, or by any changes, strikes, lockouts, fires, unusual delays in transportation or delay authorized by the City, the City shall review the cause of such delay and shall make an extension of time if warranted. All claims for extensions must be in written notice sent to the Project Manager within ten (10) calendar days after the date when such alleged cause for extension of time occurred. All such claims shall state specifically the amount of time of the delay the Contractor believes to have suffered. If written notice is not received within the prescribed time the claim shall be forfeited and invalidated.

37. **CONTRACT DELAYS - NO DAMAGE CLAIMS ACCEPTED** The Contractor shall make no claim for extra monetary compensation for delays, whether ordered by the City or not, caused by delays in funding, governmental approvals, private or public companies' actions, inclement weather, site conditions, or from any cause whatsoever. The Contractor shall adjust its operation to continue the work at other locations under the contract, if available, and as directed by the City. If it is necessary to discontinue the work temporarily, the Contractor shall resume work within 48 hours of notice from the City. The City may adjust the completion date to compensate for the lost day(s) on a day-for-day basis, if the City finds that the Contractor could not make up for such lost day(s) by reallocating its forces or rescheduling the work, up to the time remaining on the original schedule at the time of shutdown.

38. **PROGRESS SCHEDULE AND SCHEDULE OF OPERATIONS** The construction of this project will be planned and recorded with an Activities Chart Project Schedule (AC) and Written Narrative (WN) unless specifically determined to be unnecessary by the Project Manager. The AC Project Schedule and Written Narrative will break down, in detail, the time (working days or completion date) involved in performing major construction activities for the duration of the project. The AC Project Schedule shall be used for the coordination and monitoring of major work under the contract including the activities of subcontractors, vendors, and suppliers. , if applicable to this project, the AC Project Schedule shall be prepared in accordance with the requirements of the Maryland State Highway Administration Standard Specifications for Construction and Materials dated January 1982, and the errata and addend thereto, subsequent supplement(s) and the Special Provisions as set forth in this Invitation for Bids, unless otherwise directed or approved by the Project Manager.

The schedule shall be consistent with the contract specified completion date(s) and/or working days. The Contractor is responsible for preparing the initial AC Project Schedule and Written Narrative.

Preparation of Initial Schedule – Unless otherwise specified in the Invitation for Bid documents, Within 10 calendar days after notification that the Contractor is the apparent successful bidder, the Contractor will complete development of an initial AC Project Schedule and Written Narrative (describing the logical time representations as proposed in the AC Project Schedule) and submit 2 (two) copies of each AC and WN to the Project Manager for review and approval.

Updating Project Schedule: At any time that it becomes apparent the schedule, created as above and approved by the Project Manager, is not being implemented, either because the work or service is ahead or behind schedule, the Contractor shall immediately notify the Project Manager and shall submit a revised, written, updated AC and WN for the Project Manager's review, revision and approval. The contractor shall make every effort to meet the original completion date and/or working days allowed unless otherwise so directed by the Project Manager.

Payment for Schedule AC/WN: No special compensation will be paid for preparing or revising the above project AC/WN as the cost shall be considered incidental to the contract with compensation incorporated into the bid items(s).

39. **SPECIFICATIONS** The Construction Specifications for this contract will be those shown below and additions included in the bid document, if applicable. In the event of conflict, the City determination shall govern. The following specifications and standards, listed below, including all subsequent addenda, amendments and errata are made part of this contract to the extent required by the references thereto:

1. Maryland Department of Transportation, State Highway Administration, "Standard Specifications for Construction and Materials" (Maryland Department of Transportation, State Highway Administration), dated January 2008 and all errata and addenda thereto. MDSHA Book of Standards for Highway and Incidental Structures.
2. Montgomery County Department of Transportation "Montgomery County Road Construction Code and Standard Specifications."
3. Standard Specifications of WSSC dated July 2005.
4. Montgomery County Department of Transportation "Design Standards" August 1991.
5. Maryland Dept of the Environment "1994 Standards and Specifications Soil Erosion and Sediment Control"
6. The U. S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices" latest edition.
7. Montgomery County Noise Ordinance.

40. **CONTRACT DOCUMENTS** The contract documents are complementary and what is required by anyone shall be binding as if required by all. Words and abbreviations that have well known technical or trade meanings are used in the contract documents in accordance with such recognized meanings. On drawings, the figured dimensions shall govern in the case of discrepancy between the scales and figures. Anything shown on the construction plans and not mentioned in the specifications or mentioned in the specifications and not shown on the plans shall have the same effect as if shown or mentioned respectively in both.

Prior to bidding, the Contractor should obtain clarification of all questions which may have arisen as to intent of the contract document, or any actual conflict between items in the contract documents. Should the Contractor have failed to obtain such clarification, then the City may direct that the work proceeds by any method indicated, specified, or required, in the judgment of the City, by the contract documents. Such direction by the City shall not constitute the basis for a claim for extra costs by the Contractor. The Contractor acknowledges that he had the opportunity to request clarification prior to submitting his bid to the City and that he is not entitled to a claim for extra cost as a result of failure to receive such clarification.

Any discrepancies which may be discovered during the execution of work between actual conditions and those represented by the contract documents shall be reported to the City and work shall not proceed until written instruction has been received by the contractor from the City.

41. **INTERPRETATION** Any questions concerning terms, conditions and definitions of the contract and bidding regulations shall be directed in writing to the Contract Officer. Any questions concerning the technical specifications and drawings shall be directed in writing to the Project Manager. The submission of a bid shall be prima facie evidence that the bidder thoroughly understands the terms of the contract documents. The Contractor shall take no advantage of any error or omission in these contract documents.
42. **PRE-CONSTRUCTION CONFERENCE** A pre-construction conference may be held in person or virtually following contract award. The meeting must be attended by the Contractor. No compensation will be made by the City to the Contractor for meetings.
43. **EMERGENCY CONTACT** The Contractor shall provide at least two local telephone numbers which may be used for contacting an official of the Contractor at all times, 24 hours per day, seven days per week: at which numbers person(s) of responsibility will be available to respond to City directives relative to the contract. The Contractor shall have available

sufficient personnel and equipment to immediately respond to emergency needs, as determined by the City. There will be no special compensation paid for this requirement, but the cost is to be considered incidental to the other contract pay items.

44. **SUPERVISION AND DIRECTION OF WORK** The work shall be under the general supervision of the Project Manager. While it is intended that the Contractor shall be allowed in general to carry on the contract in accordance with such general plan as may appear to the Contractor most desirable, the Project Manager, at the Project Manager's discretion, may from time to time, direct the order in which, and points at which, the work shall be prosecuted and may exercise such general control over the conduct of the work at a time or place, as shall be required, in the Project Manager's opinion, to safeguard the interests of the City, and the Contractor shall have no claims for damages or extra compensation on account of the fact that it shall have been necessary to carry on the work in different sequence from that which the Contractor may have contemplated. The Contractor shall immediately comply with any and all orders and instructions given by the Project Manager, but nothing herein contained shall be considered such an assumption of control over the work by the City or the Project Manager as to relieve the Contractor of any obligations or liabilities under the contract.
45. **INSPECTION** Work and materials will be inspected promptly to see that the same strictly correspond with the drawings and specifications, but if, for any reason, delay should occur in connection with such inspection, the Contractor shall have thereby no claim for damages or extra compensation. Materials and workmanship shall be always subject to the approval of the Project Manager, but no inspection, approval or acceptance of any part of the work or of the materials used therein, nor any payment on account thereof shall prevent the rejection of said materials or work at any time, thereafter, should said work or materials be found to be defective or not in accordance with the requirements of the contract. Any costs for any "re-inspection" of the job shall be the responsibility of the contractor.
46. **TERMINATION FOR DEFAULT** The contract may be cancelled or annulled by the City in whole or in part by written notice of default to the Contractor upon nonperformance or violation of contract terms and an award made to next low Bidder, or, articles specified may be purchased on the open market similar to those so terminated. In either event, the defaulting Contractor (or his surety) shall be liable to the City for costs to the City in excess of the defaulted contract prices: provided, that the Contractor shall continue the performance of this contract to the extent not terminated under the provisions of this clause.
47. **TERMINATION FOR CONVENIENCE** This Contract may be terminated, in whole or in part, upon written notice to the Contractor when the City determines that such termination is in its best interest. The termination is effective 10 days after the notice is issued unless a different time is given in the notice. The City is liable only for payment for goods and services delivered and accepted or approved by the City prior to the effective date of the termination.
48. **EMPLOYEES** The Contractor shall employ only competent, skillful persons to do the work, and whenever the Project Manager shall notify the Contractor in writing that any person employed on the work is, in his opinion, incompetent, disobedient, disorderly, discourteous, or otherwise unsatisfactory, such person shall be discharged from the work and shall not again be employed for this contract except with the consent of the Project Manager.
49. **NON-WORKDAY** The City observes the following holidays: New Year's Day, Martin Luther King's Birthday, President's Day, Memorial Day, Independence Day, Labor Day, Juneteenth, Veterans' Day, Thanksgiving Day, Thanksgiving Friday and Christmas Day, all days of general and congressional elections throughout the State, and a five-day work week.

The Contractor will not be permitted to do any work which requires the services of the City's inspection, supervisory or line and grade forces on the days on which the above-mentioned holidays are observed by the City or on Saturdays or Sundays, unless otherwise authorized by the Project Manager in writing. However, the Contractor, with verbal permission of the Project Manager, may be permitted to perform clean up and such other items for which no specific payment is involved on Saturdays and holidays.

The normal number of working hours per day on this Contract will be limited to eight, unless otherwise authorized by the Project Manager in writing.

In case of an emergency, which may require the services of the City on Saturdays, Sundays, holidays or longer than eight hours per day, the Contractor shall request permission of the Project Manager to work. If, in the opinion of the Project Manager the emergency is bona fide, he will grant permission to the Contractor to work such hours as may be necessary. Also, if in the opinion of the Project Manager, a bona fide emergency exists, the Project Manager may direct the Contractor to work such hours as may be necessary whether the Contractor requests permission to do so or not.

50. **LANGUAGE** The Contractor shall appoint one or more crewmembers or supervisors to act as liaison with the City and emergency services personnel. All liaisons shall be fluently bilingual in English and the Contractor's employees' language(s), and at least one liaison shall be present at each work site at all times when any of the Contractor's employees or agents are at the site.

51. **IMMIGRATION REFORM AND CONTROL ACT**

The Contractor awarded a contract pursuant to this bid shall warrant that it does not and shall not hire, recruit or refer for a fee, for employment under the contract, an individual knowing the individual is an unauthorized individual and hire any individual without complying with the requirements of the Immigration Reform and Control Act of 1986 (the Act), including but not limited to any verification and record keeping requirements. The Contractor shall further assure the City that, in accordance with the Act, it does not and will not discriminate against an individual with respect to hiring, or recruitment or referral for a fee, of the individual for employment or the discharging of the individual from employment because of such individual's national origin or in the case of a citizen or intending citizen, because of such individual's citizenship status.

52. **EQUAL EMPLOYMENT OPPORTUNITY** The Contractor will not discriminate against any employee or applicant for employment because of age (in accordance with applicable law), ancestry, color, national origin, race, ethnicity, religion, disability, genetics, marital status, pregnancy, presence of children, gender, sexual orientation, gender identity or expression, or veteran status. The Contractor will take affirmative action to ensure that applicants are employed, and the employees are treated fairly and equally during employment with regard to the above. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment, layoff or termination, rates of pay or other form of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause. Contractors must also include the same nondiscrimination language in all subcontracts.

If the Contractor fails to comply with nondiscrimination clauses of this contract or fails to include such contract provisions in all subcontracts that subcontractors will not discriminate against any employee or applicant for employment in the manner described above, this contract may be declared void AB INITIO, cancelled, terminated or suspended in whole or in part and the Contractor may be declared ineligible for further contracts with the City of Rockville. Any employee, applicant for employment, or prospective employee with information concerning any breach of these requirements may communicate such information to the City Manager who shall commence a prompt investigation of the alleged violation. Pursuant to such investigation, the Contractor will permit access to the Contractor's books, records, and accounts. If the City Manager concludes that the Contractor has failed to comply with nondiscrimination clauses, the remedies set out above may be invoked.

53. **ETHICS REQUIREMENTS** In accordance with the City's financial disclosure and ethical conduct policy and/or ordinances a prerequisite for payment pursuant to the terms of this contract is that the Contractor may be required to furnish explicit statements, under oath, that the City Manager, and/or any other officer, agent, and/or employee of the City, and any member of the governing body of the City of Rockville or any member or employee of a Commission, Board, or Corporation controlled or appointed by the City Council, Rockville, Maryland has not received or has not been promised directly or indirectly any financial benefit by way of fee, commission, finder's fee, or in any other manner, remuneration arising from directly or indirectly related to this contract, and that upon request by the City Manager, or other authorized agent, as a prerequisite to payment pursuant to the terms of this contract, the Contractor will furnish to the Mayor and Council of the City of Rockville, under oath, answers to any interrogatories to a possible conflict of interest has herein embodied.

54. **DRAWINGS TO BE FOLLOWED** The approved drawings, profiles and cross sections on file with the City will show the location, details and dimensions of the work contemplated, which shall be performed in strict accordance therewith and in accordance with the specifications. Any deviations from the drawings or specifications as may be required by the exigencies of construction in all cases will be determined by the Project Manager. There shall be no such deviations without the written authorization of the Project Manager. On all drawings, etc., the figured dimensions shall govern in the case of discrepancy between the scales and figures. The Contractor shall take no advantage of any error or omission in the drawings or specifications. The Project Manager shall make such corrections and interpretations as may be deemed necessary for the fulfillment of the intent of the specifications and of the drawings as construed by the Project Manager whose decision shall be final.

55. **CERTIFICATION** Under no circumstances will Contractors be paid for materials utilized on any City contract unless certified to by the Project Manager. The Contractor must not incorporate any materials into a City project without prior authorization and certification of the Project Manager, unless necessary to eliminate or avoid hazardous conditions. Under these emergency circumstances the responsibility for notification to the Project Manager and quantity/quality confirmation rests with the Contractor and must be obtained within 24 hours of the work.

56. **DECISIONS AND EXPLANATIONS BY PROJECT MANAGER** The Project Manager shall make all necessary explanations as to the meaning and intent of the specifications and drawings, and shall give all orders and directions, either contemplated therein or thereby, or in every case in which a difficult or unforeseen condition arises during the prosecution of the work. Should there be any discrepancies, or should any misunderstanding arise as to the intent of anything contained in the drawings and specifications, the decision of the Project Manager shall be final and binding. The Project Manager shall in all cases determine the amount, quality, acceptability and estimates of the work to be paid for under the Contract and shall decide all questions in relation to the work. In case any questions arise between parties relating to the Contract, such decision and estimate shall be a condition precedent to the right of the Contractor to receive payment under that part of the Contract which is in dispute.

57. **WORK TO BE DONE AND MATERIALS TO BE FURNISHED** The Contractor shall do all the work and furnish all the labor, materials, tools, and equipment necessary or proper for performing the work required by the Contract, in the manner called for by the drawings and specifications and within the Contract time. The Contractor shall complete the entire work together with such extra work as may be required, at the prices fixed therefore, to the satisfaction of the Project Manager and in accordance with the specifications and drawings.
58. **NOTIFICATION TO OTHER AGENCIES** The Contractor will be responsible for notifying all concerned agencies affected by the work a minimum of 48 hours in advance of any activity, as prescribed by said agencies, including, but not limited to: the Washington Gas, PEPCO, Verizon Comcast Cable, Transcontinental Gas, City of Rockville Utilities Division, Montgomery County Government, State Highway Administration and the Washington Suburban Sanitary Commission. The Contractor must notify MISS UTILITY at 1-800-257-7777 a minimum of 72 hours and no more than 5 working days prior to removal of any pavement or beginning any excavation. There shall be no measurement or direct payment to the Contractor for such notification, working around, the protection of, or repair of damage to such existing utilities caused by the proposed construction activities directly or indirectly.
59. **PERMITS AND REGULATIONS** Unless stipulated elsewhere in these specifications, the Contractor shall be responsible for obtaining and paying for all applicable permits. Where signatures of the City are required in connection with the obtaining of such permits, certificates, etc., the Contractor shall prepare the proper paperwork and present it to the City for signature. City of Rockville Permit fees shall be waived. If the Contractor ascertains at any time that any requirement of this contract is at variance with applicable laws, ordinances, regulations and/or building codes, notification to the Project Manager shall be made immediately and any necessary adjustment to the contract shall be made. Without proper notice to the Project Manager, the Contractor shall bear all costs arising from the performance of work the Contractor knows to be contrary to such laws, ordinances, etc.
60. **EXCAVATION** Unless specifically provided in the specifications, all trench and roadway excavation is hereby unclassified as to the character of materials. The lump sum or unit price, as specified, for or including excavation shall constitute full payment for removal and disposal of all materials, regardless of type, encountered in trenching and roadway excavation, within the limits of this Contract, as necessary and as shown to be removed on the Contract drawings and/or as directed by the Project Manager, except as otherwise provided for under this Contract. All bidders are hereby directed to familiarize themselves with all site conditions including subsurface and the proximity of adjacent features.
61. **SERVICE OF NOTICES** The mailing a written communication, notice or order, addressed to the Contractor at the business address filed with the City, or to his office at the site of the work shall be considered as sufficient service upon the Contractor of such communication, notice or order; and the date of said service shall be the date of such mailing. Written notice shall also be deemed to have been duly served if delivered in person to the individual or member of the firm or to any officer of the corporation for whom it was intended if delivered or sent by registered or certified mail to the last known address.
62. **PATENT RIGHTS** Whenever any article, materials, equipment, process, composition, means, or things called for by these specifications is covered by letters of patent, the successful bidder must secure, before using or employing such article, material etc., the assent in writing of the Owner or Licensee of such Letters of Patent and file the same with the City.
- The said assent is to cover not only the use, employment, and incorporation of said article, material, equipment, process, composition, combination, means, or thing in the construction and completion of the work but also the permanent use of said article, material, etc., thereafter by or on behalf of the City, in the operation and maintenance of the project for the purposes for which it is intended or adapted. The Contractor shall be responsible for any claims made against the City, its agents and employees or any actual or alleged infringement of patents by the use of any such patented articles, etc., in the construction and completion of the work, and shall save harmless and indemnify the City, its agents and employees from all costs, expenses, and damages, including Solicitor's and Attorney's fees which the City may be obligated to pay by reason of any actual or alleged infringement of patents used in the construction and completion of the work herein specified.
63. **CARE AND PROTECTION OF WORK** From the commencement of the Contract until its completion, the Contractor shall be solely responsible for the care of the work and all injury or damage to the same, from whatever cause, shall be made good by the Contractor at the Contractor's own expense, before the final estimate is made. The Contractor shall provide suitable means of protection for all materials intended to be used in the work and for work in progress, as well as completed work.
64. **ABANDONMENT OF OR DELAY IN WORK** If the work under the Contract shall be abandoned by the Contractor, or if at any time the Project Manager shall be of the opinion and shall so certify, in writing, to the Contractor, that the performance of the Contract is unnecessarily or unreasonably delayed, or that the Contractor has violated any of the provisions of the Contract or is executing the same in bad faith or if the work is not fully completed within the time specified for its completion, together with such extension of time as may have been granted, the City by written notice, may order the Contractor to discontinue all work there under, or any part thereof, within the number of days specified on such notice. At the expiration of said time the Contractor shall discontinue the work, or such part thereof, and the City shall have the power, by Contract, or otherwise, to complete said work and deduct the entire cost thereof from any monies due or to

become due the Contractor under the Contract. For such completion of work the City may, for itself or its Contractor, take possession of and use or cause to be used any or all materials, tools, and equipment found on the site of said work. When any part of the Contract is being carried on by the City, as herein provided, the Contractor shall continue the remainder of the work in conformity with the terms of the Contract and in such manner as not to interfere with the City's workmen.

65. **SUBLETTING OR ASSIGNING OF CONTRACT** The City and the Contractor each bind themselves, their partners, successors, assigns and legal representatives of such other parties in respect to all covenants, agreements, and obligations contained in the contract documents. Neither party to the contract shall sublet, sell, transfer, assign or otherwise dispose of the Contract or any portion thereof, or of the work provided for therein, or of his right, title or interest therein to any person, firm or corporation without the written consent of the other party, nor shall the Contractor assign any monies due or to become due hereunder without the previous written consent of the City.
66. **NO WAIVER OF CONTRACT** Neither the acceptance by the City or its Project Manager nor any order, measurement, certificate or payment of money, of the whole or any part of the work, nor any extension of time nor possession taken by the City or its Project Manager shall operate as a waiver of any portion of the Contract, or any right to damage therein provided. The failure of the City to strictly enforce any provision of this contract shall not be a waiver of any subsequent breach of the same or different nature.
67. **DUTIES, OBLIGATIONS, RIGHTS AND REMEDIES** The duties and obligations imposed by the contract documents and the rights and remedies available there under shall be in addition to and not a limitation of the duties, obligations, rights, and remedies otherwise imposed or available by law, unless so indicated.
68. **IMPLIED WORK** All incidental work required by the drawings or specifications for which no payment is specifically provided, and any work or materials not therein specified which are required to complete the work and which may fairly be implied as included in the Contract, and which the Project Manager shall judge to be so included, shall be done or furnished by the Contractor without extra compensation. The intent is to prescribe a complete work or improvement which the Contractor undertakes to do in full compliance with the contract documents together with any authorized alterations, special provisions, and supplemental agreements.
69. **MEASUREMENT OF WORK AND MATERIAL** The work and material to be paid for will be measured and determined by the Project Manager according to the specifications and drawings, and the working lines that may be given. No allowance will be made for any excess above the quantities required by the specifications, drawings, and lines on any part of the work, except where such excess material has been supplied or work done by order of the Project Manager and in the absence of default or negligence on the part of the Contractor. Should the dimensions of any part of the work or of the materials be less than those required by the drawings or the directions of the Project Manager, only the actual quantities placed will be allowed in measurement.
70. **EXTRA COSTS** If the contractor claims that any instructions by the contract documents or otherwise involve extra compensation or extension of time, a written protest must be submitted to the Project Manager within ten (10) calendar days after receipt of such instructions and before proceeding to execute the work, stating in detail the basis for objection. No such claim will be considered unless so made.
71. **CONTINGENT ITEMS & QUANTITIES** Items and quantities identified as being contingent are provided in the Contract for use when and as directed by the Project Manager. These items shown on the Plans or in the specifications are established for the purpose of obtaining a bid price. The quantities for these contingent items may be increased or decreased without any adjustment to the Contract unit price bid or the contingent items may be deleted entirely from the Contract by the Project Manager without negotiation. The Contractor shall submit no claim against the City for any adjustment to the Contract unit price bid, should the contingent items be increased, decreased, or eliminated entirely. Payment for any contingent items used will be made on the basis of the quantities as actually measured and as specified in the Specifications. Materials, Construction Requirements and Basis of Payment shall be as specified elsewhere in the Specifications, Plans or Special Provisions.
72. **CHANGES IN THE SCOPE OR EXTRA WORK** The City, without invalidating the contract, may issue written changes in the work consisting of additions, deletions, or modifications with the contract sum and completion date being adjusted accordingly. All such changes, or additional work must be authorized in writing by the Purchasing Agent prior to starting such work. Costs shall be limited to the cost of materials, labor, field supervision and field office personnel directly involved in and attributed to the change. All costs and/or credits to the City for a change in the work shall be determined by the unit price bid or by mutual agreement, where any agreed upon charges related to overhead may not exceed 5% of the total cost of the changes and any agreed upon charges to profit may not exceed 10% of the total cost of the changes.

The Contractor shall do all work that may be required to complete the work contemplated at the unit prices bid or at a lump sum price to be mutually agreed upon.

The Contractor shall perform extra work, for which there is no quantity or price included in the Contract, whenever it is deemed necessary or desirable, to complete fully the work as contemplated, and such work shall be done in accordance

with the specifications therefore, or in the best workmanlike manner as directed. Where such a price or sum cannot be agreed upon by both parties, or where this method of payment is impracticable, the Project Manager may order the Contractor to do such work on a force account basis, which will be paid for as follows.

73. **FORCE ACCOUNT WORK** When the Contractor is required to perform work as a result of additions or changes to the contract for which there are no applicable unit prices in the contract, the City and Contractor shall make every effort to come to an agreed upon price for the performance of such work. If an agreement cannot be reached, the City may require the Contractor to do such work on a force account basis to be compensated in accordance with the following:

- A. Labor. For all labor and for foremen in direct charge of the specific operations the Contractor shall receive the actual wages for each and every hour that said labor and foremen are actually engaged in such work.
- B. Materials. For materials accepted by the Project Manager and incorporated into the project, the Contractor shall receive the actual cost of such materials, including transportation charges paid by him (exclusive of machinery rentals as hereinafter set forth). Excess materials delivered to the job site and not incorporated into the project will not be paid for and it is the Contractor's responsibility to remove said excess material from the job site.
- C. Equipment. For any machinery or special equipment (other than small equipment tools, whether rented or owned), the use of which has been authorized in writing, by the Project Manager the Contractor shall receive the rates agreed upon in writing before such work is begun which price shall include fuel, oil and miscellaneous necessities, or the Contractor shall receive those rates which may be specified elsewhere in the Special Provisions. For the purpose of definition, equipment with a new cost of \$1000 or less will be considered small tools and equipment.
- D. Materials and Supplies Not Incorporated in the Work. For materials and supplies expended in the performance of the work (excluding those required for rented equipment) and approved by the Project Manager, the Contractor shall receive the actual cost of such materials and supplies used.
- E. Subcontractors. The Contractor shall receive the actual cost of work performed by a subcontractor. Subcontractor's cost is to be determined as in A., B., C., and D. above, plus the fixed fee for overhead and profit allowance computed as in G.
- F. Superintendence. No additional allowance shall be made for general superintendence, the use of small tools, or other costs for which no specific allowance is herein provided
- G. Contractor's Fixed Fee. The procurement officer and the Contractor shall negotiate a fixed fee for force account work performed pursuant to this specification by his force and by his subcontractors. The City shall pay 10 percent of A as compensation for overhead and profit for the work performed. The Contractor shall proceed diligently with the performance of the force account work to completion. The Contractor's fixed fee shall include an amount equal to the sum of 65 percent of A, which shall include, but not be limited to the following:
 - (1) Compensation for all costs paid to, or in behalf of, workmen by reason of subsistence and travel allowances, health and welfare benefits, pension fund benefits or other benefits that may be required by collective bargaining agreement or other employment contract generally applicable to the classes of labor employed in the work; and
 - (2) Bond premiums, property damage, liability and workmen's compensation insurance premiums, unemployment insurance contributions and Social Security taxes on the force account work.

In addition, the Contractor's fixed fee may include an amount not to exceed 10 percent of B, unless specifically authorized by the Project Manager in advance of the work; 5 percent of D, and 5 percent of E with the exception of that portion chargeable to equipment as defined above.

- H. Compensation. The compensation as set forth above shall be received by the Contractor as payment in full for change order work done on a force account basis. At the end of each day, the Contractor's representatives and the Project Manager, shall compare records of the cost of work as ordered on a force account basis. Differences shall be immediately resolved, and any unresolved difference shall be brought to the attention of the Project Manager by written notice from the Contractor within two working days of the occurrence.
- I. Statements. No payment will be made for work performed on a force account basis until the Contractor furnishes the Project Manager duplicate itemized statements of the cost of such force account work detailed as to the following:
 - (1) Name, classification, date, daily hours, total hours, rate, and extension for such workmen. Contractor shall provide certified payrolls

(2) Designation, dates, daily hours, total hours, rental rate, and extension for each unit of machinery and equipment. Contractor shall provide original receipted invoices.

(3) Quantities of materials, prices, and extensions. Contractor shall provide original receipted invoices.

(4) Transportation of materials. Contractor shall provide original receipted invoices.

If, however, the materials used in the force account work are not specifically purchased for such work but are taken from the Contractor's stock, then in lieu of the original invoices the statements shall contain or be accompanied by an affidavit of the Contractor which shall certify that such materials were taken from his stock that the quantity claimed was actually used and that the price and transportation of the material as claimed represent actual cost. Any request for payment under this Section should be submitted in the order outlined by the above.

The Contractor shall be responsible for all damages resulting from work done on a force-account basis, the same as if this work had been included in the original Contract.

Work performed without previous written order by the Project Manager will not be paid.

74. **ALLOWANCES** Whenever an allowance is mentioned in the specifications, then the contractor shall include in his contract sum the entire amount of such specified allowances. The expenditure of these allowances is to be at the Purchasing Manager's direction. However, the allowance expenditure is limited to items properly inferable from the title and description of the allowance. Unexpended balances are to be credited to the City. Compensation payable to the contractor for expenditure of allowances directed by the Purchasing Manager shall be based on the cost to the contractor as shown by actual invoices or receipts, and no additional overhead or profit shall be payable to the contractor for such allowances.

75. **PROGRESS PAYMENTS AND RETAINAGE** The Contractor shall submit a detailed application for payment on a monthly basis, preferable on an AIA G702 form. Such application for payment, notarized, if required, must be accompanied by supporting data and documents substantiating the Contractor's right to payment and reflecting a five percent (5%) retainage.

Applications for payment shall not include payment for equipment or materials delivered to the site but not installed or for materials or equipment properly stored off-site unless specifically approved by the Project Manager. If such approval is granted, the Contractor must submit with the application for payment, bills of sale or other such documentation satisfactory to the City to establish the City's title to such materials or equipment or otherwise to protect the City's interest, including applicable insurance and transportation to the site for materials and equipment stored off site. Such approvals are typically reserved for "big ticket" items that individually would exceed five percent (5%) of the bid total. The Contractor shall promptly pay each subcontractor and supplier for work completed upon receipt of payment from the City the amount to which said subcontractor is entitled, reflecting any percentage retained from payments to the Contractor on account of each subcontractor's work. The Contractor shall, by an appropriate agreement with each subcontractor, require each subcontractor to make prompt payments to his subcontractors in a similar manner.

The City shall be under no obligation to pay or to see to the payment of any moneys to any subcontractor except as may otherwise be required by law.

No Certificate of Payment or partial or entire use of the facility by the City shall constitute an acceptance of any work which is not in accordance with the Contract Documents.

Payments Withheld – The City may decline to certify payment or because of subsequently discovered evidence or observations, nullify the whole or any part of any Certification of Payment previously issued, as may be necessary to protect the City from loss because of: (1) defective work not remedied, (2) third party claim filed or evidence indicating probable filing of such claim, (3) failure of the Contractor to make payments properly to subcontractors or suppliers, (4) reasonable evidence that the work cannot be completed for the unpaid balance of the contract sum, (5) reasonable evidence that the work will not be completed within the Contract time, (6) persistent failure to carry out the work.

76. **FINAL PAYMENT REQUEST** Upon reaching substantial completion, as defined by receipt of occupancy permit or when all related punch list items have been completed, whichever date is later, the Contractor may submit a written Application for Final Payment. All supporting documentation and data shall be submitted with the Request for Final Payment as is applicable to the monthly Requests for Payment referenced heretofore.

Out of the amount representing the total of the final payment request the City shall deduct five (5%) percent, which shall be in addition to any and all other amounts which, under the Contract, it is entitled or required to retain and shall hold said sum for a period of one hundred and twenty (120) days after the date of acceptance of the work by the City.

Within thirty (30) days after the approval of the final payment request, the City will pay to the Contractor the amount remaining after deducting from the total amount of the final estimate all such sums as have hereto before been paid to the Contractor under the provision of the Contract and also such amounts as the City has or may be authorized under the Contract to reserve or retain.

Neither the final payment nor the remaining retainage shall become due until the Contractor submits to the Project Manager:

1. An affidavit that all payrolls, bills for materials and equipment and other indebtedness connected with the work for which the City or his property might in any way be responsible, have been paid.
2. Consent of surety to final payment, and
3. If requested, data establishing payment or satisfaction of obligations, such as receipt, release and waivers of liens arising out of the Contract;
4. All punch list items are completed to the satisfaction of the Project Manager.

If any subcontractor refuses to furnish a release or waiver of liens required by the City, the Contractor may furnish a bond satisfactory to the City to indemnify him against any such lien. If any such lien remains unsatisfied after all payments are made, the Contractor shall refund to the City all moneys that the latter may be compelled to pay in discharging such lien, including all costs and reasonable attorney fees.

Acceptance by the Contractor of final payment shall operate as a release to the Mayor and Council and every officer and agent thereof, from all claims and liabilities to the Contractor for anything done or furnished or relating to the work under the contract.

77. **RELEASE OF RETAINAGE** Upon the expiration of the aforesaid period of one hundred and twenty (120) days succeeding the date of acceptance, the City will pay to the Contractor all sums reserved or retained, less such amount as it may be empowered under the provisions of the Contract to retain.

78. **GUARANTEES / WARRANTIES** All guarantees and warranties required shall be furnished by the Contractor and shall be delivered to the Project Manager before final payment is made. The Contractor guarantees that the items conform to the contract documents.

79. **GUARANTEE PERIOD** Unless otherwise specified in the Invitation for Bid documents, the Contractor shall warrant and guarantee the work required under this Contract for a period of twelve (12) months from the date of Final Acceptance. The Contractor warrants and guarantees to the City, that materials and equipment furnished under the Contract shall be of good quality and new unless otherwise required or permitted by the Contract Documents, that all work will be in accordance with the Contract Documents, and that all work will be of good quality, free from faults and defects. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. If required by the City, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

The Contractor's obligation to perform and complete the work in a workmanlike manner, free from faults and defects and in accordance with the Contract Documents shall be absolute. The Contractor shall remedy, at his own expense, and without additional cost to the Owner, all defects arising from either workmanship or materials, as determined by the City, or City's representative. The obligations of the Contractor under this Paragraph shall not include normal wear and tear under normal usage.

If the Contractor does not, within ten (10) days after notification from the Project Manager, signify his intention in writing or in action to correct work, as described above, then the Project Manager may proceed with the work and charge the cost thereof to the account of the Contract as herein before provided.

80. **Substantial Completion**. Sufficient completion of the project or the portion thereof to permit utilization of the project, or portion thereof for its intended purpose. Substantial completion requires not only that the work be sufficiently completed to permit utilization, but that the City can effectively utilize the substantially completed work. Determination of substantial completion is solely at the discretion of the City. Substantial completion does not mean complete in accordance with the contract nor shall substantial completion of all or any part of the project entitle the Contractor to acceptance under the contract.

At such time as the Contractor has completed the work and prior to requesting a final inspection, the Contractor shall make written request for an inspection for substantial completion. Such request shall be made no less than seven (7) calendar days prior to the requested date of inspection. An inspection will be made by the City and a determination will be made as to whether or not the work is in fact substantially complete and a "punch list" will be developed. "Punch Lists" containing numerous items or items which may affect the intended use of the work will be considered cause to delay issuance of a document of Substantial Completion. Operation and Maintenance manuals shall be submitted and approved prior to issuance of any document of Substantial Completion.

81. **TRANSFER OF TITLE** The Contractor warrants that title to all work, materials and equipment covered by the Application for Payment will pass to the City either by incorporation in construction or upon the receipt of payment by the Contractor, free and clear of all liens, claims, interests or encumbrances, and that no work, materials, or equipment covered by an Application for Payment will have been acquired by the Contractor, or by any person performing the work at the site or furnishing materials or equipment for the project, subject to an agreement under which an interest therein or an encumbrance thereon is retained by the seller or otherwise imposed by the Contractor or such other persons.
82. **USE OF PREMISES** Whenever, in the opinion of the Project Manager, any portion of the work is completed or is in an acceptable condition for use, it shall be used for the purpose it was intended, however, such use shall not be held as acceptance of that portion of the work, or as a waiver of any of the provisions of the Contract.
83. **DETERMINATION OF CITY'S LIABILITY** The acceptance by the Contractor of the final payment made as aforesaid shall operate as and be a release to the City and every officer and agent thereof, from all claims by and liabilities to the Contractor for anything done or furnished for or relating to or affecting the work under the contract.
84. **NO LIMITATION OF LIABILITY** The mention of any specific duty or liability of the Contractor in any part of the specification shall not be construed as a limitation or restriction upon any general liability or duty imposed upon the Contractor.
85. **PRESERVATION OF MONUMENTS AND TREES** The Contractor shall be responsible for the preservation of all public and private property, trees, monuments, highway signs, markers, fences, and curbs or other appurtenances, and shall use every precaution to prevent damage or injury thereto. Any expense necessary to provide adequate protection, whether such designated item be on or off the right-of-way, shall be assumed by the Contractor.
86. **PUBLIC ACCESS** The Contractor shall at all times conduct the work in such a manner as to insure the least obstruction to traffic practicable. The convenience and safety of the general public and the residents along the improvement shall be provided for in an adequate and satisfactory manner. Fire hydrants shall be kept accessible to fire apparatus at all times. Handicap access shall remain accessible.
87. **HAZARDOUS AND TOXIC SUBSTANCES** Manufacturers and distributors are required by Federal "Hazard Communication" provision (29 CFR 1910.1200), and the Maryland "Access to Information About Hazardous and Toxic Substances" law to label each hazardous material or chemical container, and to provide Material Safety Data Sheets to the purchaser. The Contractor must comply with these laws and must provide the City with copies of all relevant documents, including Material Safety Data Sheets, prior to performance of services or contemporaneous with the delivery of goods.
88. **MAINTENANCE OF VEHICULAR TRAFFIC (if applicable)** Unless otherwise directed by the Project Manager, traffic must be maintained on all roadways within the construction area continuously or with the least amount of interruption during the construction period necessary to minimize accidents and accident severity and maintain safety while at the same time minimizing inconvenience to the traveling public and the Contractor. The Project Manager shall have the exclusive right to order a road to be closed or to remain open. No equipment will be stored or permitted to stand within the limits of the roadway right-of-way where traffic must be maintained. Any earth dropped on the surface of the existing road shall be removed immediately to avoid possible hazardous conditions. The Contractor shall prepare and submit a Traffic Control Plan (TCP) for the Project Manager's review, revision, and approval, at least ten days before beginning work, unless otherwise directed.

All Traffic Control Devices shall be in accordance with the Manual on Uniform Traffic Control Devices (MUTCD), latest edition (and all revisions). With the approved TCP implemented, the Contractor will be permitted to work with the following provisions: All traffic lanes must be restored at the end of each day unless specifically authorized otherwise, in advance, by the Project Manager:

The City reserves the right to modify or expand on the methods of traffic control specified and to restrict working hours if, in the opinion of the Project Manager, the Contractor's operations are a detriment to traffic during rush hour periods.

Signs on fixed supports shall be mounted on two posts. Signs mounted on portable supports are suitable for temporary conditions. During periods of partial shutdown, or extended periods when no work is being performed, the Contractor shall remove or adequately cover all construction signs as directed by the Project Manager.

The Contractor shall be responsible for removing, storing, covering, and resetting all existing traffic signs and delineators that become inapplicable and will confuse traffic during the various stages of construction, the cost of which shall be included in the price for Maintenance of Traffic or in the absence of such a pay item it shall be accomplished at no additional compensation, as incidental to the contract. Any signs lost or damaged will be replaced by the Contractor at its expense.

The Contractor shall provide, maintain in new condition, and move when necessary or directed all traffic control devices used for the guidance and protection of vehicles.

The Contractor shall be responsible for providing the appropriate signs to reflect varying traffic patterns prior to the commencement of a new stage of construction.

Traffic must be safely maintained at all times throughout the entire length of the project. No additional compensation shall be paid to the contractor for traffic maintenance, even if the contract time exceeds the contractually specified completion date or working days.

When required lane shifts are implemented, existing painted lane markings no longer applicable shall be removed to the satisfaction of the Project Manager.

Temporary crash cushions are to be installed as shown on the Plans. Unless otherwise specified, sand containers shall be used. The crash cushions shall conform to Subsection 104.10 of the MDSHA Specifications.

Crash cushions shall be reset to reflect changing traffic patterns caused by different stages of Traffic Control. The crash cushions shall be reset at locations shown on the Plans or as directed by the Project Manager.

Should any of the sand container components be damaged during the resetting of the system or during the course of the project, the Contractor shall replace the damaged components at its own expense.

The Contractor shall have flaggers on this Project for the purpose of controlling traffic while maneuvering heavy equipment. This may require a temporary lane closure in any of the specified Traffic Control Phases. These temporary lane shutdowns shall be kept to a minimum and the normal traffic pattern for the Traffic Phase shall be restored as quickly as possible. The Contractor shall comply with Section B-20 of the MUTCD regarding flagger signing.

Prior to stopping work each day the Contractor will be required to reshape all graded areas and eliminate all drop-offs not protected by barriers by filling with compacted stone at maximum of 8:1 slope.

All barriers and barricades shall be adequately illuminated at night, as specified herein, and all lights for this purpose shall be kept operative from sunset to sunrise.

No work shall be commenced in any stage of construction until the barriers and barricades for that stage, indicated on the Plans, or as specified by the Project Manager, are completely in place. The Contractor will be solely responsible for all accidents and damages to any persons and property resulting from its operations. Compliance with prescribed precautions contained herein or in the MDSHA Specifications or Manual On Uniform Traffic and Control shall not relieve the Contractor of its primary responsibility to take all necessary measures to protect and safeguard the work, nor relieve the Contractor from any responsibilities prescribed by GP-7 of the January 2001 MDSHA Standard Specifications for Construction and Materials.

The Contractor shall notify and obtain approval in writing from the Project Manager, at least 48 hours before changing any Traffic Control Phase.

Any construction materials or debris dropped on the roadway surface shall be removed immediately to avoid possible hazardous conditions.

Materials The Contractor shall provide, maintain in first class condition, replace, and move when necessary or directed all materials, devices, flagging, etc., required to maintain traffic in accordance with the Traffic Control Plans or as directed by the Project Manager. Reference is made to the latest edition of the MUTCD, wherein all such items are fully described with regard to use, application, warranties, size, color, placement, etc., and wherein typical traffic control device layouts are shown, as all such devices and techniques planned for use on this project shall strictly conform to the Manual's request except as noted on the Plans.

When any of the following items have been established on the Plans or as directed by the Project Manager, the Specifications will be adhered to in accordance with the respective sections.

Lights, Warnings, Etc.: - All banners and imitation barrels shall be adequately illuminated at night, and all lights for this purpose shall be kept operative from sunset to sunrise.

Steady burning warning lights shall be used to delineate channelization through and around obstructions in a construction or maintenance area, on detour curves, on lane closures, and in other similar conditions (MUTCD 6E-4, 6E-5). Flashing warning lights shall be the means for identifying a particular and individual hazard and shall not be used in sequence, in clusters, or for delineation (MUTCD: 6E-5, 6E-6).

Where noted on the plans the first two (2) warning signs shall include a "High Level Warning Device." In addition to the flags the signs shall also be equipped with a Type "B" High Intensity Flag Warning Light. This device must meet the requirements of MUTCD 6C-11 and 6E-5. The device shall be incidental to the Temporary Traffic Sign item if provided for, otherwise the costs shall be considered incidental, and no special compensation will be paid.

Barriers: Temporary concrete barriers shall be installed on the roadway approaches as shown on the plans or as approved in writing.

Any permanent facilities damaged as a result of anchoring temporary concrete barriers (anchor holes, etc.) shall be repaired to the satisfaction of the Project Manager using an epoxy grout or other material as may be specified by the Project Manager. Epoxy grout shall consist of sand and epoxy, mixed by volume according to manufacturer's recommendations.

Method of Measurement and Basis of Payment: All work and materials required under the TCP not covered or specified as a pay item on the price proposal form will be included in the lump sum price bid for Maintenance of Traffic. In the absence of such an item the Contractor agrees that there will be no special compensation paid for maintenance of vehicular traffic as described above and the cost shall be considered incidental to the contract and compensated as part of other contract bid item(s).

89. **PARKING, STORAGE AND STAGING AREAS** Parking, storage and staging areas for the Contractor's use during the Project must have prior approval of the Project Manager. All areas used for storage of equipment or material shall be restored to their original condition, immediately upon completion of the work. No additional compensation will be provided for restoring, re-grading, placement of topsoil, and seed and mulch in these areas.
90. **PEDESTRIAN TRAFFIC** Pedestrians shall be safeguarded by the use of signs lights, barricades and barriers as shown on the traffic control plan and/or directed by the Project Manager. Pedestrian traffic shall be maintained at all times unless specifically authorized otherwise, in advance, by the Project Manager. The Contractor shall submit a pedestrian traffic safety plan in accordance with the MUTCD, incorporating safety measures and other provisions to fully implement the intent of this paragraph. All work and materials required to prepare and implement the pedestrian traffic safety plan shall be considered incidental to the contract and there shall be no special compensation paid for this item unless special pay items are included in the Price Proposal page. No additional compensation shall be paid for maintenance of vehicular and pedestrian traffic if for whatever reason the project time extends beyond the contract specified completion date or working days.
91. **HANDICAP ACCESS** Where handicap access exists within the line of work under this contract it will be the contractor's responsibility to maintain said access during the life of this contract. This service is incidental to this contract and no special compensation will be paid for this service unless provided on the Price Proposal page.
92. **TOILET FACILITIES** Toilet facilities meeting MOSHA standards shall be provided at the job site for all projects exceeding \$100,000 in value and at all other job sites when directed by the City. No special compensation shall be paid unless specifically provided for in the Price Proposal page of this solicitation.
93. **STAKEOUT-CONSTRUCTION CONTROL** Survey construction control provided by the City shall be limited to the baseline with stations not over 100 feet, and the elevation of the top of each marked point. P.C.s, P.T.s, P.I.s, P.V.T.s, and at least one point on the tangent beyond the end of each curve will be staked. The Contractor shall request baseline stakeout a minimum of five days in advance of construction. Stakeout data other than stated above will be furnished by the construction Contractor per MDSHA Section 815 for structures, otherwise per WSSC specs. section 01000(H) and as described in detail below and in these specifications. The City's responsibility for stakeout for the entire project shall be limited to that data described above and this shall be provided only once. The Contractor shall preserve or otherwise ensure adequate survey controls exist throughout the life of the contract.

Surveys and stakeout shall be accomplished by the Contractor as outlined above and in conformance with WSSC specifications Section 01000-10-I (H), entitled "Construction Stakeout By Contractor."

The provisions therein are primarily for pipeline stakeout. The Contractor's responsibilities under this contract are hereby expanded to include, in addition to pipeline stakeout, similar responsibilities for all phases of stakeout necessary to construct all facilities under this contract including but not limited to clearing and grubbing excavation, pavement, curbs and gutters, storm drainage pipes and facilities, culverts, structures, storm water management facilities, street lights, traffic signal conduits and components, noise walls, retaining walls, ditches and sediment control features.

The stakeout and survey record data shall be preserved and turned over to the City for filing following completion of specific components of work.

Method of Measurement and Payment Generally, stakeout shall be considered incidental to the contract and no special compensation shall be paid, unless a specific pay item is included in the contract Price Proposal page of this contract. Where payment is provided, progress payments for stakeout shall be made based on the percentage resulting from the price bid for stakeout divided by the total bid, multiplied by the monthly payment exclusive of the stakeout payment, except the final payment shall be adjusted as necessary to equal the total price bid for stakeout.

Grade Sheet by Contractor: Grade sheets showing hub and design elevations for roadway, water mains, drainage structures and piping, walks, lights, infiltration facilities clearing/grubbing, excavation, and related components will be

provided by the construction Contractor at least 8 hours in advance of construction and will be subject to approval by the Project Manager. Stakeout for curb and gutter in all vertical and horizontal curves is to be at intervals of 25 feet or less unless otherwise specifically authorized by the Project Manager. This work is considered incidental to the contract and no extra compensation will be paid.

94. **DEBRIS** Under no circumstance will any open fires be permitted within the City of Rockville. All debris will be removed and hauled from site (except when otherwise specifically authorized in the bid document) and disposed in accordance with Local, State and Federal laws in effect at the disposal site. No special compensation will be paid as all costs for off-site disposal shall be included in the applicable bid prices and considered incidental to the contract.
95. **CLEAN UP** In addition to any provisions regarding clean up in the bid document, clean up, including the restoration of areas of construction, shall proceed as quickly as is practicable. The period between construction and final clean up shall normally not exceed one week. If at any time during the course of the work the cleaning operation in any given area becomes delinquent in the opinion of the Project Manager, he may order that construction be stopped until such cleaning is completed. Any such order shall not extend the Final Completion date under this contract. Unless otherwise indicated, all materials razed, demolished, or otherwise removed from the work site shall become the property of the Contractor and shall be disposed of legally and properly off site at his expense.

Upon Final Completion of the work and before acceptance and final payment shall be made, the Contractor shall clean and remove from the street, footways, lawns, and adjacent property, all surplus and discarded materials, rubbish and temporary structures, restore in an acceptable manner all property, both public and private, which has been damaged during the prosecution of the work and shall leave the work area in a neat and presentable condition throughout the entire length of the project under contract.

If the Contractor fails to clean up at Final Completion of the work, the City may do so, and the cost thereof shall be charged to the Contractor.

INSURANCE REQUIREMENTS REV2 (09/08)

Prior to the execution of the contract by the City, the Contractor must obtain at their own cost and expense and keep in force and effect during the term of the contract including all extensions, the following insurance with an insurance company/companies licensed to do business in the State of Maryland evidenced by a certificate of insurance and/or copies of the insurance policies. The Contractor's insurance shall be primary. **The Contractor must electronically submit to the Purchasing Division a certificate of insurance prior to the start of any work.** In no event may the insurance coverage be less than shown below.

Unless otherwise described in this contract the successful contractor and subcontractors will be required to maintain for the life of the contract and to furnish the City evidence of insurance as follows:

MANDATORY REQUIREMENTS FOR INSURANCE

Contractor's insurance coverage shall be primary insurance as respects the City, its elected and appointed officials, officers, consultants, agents and employees and any insurance or self-insurance maintained by the City, shall be excess of the Contractor's insurance and shall not be called upon to contribute with it.

Type of Insurance	Amounts of Insurance	Endorsements and Provisions
1. Workers' Compensation 2. Employers' Liability	Bodily Injury by Accident: \$100,000 each accident Bodily Injury by Disease: \$500,000 policy limits Bodily Injury by Disease: \$100,000 each employee	Waiver of Subrogation: WC 00 03 13 Waiver of Our Rights to Recover From Others Endorsement signed and dated.
3. Commercial General Liability a. Bodily Injury b. Property Damage c. Contractual Liability d. Premise/Operations e. Independent Contractors f. Products/Completed Operations g. Personal Injury	Each Occurrence: \$1,000,000	City to be listed as additional insured and provided 30 day notice of cancellation or material change in coverage. CG 20 37 07 04 and CG 20 10 07 04 forms to be both signed and dated.
4. Automobile Liability a. All Owned Autos b. Hired Autos c. Non-Owned Autos	Combined Single Limit for Bodily Injury and Property Damage - (each accident): \$1,000,000	City to be listed as additional insured and provided 30 day notice of cancellation or material change in coverage. Form CA20 48 02 99 form to be both signed and dated.
5. Excess/Umbrella Liability	Each Occurrence/Aggregate: \$1,000,000	City to be listed as additional insured and provided 30 day notice of cancellation or material change in coverage.
6. Professional Liability	Each Occurrence/Aggregate: \$1,000,000	Non-Applicable

Alternative and/or additional insurance requirements, when outlined under the special provisions of this contract, shall take precedence over the above requirements in part or in full as described therein.

BUILDERS RISK INSURANCE

In addition to the insurance requirements contained above, a Builders Risk Insurance Policy with coverage limits equivalent to the amount of the construction materials, equipment and property, evidencing the Mayor and Council as an additional insured to the policy is also required.

POLICY CANCELLATION

No change, cancellation or non-renewed shall be made in any insurance coverage without a thirty (30) day written notice to the City Purchasing Division. The Contractor shall electronically furnish a new certificate prior to any change or cancellation date. The failure of the Contractor to deliver a new and valid certificate will result in suspension of all payments and cessation of on-site work activities until a new certificate is furnished.

ADDITIONAL INSURED

The Mayor and Council of Rockville, which includes its elected and appointed officials, officers, consultants, agents and employees must be named as an additional insured on the Contractor's Commercial and Excess/Umbrella Insurance for liability arising out of contractor's products, goods, and services provided under this contract. Additionally, The Mayor and Council of Rockville must be named as additional insured on the Contractor's Automobile and General Liability Policies. Endorsements reflecting the Mayor and Council of Rockville as an additional insured are required to be submitted with the insurance certificate.

SUBCONTRACTORS

All subcontractors shall meet the requirements of this Section before commencing work. In addition, Contractor shall include all subcontractors as insureds under its policies or shall furnish separate certificates and endorsements for each subcontractor. All coverages for subcontractors shall be subject to all of the requirements stated herein.

CERTIFICATE HOLDER

The Mayor and Council of Rockville

(Contract #, title)

City Hall

111 Maryland Avenue

Rockville, MD 20850

SPECIAL PROVISIONS

These Special Provisions are hereby made a part of the contract. In case of conflict with the terms and conditions or the Specifications of the City of Rockville, Montgomery County Government, the Washington Suburban Sanitary Commission, the Maryland State Highway Administration, the Maryland Department of the Environment or the Montgomery Soil Conservation District, the Special Provisions shall govern.

1. PROJECT DESCRIPTION AND SCOPE

This project includes work at the Twinbrook Community Center and Annex located at 12920 Twinbrook Parkway Rockville, MD 20850. This project includes renovation of existing restrooms in the Twinbrook annex building and the main community recreation center. The work in the Twinbrook Annex includes conversion of both the men's and women's restrooms into (3) separate ADA accessible gender-neutral restrooms and a separate electrical room.

In the main community recreation center the work includes the conversion of an existing office space and janitorial closet into an ADA gender neutral restroom with a shower. Work in both of these areas includes removal and installation of new plumbing fixtures, and electrical and mechanical work where affected by modified wall layouts.

The scope of work includes renovations in both buildings located within the Twinbrook Community Recreation Facility, the primary larger recreation building and the smaller annex building.

In the primary building the scope of work involves renovating an existing office and adjacent janitor's closet to become a new single use gender neutral restroom with a separate shower area. Demolition includes, but is not limited to, the removal of an existing partition, removal of doors and frames, demolition of the exiting slab on grade as required for the installation of new plumbing lines and a new shower floor, removal of floor and ceiling finishes, removal of a janitor's closet mop basin, removal of light fixtures, an electric heater, ceiling supply, return and exhaust diffusers and associated branch ductwork, sprinkler heads and branch lines, and other items as required for the new work.

The new work in the primary building includes but is not limited to the installation of new partitions, infill of openings, new doors, installation of privacy window film, restroom fixtures and accessories, a new shower, lockers, bench, new ceiling, wall and floor finishes, light fixtures, ceiling supply and exhaust diffusers and associated branch ductwork, sprinkler heads and branch lines, and other items as required for the new work.

In the annex building the scope of work involves converting the existing men's and women's rooms into three gender neutral restrooms, as well as a separate electrical closet. Demolition includes, but is not limited to, the removal of existing partitions, removal of doors and frames, removal of toilet partition systems, demolition of the exiting slab on grade as required for the installation of new plumbing lines, removal of ceiling finishes, removal of light fixtures, ceiling supply and exhaust diffusers and associated branch ductwork and other items as required for the new work.

The new work in the annex building includes but is not limited to the installation of new partitions, infill of openings, new doors, restroom fixtures and accessories, new ceiling and wall finishes, light fixtures, ceiling supply and exhaust diffusers and associated branch ductwork, and other items as required for the new work. The annex building scope also includes two add alternates-one for the installation of an adult changing station, and the other for the replacement of existing ceramic tile wall and floor finishes.

Main Community Recreation Center

- a) Removal Of The Existing Finishes And Plumbing Fixtures –
 - i. Removal of slop sink
 - ii. Removal of existing ceilings
 - iii. Removal of portions of existing floors (for floor drain and sanitary connections)
 - iv. Removal of existing light fixtures
 - v. Removal of partitions
- b) Installation Of New Fixtures –
 - i. Replacement of 1 water closets
 - ii. Replacement of 1 lavatories
 - iii. Replacement of 1 shower
 - iv. Replacement of ceilings
 - v. Replacement of light fixtures
 - vi. Replacement of partitions
 - vii. Repairs to floor
- c) Mechanical Work –
 - i. Mechanical work is limited to the installation of air diffusers.
- d) Electric Work –
 - i. Electrical work is limited to the replacement of existing light fixtures with LED fixtures and hand dryer which will be connected to the existing circuits.
- e) Plumbing Work –
 - i. Plumbing work includes the installation of new water closet, lavatory, shower and new floor drains with the associate modifications to supply and sanitary plumbing piping.

Annex Building

- f) Removal Of The Existing Finishes And Plumbing Fixtures –
 - i. Removal of 3 water closets
 - ii. Removal of 1 urinals
 - iii. Removal of 3 lavatories
 - iv. Removal of existing ceilings
 - v. Removal of portions of existing floors (for floor drain)
 - vi. Removal of existing light fixtures
 - vii. Removal of partitions
- g) Installation Of New Fixtures –
 - i. Replacement of 3 water closets
 - ii. Replacement of 3 lavatories
 - iii. Replacement of ceilings
 - iv. Replacement of light fixtures
 - v. Replacement of partitions
 - vi. Repairs to floor

h) Mechanical Work –

- i. Mechanical work is limited to the installation of air diffusers.

i) Electric Work –

- i. Electrical work is limited to the replacement of existing light fixtures with LED fixtures and hand dryers which will be connected to the existing circuits.

j) Plumbing Work –

- i. Plumbing work includes the replacement of plumbing fixtures and the installation of two new floor drains with the associate modifications to supply and sanitary plumbing piping.

2. CONTRACT TERM, PROJECT SCHEDULE & LIQUIDATED DAMAGES

The awarded Contractor shall commence work within 10 working days from the date of issuance of the Notice to Proceed (NTP). All work associated with this project must be completed within 120 calendar days after the notice to proceed has been issued.

Time is of the essence in completion of both projects and any delays from the agreed upon contract schedule dates will inconvenience the public and result in losses to the City. The loss and damages will be difficult to determine. By submitting a bid proposal (offer) in response to this IFB, the Bidder specifically agrees that if awarded a contract from this IFB and if the Bidder as an awarded contractor fails to complete the contract in accordance with its specifications, requirements and times, the amount of \$400.00 up to the total value of contract shall be deducted from the monies due the awarded Bidder (Contractor) for each intervening calendar day that the contract is not completed, not as a penalty, but as liquidated damages. However, the awarded Bidder (Contractor) will not be liable if failure to perform arises out of causes beyond its reasonable control and without fault or negligence of the awarded Bidder (Contractor).

The City shall recover such liquidated damages by deducting the amount thereof out of any moneys due or that may become due the Contractor, and if said moneys are insufficient to cover said damages.

3. CONTRACT EXTENSIONS

The City reserves the right to extend the contract with the awarded contractor for more than one year which may include additional work, change orders or other services where applicable.

4. NOTICE TO PROCEED AND COMPLETION SCHEDULE

The contractually specified completion date and time shown herein shall be strictly adhered to unless authorized or directed otherwise in writing by the Project Manager. The completion date, where specified, has an allowance for inclement weather and holidays. Time extensions for unusual conditions causing project delays not covered in these special provisions will be subject to the conditions covered under the GENERAL CONDITIONS AND INSTRUCTIONS TO BIDDERS; however, no compensation above that indicated herein for specific items shall be paid to the Contractor for any delay, regardless of the source of delay.

The Contractor shall provide a bar-chart schedule at the Project Kick-Off Meeting or at such time as directed by the Project Manager, but not more than once per month or with any change order. In addition, the contractor shall verbally provide updates to the Project Manager as requested.

The building will remain occupied throughout the construction period. Coordinate construction with the Project Manager to limit disturbance to building activities. All the work must be performed between the hours shown herein.

5. WORK HOURS

Work shall be limited to 6:30 a.m. to 4:30 p.m. Monday through Friday. No work shall be permitted outside these hours unless written approval is obtained from the Project Manager or their designee.

6. CONTRACT DOCUMENTS

In addition to the requirements of CITY OF ROCKVILLE MARYLAND GENERAL CONDITIONS AND INSTRUCTIONS TO BIDDERS CONSTRUCTION, in the case of discrepancies in the Contract Documents and need for interpretation, the documents shall be given precedence in the following order:

- a) Change Orders
- b) Addenda
- c) General Conditions and Instructions to Bidders (City of Rockville) Special Provisions
- d) Technical Specifications
- e) Special Provisions
- f) Drawings
- g) Standard Details by others
- h) City of Rockville Standard Details for Construction
- i) Applicable Standards listed below

Any questions, requests for information or revisions to the specifications must be reviewed and approved by the City of Rockville.

7. APPLICABLE CODES AND STANDARDS

As a minimum standard of quality workmanship, all work shall comply with the latest provisions and recommendation of the following documents in the following order of precedence. In the event of conflict, the City's determination shall govern.

- o Building Code – 2015 International Building Code
- o Energy Efficiency – 2015 International Energy Conservation Code
- o Life Safety Code – 2015 NFPA 1 Fire Code and 101 Life Safety Code
- o Accessibility – 2010 ADA Standards of Accessible Design & Maryland Accessibility Code (COMAR 05.02.02)
- o Mechanical – 2015 International Mechanical Code
- o Plumbing – 2015 International Plumbing Code
- o Electrical – 2014 National Electrical Code (NFPA 70)
- o Gas – 2015 International Fuel Gas Code
- o Sprinkler – 2013 NFPA 13 Fire Sprinkler Code
- o Fire Alarm – 2013 NFPA 72 Fire Alarm Code
- o City of Rockville Standards and Details for Construction, latest edition.
- o Washington Suburban Sanitary Commission, General Conditions and Standard Specifications, latest edition.
- o Montgomery County Department of Public Works and Transportation Design Standards, latest edition.
- o MDSHA “Standard Specifications for Construction and Materials” including all errata and addenda thereto and additions included in these special provisions, latest edition.
- o MDSHA Book of Standards and Standard Specifications for Construction and Material, latest edition.
- o MDE, WMA and SCS 2011 Maryland State and Specifications for Soil Erosion and Sediment Control, latest edition.
- o American Society for Testing and Materials, “ASTM Standards,” latest edition.
- o American Water Works Association Standards (AWWA Standards), latest edition
- o American Association of State Highway and Transportation Officials, “AASHTO Standards”, latest edition
- o American Concrete Institute (ACI) Standards, latest edition.

All references to the State of Maryland, State, S.R.C, State Roads Commission, State Highway Administration or Commission in the Special Provisions, Technical Specifications or Book of Standards shall be interpreted to refer to the City of Rockville.

8. PERMITS

The Contractor is responsible for applying for and securing all permits required for this project prior to construction, at no additional cost to the City. These permits include but are not limited to:

- City of Rockville Electrical Permits
- City of Rockville Plumbing Permits
- City of Rockville Mechanical Permits
- City of Rockville Fire Protection Systems Permits (Fire Alarm and Fire Sprinkler)

The Architect has applied for the Building Permit and the project has obtained conditional approval from the City's Inspection Services Division (ISD). Contractor is required to obtain all trade permits and responsible for all reporting, inspection requests, documentation and notifications associated with these permits. Compensation for implementation of the requirements of the above permits is to be included in appropriate bid items and no special compensation will be made.

Any City of Rockville Permit fees for the project will be waived by the City.

9. PROJECT KICK-OFF AND PRE-CONSTRUCTION CONFERENCE

Upon issuance of the Notice to Proceed, the City may arrange a project kick-off meeting with all appropriate City staff and the Contractor. This will be either a virtual or office-based meeting to review the project requirements. The City will decide which City staff will attend. The Contractor shall arrange a pre-construction meeting between the Contractor, the design engineer's representative, and appropriate City staff, including the Project Managers. These pre-construction meetings shall be held on the project site. All subsequent notifications for inspection and coordination with the City and all other agencies are the responsibility of the Contractor.

10. MOBILIZATION/DEMobilIZATION

Mobilization shall include all activities and costs for transportation of personnel, equipment, and operating supplies to and from the site; establishment of offices, and other necessary facilities for the Contractor's operations at the site; premiums paid for performance and payment bonds, including coinsurance and reinsurance agreements as applicable; and other items as specified in this specification. Demobilization shall include all activities and costs for transportation of personnel, equipment, and supplies not included in the contract from the site; including the disassembly, removal and site cleanup/repair of offices, buildings, and other facilities assembled on the site for this contract. This work includes mobilization and any additional mobilization and demobilization activities, and costs as required during the performance of the contract. The Contractor shall provide and pay all the cost for temporary utilities including electricity, telephone and water. All temporary facilities shall be available for the duration of the project. The Contractor shall be responsible for compliance with code ordinances and requirements of local officials for temporary facilities, controls, and related health and safety requirements. It shall be the responsibility of the Contractor to provide all necessary electrical service. In the event electrical power will not be available, it shall be the Contractor's responsibility to provide any necessary generator to continue construction. The Contractor shall provide and pay all the cost for toilet facilities for all workmen, as required by local ordinances for complete and adequate sanitary arrangements. Sanitary facilities and the surrounding shall be kept clean and neat at all times. They shall be located on the project site as approved by the City.

Payment for mobilization shall be made within the appropriate pay item and will not be made more than once, regardless of the fact that the Contractor may have, for any reason, shut the work down on the project or moved their equipment away from the project and then back again.

11. VALUE ENGINEERING

The City will consider Value Engineering Change Proposals in accordance with Maryland SHA 2017 Standard Specifications for Construction and Materials section TC-2.10.

12. EMERGENCY CONTACT INFORMATION

The Contractor shall provide the name(s) and phone number(s) of a representative(s) of the Contractor who can be reached in case of an emergency. This shall be submitted to the City prior to the start of construction.

13. ALTERNATE/EQUIVALENT EQUIPMENT OR MATERIAL

The Contractor may propose, in writing, to use alternate/equivalent equipment or material. The proposal should include a complete set of product specifications and justification for the substitution. The Contractor is responsible for all costs to review the proposal by the City's architect and/or engineer of record. The City will transmit the proposal to the architect and/or engineer of record that completed the design. The architect and/or engineer of record will submit a cost proposal that consists of a review and recommendation whether the substitution is acceptable. If the Contractor approves the architect's and/or engineer's cost proposal it will be accounted for in an appropriate change order.

14. CONTRACTOR SUPERVISION

The Contractor shall supervise and direct all work under the contract. A qualified individual shall be designated in writing to act on behalf of the Contractor. This individual shall be present on the site at all times as required to perform adequate supervision and coordination of the work, including work performed by subcontractors.

The Contractor shall appoint one or more crewmembers or supervisors to act as liaison with the City and emergency services personnel. All liaisons shall be fluently bilingual in English and the Contractor's employees' language(s), and at least one liaison shall be present at each work site at all times when any of the Contractor's employees or agents are at the site.

15. EMERGENCY INFORMATION

The Contractor shall post information concerning emergency medical, fire, rescue and hazardous waste phone numbers from which personnel on the site can obtain information if needed. The Contractor shall also list the name and number of a representative of the Contractor who can be reached in case of an emergency. The representative must be fluent in English. The emergency information shall be in a central position, located so it is visible and accessible 24 hours a day. The emergency information shall be posted for the entire length of the Contract.

16. PUBLIC UTILITIES

Comply with MDSHA Specifications under Sections GP 5.05, and GP 7.17 regarding public utilities.

It shall be the Contractor's responsibility to cooperate to the fullest extent possible with the utility owners in their work of adjusting the existing utilities to suit the proposed construction under this contract. All utilities, unless provided for on the contract drawings, shall be relocated or constructed by their respective owners.

The location of existing utilities shown on the plans and profiles are approximate only and it shall be the Contractor's responsibility to determine the exact location of the utilities prior to commencing work in all areas of possible conflict. All test pits must be completed in coordination with the City and the affected utility companies. The existence of utilities other than those shown on the plans is not known. If, during construction operations, the Contractor should encounter additional utilities, he shall immediately notify the City and take all necessary and proper steps to protect the continuance of service of such facilities.

The Contractor shall notify the utility owner and City when previously unknown or different utilities are encountered. The Contractor shall support and protect existing utilities whether or not shown on the plans at no additional cost to the City. The Contractor shall not receive compensation for the temporary relocation of or temporary installation of utilities that are constructed for the convenience of the Contractor.

In case of any damage to utilities by the Contractor, either above or below ground, the owner shall be immediately notified. The Contractor shall arrange for restoration of such utilities to a condition equal to that which existed before the damage was done, by repairing, rebuilding, or otherwise restoring as may be directed, and at the Contractor's entire cost and expense.

The Contractor shall take into consideration when preparing his bid, the costs associated with the coordination during construction with various utility companies for any relocation or installation by the utility companies which may be necessary in areas within, or adjacent to, the limits of his contract. No additional compensation or time extensions will be allowed the Contractor for work interruptions, changes in construction sequences, changes in methods of handling excavation and drainage, and changes in types of equipment used, made necessary by others performing work within, or adjacent to, the limits of this contract. The contract time as stated in this contract includes the time needed for utility adjustments and no extension of time will be granted for delays caused by utility adjustments.

All other expenses likely to be incurred by the Contractor as a result of working around and protecting utilities, as well as cooperating with the owners of same during the relocating of such facilities, will not be measured or compensated for under any stipulated pay item.

17. CONTACTS

The following utility companies and City departments may be affected by this project. It shall be the Contractor's responsibility to notify all utilities and/or City departments and coordinate his construction operations with them to avoid unnecessary delays.

City of Rockville

Facilities Property Manager

Mr. Noel Gonzalez
240-314-8728

City of Rockville

Superintendent of Parks and Facilities

Mr. Steve Mader
240 -314-8702

City of Rockville

Facilities Maintenance Specialist

Mr. Jason Beale
240-314-8726

City of Rockville

Community Center Supervisor

Mr. Khali Isreal
240-314-8832

City of Rockville

Water and Sewer Utilities

240-314-8567

MISS UTILITY

1-800-257-7777 or 811

Pepco

202-872-2845

Transcontinental Gas
410-465-0960

Verizon
855-983-1424

Washington Gas
844-927-4427

Washington Suburban Sanitary Commission (WSSC)
301-206-8650

For Locations of Utilities, call "MISS UTILITY" at 811, 1-800-257-7777 or <http://www.missutility.net/>

Before interfering with any utility service, the Contractor shall notify the affected utility companies and affected property owners in advance and coordinate any required service interruption with the owner and City. For any water service shut down, the Contractor must provide at least 21 calendar days' notice such that the City can provide proper notification.

The Contractor shall be responsible for contacting Miss Utility for the location of all utilities prior to the start of work.

18. PROTECTION OF WORK, PROPERTY AND PERSONS

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with this project. All necessary precautions shall be taken: to prevent injury to the Contractor's employees and other persons who may be affected by the project; to prevent damage to or loss of materials or equipment incorporated into the project; and to protect other property at or adjacent to the site including but not limited to trees, shrubs, lawns, walks, fences, pavements, roadways, utilities, structures, buildings, playgrounds and park facilities not designated for removal, relocation, or replacement in the course of construction; to provide warning signs as directed by the City for personnel and the public. Costs associated with this work are incidental to the work and no specific payments will be made.

19. SITE ACCESS

Access to the site is by public streets and thoroughfares. The Twinbrook Community Center and Annex is located at 12920 Twinbrook Parkway. Site access is as shown on the design plans.

20. PRESERVATION AND RESTORATION OF PROPERTY, ART & MONUMENTS

The Contractor shall be responsible for preservation, as well as all damages or injury to public or private 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 said work satisfactorily, or due to the non-execution of said work, or at any time due to defective work or materials. When or where any direct or indirect damage or injury is done to public or private property or on account of any act, omission, neglect or misconduct in the execution of the work or in consequence of the non-execution thereof on the part of the Contractor, the Contractor must restore, at its own expense, such property to a condition similar or equal to its current condition or otherwise restoring as may be directed by the City, or shall make good such damage or injury in an acceptable manner. In case of the failure on the part of the Contractor to restore such property in a reasonable amount of time, or make good such damage or injury the City may, upon 24 hours' notice, proceed to repair, replace, rebuild or otherwise restore such property as may be deemed necessary and the cost thereof will be deducted from any monies due or which may become due the Contractor under this Contract. City crews or another Contractor may accomplish said work.

After the completion of the project, all doors, flooring, walls, ceilings, furnishings, appliances, equipment, art, plants, as well as outdoor, lawns, walks, fences, pavements, roadways, utilities, art/monument structures, buildings, playgrounds, park facilities and other items not designated for removal, relocation or replacement

that are damaged by the Contractor's actions shall be restored to the same condition or better. Prior to any construction activities, it is the Contractor's responsibility to document any existing damage or conditions indicative of substandard facilities. The Contractor shall provide pre-project photographs or videotape of the project work areas to the Project Manager. Costs associated with this work are incidental to the work and no specific payments will be made, where all of the requirements outlined above shall be considered incidental to this contract and no special compensation shall be paid.

21. SITE CONDITIONS

The Contractor shall visit each work site prior to performing the work to verify the existing conditions. These conditions shall be photo documented prior to the start of construction.

22. CONTRACTORS STAGING AND STORAGE

The Contractor will establish temporary staging areas as approved by the City. The Contractor shall cleanup each staging area daily.

The Contractor shall submit a sketch (a marked up set of plans is acceptable) and brief description for approval by the Project Manager showing the location of equipment and materials,

There shall be no payment for this work. It shall be considered incidental to the appropriate pay item.

23. CONSTRUCTION STAKEOUT AND AS-BUILTS

Construction Stakeout shall be in accordance with Section 107 of the Maryland Department of Transportation, State Highway Administration's Standard Specifications for Construction and Materials, latest edition, with the following exceptions:

The Contractor shall be responsible for all construction stakeout. The Contractor shall complete project as shown on approved plans. The City will not provide any construction stakeout for this project. Contractors are to use benchmark and layout information as shown on the plans.

The Contractor shall provide as-built information. One set of redline as-builts shall be maintained and kept on-site at all times. Any deviations from approved plans shall be marked, in red, on the as-builts. As-built information shall consist of any deviation to the approved plan such as grading limits, slopes, types/length/height of restoration features, and any modifications to typical details. As-built requirements do not include any topographic survey.

Upon completion of project, submit as-builts for approval. Retainage shall not be released until as-builts are approved. The costs for stakeout and as-builts shall be considered incidental to the work and no specific payments will be made.

24. NOISE CONTROL MEASURES

All work must comply with the noise ordinance requirements for Montgomery County. A copy of the ordinance enforced by the Department of Environmental Protection (DEP) is attached to these contract documents in Appendix A for observation and compliance. With City approval, the Contractor may request a waiver through Montgomery County. The Contractor is fully responsible to submit the request and comply with any conditions of the waiver approval. The Contractor shall consider the processing time of this request, which includes a public notice element, when scheduling their work.

25. DAILY CLEAN-UP

The Contractor shall at all times keep the work areas clean and orderly and shall promptly remove all waste and rubbish. The daily debris shall be collected in covered containers and disposed of in proper fashion. All directions from authorized public officials having jurisdiction over health and safety shall be obeyed. The site will be "broom cleaned" at the end of each working shift. Open excavations may not be left unattended. Site must be secured each night.

26. SAMPLING AND TESTING OF MATERIALS

Unless provided elsewhere in the contract documents, all required sampling and material testing shall be the responsibility of the Contractor. No separate payment will be made, and the costs shall be incidental to the appropriate pay item.

The City reserves the right to test all materials and construction separate from and in addition to the specific requirements dictated in this contract.

Employment of a testing agency in no way relieves the Contractor of his responsibility and obligation to comply with all aspects of this contract and to perform all work in a proper, acceptable and workman like manner and doing all such work in full compliance with these contract documents.

27. SUBMITTALS OF MATERIALS:

The Contractor shall submit two (2) copies of all delivery tickets, shop drawings, inspection, testing or certification reports, obtained approvals or permits, and other submittals required for this project to the Project Manager.

Submittals shall be submitted electronically unless otherwise indicated in the specifications. See the applicable specifications section for submittal requirements and submittals required in association with Project Closeout documents.

28. INSPECTION AND CERTIFICATION:

All materials shall be subject to inspection or test by the City prior to installation and no previous certification or inspection shall bar rejection if the material is found to be inferior, damaged or defective. The certification requirements may be waived for any or all of the materials at the discretion of the City.

29. INSPECTION AND REPAIRS

The City reserves the right to inspect any and all work either in progress or completed. If the work is found to be unsatisfactory or in conflict with the provisions in these specifications the City may hold back payment for work completed. The Project Manager will give written notification of the unsatisfactory work to the contractor. The Contractor shall have no more than 10 days to correct the condition.

30. CONTRACTOR'S EMPLOYEES

Contractor's employees are to present a professional appearance, shall be neat, clean, well groomed, courteous, and conduct themselves in a respectable manner while performing duties and while on City and/or private property.

The Contractor's employees shall conduct themselves in a professional manner. They shall minimize their impacts to the surrounding properties, including when they arrive to the site, take breaks, eat lunch and depart the site. Contractor's employees shall be respectful and polite to inquiries from residents or individuals not associated with the project. Any inquiries beyond basic information should be referred to the City. The Contractor shall inform the City of any inquiries that occur that is beyond providing basic information.

The Contractor shall provide the City with a listing of all personnel assigned to the contract. In addition, the Contractor shall provide a listing of names, and emergency telephone numbers of supervisory personnel assigned to the contract. It will be the Contractor's responsibility to keep this list up to date.

The City reserves the right to request that the contractor remove any employee if it is determined that services are not being performed in accordance with the terms and conditions of the contract.

31. SUB-CONTRACTORS

The Contractor shall have the right to sub-contract but shall be fully responsible and cannot be relieved of any liability under this contract on account of any sub-contractor. All sub-contracting must have prior written City approval. The City reserves the right to approve or reject any sub-contractor.

Nothing contained in the contract documents shall create any contractual relationship between the owner and any subcontractor or sub-subcontractor. Vendors who will subcontract the delivery, installation, or any other portion of the work herein described will submit, prior to construction, the following information:

A description of the items to be subcontracted, and the subcontractor's name, address, and telephone number. During the life of the contract, the Contractor shall provide the name, nature, and extent of all subcontractors.

Subcontractors shall be considered an agent of the Contractor, who shall be held fully accountable for all of the subcontractor services, labor, and materials relative to the contract.

32. CHANGES IN WORK

If an event arises which the contractor considers may result in the addition, deletion or modification to the contract, the Contractor shall notify the City prior to commencing work under that change.

All such changes, or additional work must be authorized in writing by the City prior to starting such work.

33. INVOICES AND PAYMENT

The Contractor shall submit a detailed invoice to the Project Manager for payment at the end of each month for all work completed and accepted by the City during that month. The Contractor shall attach to each monthly invoice, all required documentation of testing results.

PROJECT MANUAL

Twinbrook Recreation Center Restroom Renovations

12920 Twinbrook Parkway, Rockville, MD 20852



PREPARED FOR:
City of Rockville

Delta Project No. 2019.331.012

February 5, 2024
100% Submission

PREPARED BY



DELTA ENGINEERS, ARCHITECTS, & LAND SURVEYORS, DPC
8401 Connecticut Avenue, Suite 350, Chevy Chase, MD 20815



SECTION 000110 – TABLE OF CONTENTS

DIVISION 0 – PROCURMENT AND CONTRACTING REQUIREMENTS

000110	TABLE OF CONTENTS
000115	LIST OF DRAWING SHEETS

DIVISION 1 – GENERAL REQUIREMENTS

011000	SUMMARY
011400	WORK RESTRICTIONS
013100	PROJECT MANAGEMENT AND COORDINATION
013300	SUBMITTAL PROCEDURES
014000	QUALITY REQUIREMENTS
014200	REFERENCES
014500	CONSTRUCTION QUALITY CONTROL
015000	TEMPORARY FACILITIES AND CONTROLS
015950	SAFETY AND HEALTH
016000	PRODUCT REQUIREMENTS
016400	SUBSTITUTIONS PRIOR TO OFFERING
016401	PRODUCT OPTIONS AND SUBSTITUTIONS AFTER EXECUTION OF CONTRACT
017000	EXECUTION REQUIREMENTS
017310	CUTTING AND PATCHING
017320	SELECTIVE DEMOLITION
017700	CLOSEOUT PROCEDURES
017810	PROJECT RECORD DOCUMENTS
017822	OPERATION AND MAINTENANCE DOCUMENTATIONS
018200	DEMONSTRATION AND TRAINING

DIVISION 2 – EXISTING CONDITIONS-NOT USED

DIVISION 3 – CONCRETE

033000	CAST-IN-PLACE CONCRETE

DIVISION 4- MASONRY

042000	UNIT MASONRY

DIVISION 5- METALS-NOT USED

DIVISION 6- WOOD, PLASTICS, AND COMPOSITES

061000	ROUGH CARPENTRY

DIVISION 7- THERMAL AND MOISTURE PROTECTION-NOT USED

DIVISION 8- OPENINGS

081113	HOLLOW METAL DOORS AND FRAMES
081416	FLUSH WOOD DOORS
087100	DOOR HARDWARE

DIVISION 9- FINISHES

092216	NON STRUCTURAL METAL FRAMING
092900	GYPSUM BOARD
093013	CERAMIC TILING
095113	ACOUSTICAL PANEL CEILINGS
096513	RESILIENT BASE AND ACCESSORIES
0991133	PAINTING

DIVISION 10-SPECIALTIES

102800	TOILET AND BATH ACCESSORIES
105126	PHENOLIC LOCKERS

DIVISION 11-EQUIPMENT - NOT USED

DISISION 12 – FURNISHINGS - NOT USED

DIVISION 13 – SPECIAL CONSTRUCTION - NOT USED

DIVISION 14- CONVEYING EQUIPMENT - NOT USED

DIVISION 21 - FIRE SUPPRESSION - NOT USED

DIVISION 22 - PLUMBING

224000	PLUMBING FIXTURES & EQUIPMENT

DIVISION 23 - HEATING, VENTILATING, AND AIR CONDITIONING (HVAC) - NOT USED

DIVISION 26 – ELECTRICAL

260050	COMMON WORK RESULTS FOR ELECTRICAL
260526	GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS
260533	RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS
265119	LED LIGHTING

DIVISION 27 – COMMUNICATIONS-NOT USED

DIVISION 28 – ELECTRONIC SAFETY AND SECURITY-NOT USED

DIVISION 31 – EARTHWORK-NOT USED

DIVISION 32 – EXTERIOR IMPROVEMENTS-NOT USED

DIVISION 33 – SITE UTILITIES-NOT USED

SECTION 000115- LIST OF DRAWING SHEETS

GENERAL

G-001	COVER SHEET
G-002	LEGENDS, ABBREVIATIONS AND NOTES

ARCHITECTURAL

A-101	PLANS
A-102	PLANS
A-103	EQUIPMENT PLAN
A-301	ELEVATIONS
A-601	SCHEDULES & DIAGRAMS

MECHANICAL

M-101	MECHANICAL AND PLUMBING PLANS

SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 PROJECT IDENTIFICATION

- A. Project Name and Location: Twinbrook Community Center Restroom Renovations, 12920 Twinbrook Pkwy Rockville MD 20851
- A. Project Summary Description: The project includes the renovation of the existing restrooms at Twinbrook Community Center Restroom in Rockville, Maryland. The project converts the existing men's and women's restrooms in the facility's annex building into three ADA accessible gender neutral restrooms. The project also converts an existing office and janitor's closet in the community center building into an ADA accessible gender neutral restrooms with a shower area.
- B. Architect: The term Architect refers to the project designer. The Architect's status relative to the construction will be delineated in writing by the Contracting Officer prior to the pre-construction conference. The project was designed by: Delta Engineers, Architects, and Land Surveyors, 8401 Connecticut Ave., Suite 350, Chevy Chase, MD, 20854, 301-718-0800; David Asofsky. All correspondence from the Contractor to the Architect will be through the Contracting Officer.
- C. The Project Officer for the project is Mr. Steve Mader of the City of Rockville.

1.2 WORK SEQUENCE

- A. The Work shall be conducted in phases, in the following order, with an earlier phase substantially complete before the beginning of the next phase.
- B. The work shall be substantially complete, ready for occupancy, within 150 calendar days after notice to proceed.

1.3 WORK UNDER OTHER CONTRACTS

- A. The Contractor shall cooperate with other contractors performing related work, including providing labor, materials and other costs necessary to satisfactorily coordinate the Contract work with work performed under other contracts.

1.4 MISCELLANEOUS PROVISIONS

- A. Work in the extension of existing conditions shall correspond in all respects with the existing conditions to which it connects, or to similar existing conditions, in materials, workmanship and finish.
- B. Alterations to Existing Conditions: Existing conditions shall be cut, drilled, removed, temporarily removed, or removed and replaced, as necessary for performance of work under the contract.

1. Replacements of existing conditions that are removed shall match similar existing conditions.
 2. Unless otherwise indicated, existing structural members shall not be cut or altered without authorization by the Project Officer.
 3. Conditions remaining in place, which are damaged or defaced during the work, shall be restored to the condition existing at time of award of contract.
 4. Discolored or unfinished surfaces exposed by removal of existing conditions, that are indicated to be final exposed surfaces, shall be refinished or replaced as necessary to produce uniform and harmonious contiguous surfaces.
- C. Existing structures will remain in place
- D. Existing structures have been or will be removed, at no expense to the Contractor, to top of foundation walls or ground level, unless otherwise indicated.
- E. Existing structures shall be removed to top of foundation walls or ground level, unless otherwise indicated.
- F. Existing utility services with related meters and equipment will remain in place.
- G. Existing utility services with related meters and equipment have been removed at no expense to the Contractor.
- H. Existing utility services shall be disconnected and removed to the extent indicated.
- I. Outside Utility Connections: Underground and overhead utility services shall be provided complete to all points of connection indicated, and any "Limit of Contract" lines or other general limits indicated shall not apply to utility services and connections outside of these lines or limits.

SPECIFICATION FORMATS AND CONVENTIONS

- J. Specification Format: The Specifications are organized into Divisions and Sections using the 16-division format and CSI/CSC's "Master Format" numbering system.
1. Section Identification: The Specifications use section numbers and titles to help cross-referencing in the Contract Documents. Sections in the specifications are in numeric sequence; however, the sequence is incomplete. Consult the table of contents at the beginning of the specifications to determine numbers and names of sections included in the Contract Documents.
- K. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.
 2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.

- a. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not applicable)

END OF SECTION 011000

SECTION 011400 - WORK RESTRICTIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section documents conditions and procedures on the City of Rockville park that may impact the performance of work by the contractor including the following:
 - 1. Contractor use of premises
 - 2. City of Rockville occupancy of adjacent spaces
 - 3. City of Rockville occupancy prior to substantial completion
 - 4. Working hours
 - 5.
- B. Related Sections: This specification section is related to any and all specification sections with explicit or implicit reference to work restriction documentation including but not limited to the following Division 1 specification sections:
 - 1. Division 1 Section "Summary"
 - 2. Division 1 Section "Project Management and Coordination"
 - 3. Division 1 Section "Construction Progress Documentation"
 - 4. Division 1 Section "Submittal Requirements"
 - 5. Division 1 Section "Quality Requirements"
 - 6. Division 1 Section "Construction Quality Control"
 - 7. Division 1 Section "Temporary Facilities and Controls"
 - 8. Division 1 Section "Safety and Health"
 - 9. Division 1 Section "Execution Requirements"
 - 10. Division 1 Section "Cutting and Patching"
 - 11. Division 1 Section "Selective Demolition"
 - 12.
 - 13. Division 1 Section "Closeout Procedures"
 - 14. Division 1 Section "Project Record Documents"

1.3 CONTRACTOR USE OF PREMISES

- A. The Project Officer will conduct a pre-construction survey with the Contractor to review and document the existing conditions surrounding the project premises prior to the beginning of any construction activity.
- B. During the construction period, the Contractor shall have full use of the premises for construction operations, including full use of the site as defined in the contract documents, limited only by the right of CITY OF ROCKVILLE to perform work or retain other contractors to perform work on portions of the project

- C. The Contractor shall limit use of the site and premises to the work in areas indicated in the contract documents, to allow for City of Rockville occupancy and public use.
- D. The Contractor shall schedule his work so as to cause the least amount of interference with City of Rockville campus operations. All work schedules shall be approved by the Project Officer.
- E. Permission to interrupt any building services and/or utility services shall be requested in writing a minimum of fifteen (15) working days prior to the desired date of interruption. City of Rockville reserves the right to refuse any request and to schedule such interruption on a later or earlier date and time which is mutually agreeable to City of Rockville and the Contractor.
- F. The Contractor, his employees and all subcontractors shall become familiar with and comply with all City of Rockville regulations, including fire, traffic, safety, and security regulations.
- G. All personnel employed by the Contractor or subcontractors and working on the City of Rockville campus shall keep within the limits of the work and avenues of ingress and egress. Entry to any restricted area is strictly forbidden unless they are required to do so and are cleared for such entry in writing by the Project Officer.
- H. The Contractor's equipment shall be conspicuously marked for identification purposes.
- I. Confine operations at the site to areas indicated. Do not disturb portions of the site beyond the areas in which work is indicated.
- J. Keep driveways and entrances serving the premises clear and available at all times to City of Rockville employees and visitors. Do not use these areas for parking or storage of materials.
- K. Lock automotive type vehicles, such as trucks or other mechanized or motorized construction equipment, when parked and unattended so as to prevent unauthorized use. Do not leave such vehicles or equipment unattended with the motor running or the ignition key in place.
- L. Schedule deliveries to minimize space and time requirements for storage of material and equipment on site.
- M. Maintain existing building in a safe and weather tight condition throughout the construction period. Provide temporary heating and cooling as required to keep indoor temperatures between 65 degrees F and 80 degrees F. A heating and cooling plan shall be submitted to the Project Officer within 14 calendar days of the Notice to Proceed for approval.
- N. Repair damage caused by construction operations. Take precautions to protect the building, its occupants and the public during the construction period.
- O. Keep public areas, such as hallways, stairs, lobbies and toilet rooms, free from accumulation of waste material, rubbish, construction debris, and construction materials and remove such daily.
- P. For all work in Building 10/ACRF, all demolition and construction debris shall be taken to the construction dumpster at the B2 level East loading dock only.
- Q. The Contractor will not be allowed any storage area, other than within the limits of construction. Coordinate the storage of materials to maintain safe passage and emergency egress through the site at all times. If additional storage is necessary, obtain and pay for such storage off site. Payment for stored materials will not be permitted.

- R. Existing materials and equipment that are removed as part of the construction operations, and that are not reused or designated to be salvaged as City of Rockville or other's property, shall be removed from the site. Storage or sale of excess salvageable materials and equipment is not permitted on site.

1.4 CITY OF ROCKVILLE OCCUPANCY OF ADJACENT PREMISES

- A. City of Rockville will occupy the site and the existing building areas immediately adjacent to the construction site during the entire period of construction, unless otherwise specified.
 - 1. Cooperate with City of Rockville representatives during construction operations to minimize conflicts and facilitate City of Rockville usage. Perform the work in a manner that does not interfere with City of Rockville operations. Delays may be incurred. If the Project Officer determines that the safety and health of building occupants is in jeopardy, the Contractor must modify his construction plan and procedures to avoid the potential hazard before continuing with construction.
 - 2. Some areas within the limits of the contract may be occupied during performance of work under this Contract. In addition, City of Rockville reserves the right to complete the work not specifically in this contract, but within the physical limits of the contract, by City of Rockville or City of Rockville contract personnel.

1.5 CITY OF ROCKVILLE OCCUPANCY PRIOR TO SUBSTANTIAL COMPLETION

- A. City of Rockville reserves the right to occupy and to place and install equipment in completed areas of the building prior to Substantial Completion, provided such occupancy does not interfere with completion of the work. City of Rockville installation of equipment and partial occupancy shall not constitute acceptance of the total work.
 - 1. Prior to partial City of Rockville occupancy, mechanical and electrical systems for the space shall be fully operational, and required inspections and tests shall be successfully completed. Upon occupancy, City of Rockville will operate and maintain mechanical and electrical systems serving the occupied portions of the building.
 - 2. Upon occupancy, City of Rockville will assume responsibility for maintenance and custodial service for the occupied portions of the building.
 - 3. The warranty period for the occupied portion of the building only will commence on the date of occupancy by City of Rockville.

1.6 WORKING HOURS

- A. Contractor's General Working Hours: The normal work day is between the hours of 6:30am to 4:30pm Monday through Friday, except for the holidays and other times as listed in Section H of the Contract.
- B. Work shall not be performed during other than General Working Hours except when such timeliness of performance is required to safeguard life or property. Other deviations may be authorized by the Project Officer.
- C. Requests for deviations from General Working Hours, including work on holidays, shall be submitted in writing to the Project Officer not less than fifteen (15) calendar days in advance of the proposed work period. Once approved, the schedule must be delivered to the City of Rockville prior to the start of work.

City of Rockville
Twinbrook Recreation Center Restroom Renovations

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 011400

SECTION 012300 - ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for alternates.

1.3 DEFINITIONS

- A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be added to or deducted from the base bid amount if the Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
 - 1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
 - 2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternates into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

- A. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
 - 1. Include, as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation, whether or not indicated as part of alternate.
- B. Execute accepted alternates under the same conditions as other Work of the Contract.
- C. Schedule: A Part 3 "Schedule of Alternates" Article is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

A. Alternate No. 1.

1. Base Bid: Retain, patch and repair existing ceramic tile floor, base and full height walls in rooms ANX-1, ANX-3, and ANX4. Patch and repair to match existing where required.
2. Alternate 1: Remove existing ceramic tile floor, base and full height walls in rooms ANX-1, ANX-3, ANX4. Replace with new ceramic tile floor, base and full height walls as indicated in the drawing and specifications.

B. Alternate No. 2.

1. Base Bid: Provide no adult changing station in room ANX-1.
2. Alternate 2: Provide adult changing station in room ANX-1.

END OF SECTION 012300

SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS.

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

1.2 SUMMARY

- A. This Section includes administrative provisions for managing and coordinating construction operations including, but not limited to, the following:

1. General project coordination.
2. Utility service interruptions.
3. Coordination drawings.
4. Conservation.
5. Administrative and supervisory personnel.
6. Conferences and meetings.
7. Cleaning and protection.

- B. Related Sections: This specification section is related to any and all specification sections with explicit or implicit reference to project management and coordination. Specific submittal requirements of these related specification sections are not included in this section. Related sections include but are not limited to the following specification sections:

1. Division 1 Section "Summary"
2. Division 1 Section "Work Restrictions"
3. Division 1 Section "Construction Progress Documentation"
4. Division 1 Section "Submittal Procedures"
5. Division 1 Section "Quality Requirements"
6. Division 1 Section "Construction Quality Control"
7. Division 1 Section "Temporary Facilities and Controls"
8. Division 1 Section "Safety and Health"
9. Division 1 Section "Product Requirements"
10. Division 1 Section "Execution Requirements"
11. Division 1 Section "Cutting and Patching"
12. Division 1 Section "Selective Demolition"
13. Division 1 Section "Closeout Procedures"
14. Division 1 Section "Project Record Documents"
15. Division 1 Section "Operation and Maintenance Documentation"
16. Division 1 Section "Demonstration and Training"

1.3 GENERAL PROJECT COORDINATION

- A. Coordination of Trades: Coordinate construction operations included in the various sections of the Specifications to provide an efficient and orderly installation of each part of the Work. Coordinate construction operations included under different sections of the Specifications that depend on each other for proper installation, connection or operation.

1. Schedule construction operations in the sequence required to obtain the best results where the installation of one part of the work depends on installation of other components before or after that part.
 2. Coordinate installation of different components to provide maximum accessibility for required maintenance, service, removal/installation of component parts, testing and repair.
 3. Accommodate items scheduled for later installation.
 4. Provide for coordinated incorporation of Contractor's accepted Value Engineering proposals and Change Orders.
 5. Locate pipes, conduits, ducts, equipment, and their related supports so that they do not interfere with the intended use of lifting devices for adjacent equipment and components.
- B. Notification: Where required by this section and others, prepare and distribute memoranda to each party performing work at the project site, outlining special procedures required for coordination, including required notices, reports, attendance at meetings and meeting minutes as part of the memoranda.
- C. Administrative Procedures: Coordinate scheduling and timing of administrative procedures with other construction activities to avoid conflicts and promote orderly progress of the work. Administrative procedures include but are not limited to the following:
1. Preparation of schedules.
 2. Installation and removal of temporary facilities and controls.
 3. Delivery and processing of submittals.
 4. Progress meetings.
 5. Preinstallation conferences
 6. Project closeout activities.

1.4 COORDINATION DRAWINGS

- A. Prepare coordination drawings when specified, where careful coordination is needed for installation of products and materials fabricated by separate entities, or where limited space availability necessitates maximum utilization of the space for efficient installation of different components.
1. Show the relationship of components shown on separate shop drawings.
 2. Indicate required installation sequences.
 3. Provide vertical and horizontal dimensions necessary to locate each component and avoid conflicts within the space.
 4. Comply with shop drawing requirements for sheet size and submittal methods specified in Division 1 Section "Submittal Procedures."
 5. Refer to Division 2-16 technical specification sections for specific Coordination Drawing requirements.
- B. Refer to Division 15 Section "Basic Mechanical Requirements" and Division 16 Section "Basic Electrical Requirements" and coordinate coordination drawing requirements for specific mechanical and electrical installations.
- C. Provide coordination drawings for equipment and system installations in mechanical and electrical rooms and spaces where two or more entities will provide the work and separate shop drawings are insufficient to show coordination.

1.5 CONSERVATION

- A. Consider conservation of energy, water and materials in the conduct of construction operation. Salvage materials and equipment involved in the performance of, but not incorporated into, the work.
- B. Energy Conservation Plan:
 - 1. Develop a program to minimize use of energy. Program shall minimally include the following written information (Energy Conservation Plan):
 - a. Designation of an energy conservation officer as a part time position.
 - b. Identification of energy conservation measures to reduce energy usage.
 - c. Establishment of energy usage goals for the project.
 - d. Means for enforcing energy conservation measures.
 - 2. Contractor's energy conservation officer shall provide on-site instruction of workers in the methods to conserve energy, and shall manage the energy conservation program for the duration of the Contract.
 - a. Contractor shall initiate the plan by issuing notices to the parties of the project, installation of meters or other instruments to record usage where required, and other measures to encourage energy conservation.
 - b. The energy conservation officer shall report monthly, in writing, the measures taken to effect energy conservation, records or estimates of usage and savings, and other points of interest. Copies of each report shall be distributed to each significant party of the project, including the Contracting Officer.
 - c. Post copies of the plan in conspicuous locations so that all personnel employed on the Project may be made aware of the need to conserve energy at all times.
- C. Recycled Waste Management Plan:
 - 1. Establish and document a program to maximize recycling of waste materials. Program shall minimally include the following written information:
 - a. Designation of a waste management coordinator. Based on the workload required this may be a part-time function.
 - b. Identification of recyclable materials.
 - c. Identification of available local recycling firms and agencies to receive recyclable materials.
 - d. Establishment of quantity goals for collection of each recyclable material.
 - e. Designation of one or more locations on the project site for collection, sorting and temporary storage of recyclable materials.
 - f. Means and schedule for transporting and delivery of recyclable materials to recycling firms and agencies.
 - 2. Contractor's waste management coordinator shall provide on-site instruction of workers in the identification, separation and handling of recyclable materials, and shall manage the process for the duration of the Contract.
 - a. Contractor shall lay out and define specific areas to facilitate separation of materials for recycling, and shall maintain collection bins clearly marked to avoid contamination of the recyclable materials.
 - b. The waste management coordinator shall report monthly, in writing, the quantity of each recyclable material collected during the previous month and cumulatively to

date, compared to the quantity goal, and other points of interest. Copies of each report shall be distributed to each significant party of the project, including the Contracting Officer.

1.6 SUBMITTALS

- A. Staff Names: Within 14 calendar days of the start of site operations, submit a list of principal staff assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home and office telephone numbers. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.
 - 1. Post copies of list in Project meeting room, in temporary field office, and by each temporary telephone.
 - 2. Provide updated lists when individuals assigned to positions change or positions are added to the contractor's staff team.
- B. Meeting minutes: The contractor shall provide meeting minutes from the following meeting as required by this section. Additional meeting minutes requirements may be located in other sections.
 - 1. Preconstruction Conference.
 - 2. Preinstallation Conferences.
 - 3. Progress meetings.
 - 4. Coordination Meetings

1.7 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

- A. In addition to the Project Superintendent, the Contractor shall provide other administrative and supervisory personnel as required for proper performance of the work.
- B. Project Coordinator: Provide a full-time project coordinator, experienced in the administration and supervision of building construction, including mechanical and electrical work. The project coordinator shall be authorized to act as the coordinator of construction activities, including but not limited to the following:
 - 1. Scheduling and sequencing of work.
 - 2. Sharing access to work spaces.
 - 3. Installations.
 - 4. Protection of work.
 - 5. Cutting and patching.
 - 6. Selections for compatibility.
 - 7. Preparation of coordination of drawings.
 - 8. Inspection and tests.
 - 9. Temporary services and facilities.
 - 10. Conduct Project Coordination Meetings
 - 11. Commissioning
- C. Mechanical and Electrical Coordinator: Provide a full-time mechanical and electrical coordinator, experienced in the coordination of mechanical and electrical construction of the types required for the project, and experienced in coordination of mechanical and electrical construction with other operations. The mechanical and electrical coordinator shall be licensed to practice as a professional engineer in the location of the project, and shall be authorized to act as the coordinator for mechanical and electrical activities, including but not limited to the following:

1. Scheduling and sequencing of mechanical and electrical activities.
 2. Sharing access to mechanical and electrical work spaces.
 3. Integration of mechanical and electrical work into limited spaces available for mechanical and electrical installations.
 4. Protection of mechanical and electrical work.
 5. Cutting and patching for mechanical and electrical work.
 6. Tolerances for mechanical and electrical work.
 7. Preparation of mechanical and electrical coordination drawings.
 8. Mechanical and electrical inspections and tests.
 9. Utilization of mechanical and electrical temporary services and facilities.
- D. Safety and Health Officer: Provide a safety and health officer whose duties shall consist of developing and implementing safety and health programs specified in Division 1 Section "Safety and Health."
- E. Energy Conservation Officer: Provide an energy conservation officer whose duties shall consist of developing and implementing a program for minimizing use of energy on the site.
- F. Waste Management Coordinator: Provide a waste management coordinator whose duties shall consist of developing and implementing a program for maximizing recycling of waste.
- G. Integrated Pest Management Quality Control Supervisor: Provide an Integrated Pest Management Quality Control Supervisor with duties as indicated in Division 1 Section "Temporary Facilities and Controls."
- H. Traffic Safety Supervisor: Provide a Traffic Safety Supervisor with duties as indicated in Division 1 Section "Temporary Traffic Controls."

1.8 CONFERENCES AND MEETINGS

- A. Preconstruction Conference:
1. The Contractor shall attend a preconstruction conference scheduled by the Project Officer at a time and place convenient to both parties. Work shall not commence prior to the conference. Conference shall review responsibilities and personnel assignments.
 2. Attendees: Participants at the conference shall be familiar with the project, shall be authorized to conclude matters relating to the Work, and at a minimum include representatives of the following parties or their designated representatives:
 - a. Contracting Officer.
 - b. Architect.
 3. Agenda: Subjects for discussion shall include items of significance that could effect progress, including but not limited to the following:
 - a. Tentative construction schedule.
 - b. Critical work sequencing.
 - c. Designation of responsible personnel.
 - d. Procedures for processing field decisions and Change Orders.
 - e. Procedures for processing Applications for Payment.
 - f. Submittal of Shop Drawings, Product Data, and Samples.

- g. Preparation of Record Documents.
 - h. Use of the premises.
 - i. Parking availability.
 - 4. Reporting: No later than 3 calendar days after the conference, the Contractor shall distribute minutes of the conference to each party present and to other concerned parties, including the Contracting Officer.
 - 5. This meeting may satisfy the requirement for a Preconstruction Safety Meeting in Division 1 Section "Safety and Health."
- B. Progress Meetings: The Project Officer shall conduct bi weekly progress meetings at the Project Site. Dates of meetings shall be coordinated with preparation of the payment request.
 - 1. Attendees: In addition to the Contractor and Project Officer, each subcontractor, supplier, or other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented. All participants at the conference shall be familiar with the Project and authorized to conclude matters relating to the Work. The Project Officer shall include the Contracting Officer and/or the project designer in these meetings as required. The contractor is responsible for requesting the Contracting Officer and/or designer attend and provide justification to the Project Officer.
 - 2. Agenda: Review and correct or approve minutes of the previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to the status of the Project.
 - 3. Contractor's Construction Schedule: Review progress since the last meeting. Determine where each activity is in relation to the Contractor's Construction Schedule, whether on time or ahead or behind schedule. Determine the required contractor response to construction behind schedule; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to insure that current and subsequent activities will be completed within the Contract Time.
 - a. At each progress meeting, the Contractor will provide a list of construction activities completed in the previous 14 (fourteen) calendar days, activities in progress with percent completed, activities scheduled to start in the next seven calendar days, and activities to start in the next thirty calendar days as derived from the accepted project schedule.
 - b. Schedule Updating: The Contractor shall revise the Contractor's Construction Schedule to reflect project progress after each progress meeting and include revisions approved by the Contracting Officer.
 - c. The revised schedule shall be issued monthly to correspond with the submission of the Contractor's application for payment.
 - 4. Reporting: No later than 3 calendar days after each meeting, the Contractor shall distribute minutes of the meeting to each party present and to other concerned parties who should have been present, including the Contracting Officer. Include a brief summary, in narrative form, of progress since the previous meeting and report.
 - 5. The Contractor shall present Record Drawings at progress meetings for review by the City of Rockville, if so requested.
 - 6. The Progress meeting may be in conjunction with the Quality Control (QC) Meeting required per Division 1 Section "Construction Quality Control."
- C. Coordination Meetings: The Contractor's Project Coordinator shall conduct weekly project coordination meetings as required, to verify detailed coordination procedures for the upcoming construction operations in order to avoid potential problems and misunderstandings.

1. Attendees: In addition to the Contractor and Project Officer, each subcontractor, supplier or other entity involved in coordination or planning construction activities shall be represented. All participants shall be authorized to conclude matters relating to the work.
2. Agenda: Review the plans and requirements of each entity present, including but not limited to the subjects listed for Progress Meetings.
3. Reporting: No later than 3 calendar days after each meeting, the Contractor shall distribute minutes of the meeting to each party present and to other concerned parties who should have been present, and including the Contracting Officer. Include a brief summary, in narrative form, of progress since the previous meeting and report.

PART 2 - PRODUCTS (Not applicable)

PART 3 - EXECUTION

3.1 GENERAL COORDINATION PROVISIONS

- A. Inspection of Conditions: Prior to installations, require the installer of each major component to inspect both the substrate and conditions under which work is to be performed.
 1. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.
 2. Coordinate temporary enclosures with required inspections and tests to minimize the necessity of uncovering completed construction for that purpose.
- B. Construction in Progress: Keep construction in progress, adjoining materials in place, and adjoining materials clean during handling and installation. Apply protective coverings where required for protection from damage or deterioration.
- C. Completed Construction: Clean completed construction, and provide maintenance, as frequently as necessary to prevent damage or soiling or other deterioration through the remainder of the construction period. Adjust and lubricate operable components as necessary to assure operability without damage.

END OF SECTION 013100

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes certain administrative and procedural requirements for shop drawings, coordination drawings, fire protection working plans, schedules, samples and certain other quality assurance submittals.
- B. Related Sections: This specification section is related to any and all specification sections with explicit or implicit reference to submittals. Specific submittal requirements of these related specification sections are not included in this section. Related sections include but are not limited to the following specification sections:
 - 1. Division 1 Section "Summary"
 - 2. Division 1 Section "Project Management and Coordination"
 - 3. Division 1 Section "Quality Requirements"
 - 4. Division 1 Section "References"
 - 5. Division 1 Section "Construction Quality Control"
 - 6. Division 1 Section "Temporary Facilities and Controls"
 - 7. Division 1 Section "Temporary Traffic Controls"
 - 8. Division 1 Section "Safety and Health"
 - 9. Division 1 Section "Product Requirements"
 - 10. Division 1 Section "Execution Requirements"
 - 11. Division 1 Section "Cutting and Patching"
 - 12. Division 1 Section "Selective Demolition"
 - 13. Division 1 Section "Closeout Procedures"
 - 14. Division 1 Section "Project Record Documents"
 - 15. Division 1 Section "Operation and Maintenance Documentation"
 - 16. Division 1 Section "Demonstration and Training"

1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information that is specified in the contract documents as requiring City of Rockville approval or other City of Rockville action.
- B. Informational Submittals: Written and graphic information that is not specifically indicated as requiring City of Rockville approval or other City of Rockville action but is indicated as a submittal in the specifications. Informational submittals may be rejected by City of Rockville for not complying with requirements.
- C. Shop drawings: Drawings and schedules specifically prepared for the project, except for coordination drawings.

- D. Coordination drawings: See Division 1 Section "Project Management and Coordination" For definition and contract requirements.
- E. Product data: Manufacturer's standard catalogs, pamphlets and other printed materials, and includes but is not limited to the following:
 - 1. Product specifications
 - 2. Installation instructions
 - 3. Color charts
 - 4. Catalog cuts
 - 5. Rough-in diagrams and templates
 - 6. Wiring diagrams
 - 7. Performance curves
 - 8. Operational range diagrams
 - 9. Mill reports
- F. Samples: Product samples of such scale to allow delivery for review, as well as field samples or mock-ups of full-size physical examples erected on-site or elsewhere, or establish a true-scale standard by which the corresponding work will be judged or a standard for compliance testing.
- G. Other quality assurance submittals include materials specifically prepared for the project, except drawings and schedules, and include but are not limited to the following:
 - 1. Design data and calculations
 - 2. Certifications of compliance or conformance
 - 3. Manufacturer's instructions and field reports

1.4 GENERAL SUBMITTAL REQUIREMENTS

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities and with the Submittal Schedule specified in Division 1 Section "Construction Progress Documentation."
- B. All submittals will be certified by the Contractor as conforming to the requirements of the contract documents prior to being forwarded to the Contracting Officer.
 - 1. Submittals identified with a "G" adjacent to the requirement on the submittal register are action submittals and require City of Rockville approval prior to the product or item submitted being incorporated into the project.
 - 2. Submittal requirements without the action designation are informational submittals and should be submitted for information prior to the product or item submitted being incorporated into the work.
- C. All submittals shall be transmitted to the Contracting Officer within 30 calendar days after receipt of Notice to Proceed, unless the approved Submittal Schedule specifically provides for an earlier or later submission. Transmit each submittal sufficiently in advance of the scheduled performance of related construction activities to avoid delaying the work, allowing for the review times specified in this section.
- D. Coordinate each submittal with other submittals and related activities that require sequential scheduling, to allow for testing, purchase, fabrication and product delivery in a timely manner.

- E. Schedule transmittal of different categories of submittals for the same Definable Feature of Work (DFOW) and for different elements of related parts of the work at the same time so as to minimize delay because of the need to review submittals concurrently for coordination. See Division 1 Section "Construction Quality Control" for definition of DFOV
 - 1. City of Rockville reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- F. Allow sufficient time for submittal review, corrections following the initial review and resubmittal review before activities scheduled after the submittal approval.
 - 1. Preliminary submittal review: Allow 14 calendar days from receipt by City of Rockville the submittal for preliminary review
 - 2. Any resubmission required after City of Rockville review shall be made within 14 calendar days after return of the submittal, unless specifically authorized otherwise by the Project Officer.
 - 3. Resubmittal review: Allow 14 calendar days from receipt by City of Rockville of the submittals for the initial review. If consultants are included in the review process add an additional 14 for review.
 - 4. Special Review Timelines:
 - a. Provide not less than 30 calendar days for review of each fire protection submittal and resubmittal.
- G. Construction will generally not be allowed to proceed without approved submittals. The Contracting Officer may, as requested in writing on a case-by-case basis, allow construction to proceed with submittal approval pending. Failure by the Contractor to provide the required submittals in a timely manner will not result in an extension to the Contractor's Construction Schedule.
- H. Failure by the Contractor to provide the required submittals in a timely manner may result in progress payment requests being returned to the Contractor until submittals are up-to-date.
- I. Submittal Preparation: Identify and prepare drawings and samples as specified in the Construction Contract Clauses and other specification sections. Provide a permanent label on each submittal with the following information:
 - 1. Project name, contract number and work request number.
 - 2. Date of submission
 - 3. Name, address and telephone number of firm or entity that prepared the submittal.
 - 4. Name, address and telephone number of the Contractor.
 - 5. Name, address and telephone number of the subcontractor, supplier or manufacturer.
 - 6. Number and title of appropriate specification section.
 - 7. Drawing number and detail references, as appropriate.
 - 8. Space to record Contractor's review and approval markings approximately 5 by 5 inches (250 by 250 mm).
 - 9. A blank page with a listing of all pages in the submittal shall be attached to the front of the submittal package with at least a 4" by 6" space for the City of Rockville.
- J. Submittal Transmittal: Package each submittal for transmission and handling. Transmit each submittal from the Contractor to the Contracting Officer by use of a transmittal form. The following minimum information shall be included on the transmittal form.
 - 1. Project name and number.
 - 2. Date

3. Destination (To:)
 4. Source (From:)
 5. Names of subcontractor, manufacturer and supplier, as applicable.
 6. Category of submittal
 7. Description of submittal
 8. Number and title of appropriate specification section.
 9. Submittal number, including means to separately identify initial submittal and each resubmittal.
 10. Certification by Contractor stating that submittal complies with the Contract Documents, or statement of deviations from the requirements of the Contract Documents including minor variations and limitations. Deviations may be listed on an attached sheet referenced on the transmittal form.
 11. Signature of transmitter.
- K. Direct Transmittal to Consultant: When allowed by the Project Officer, submittals may be transmitted directly to design Engineer's consultants, provide duplicate copy of transmittal to A&E's and Project Officer. The consultant will return submittal to the Engineer for return to the Contractor.
- L. Certifications: Submit notarized certifications from the party certifying compliance of the submittal with specified requirements. Certifications shall be signed by an officer or other individual authorized to sign documents on behalf of the company certifying compliance. Certifications shall be as described in Division 1 Section "Construction Quality Control."
- M. Delegated-Design Submittal: Comply with requirements in Division 1 Section "Quality Requirements."
- N. Contractor's Construction Schedule: Comply with requirements in Division 1 Section "Construction Progress Documentation."
- O. Submittal Schedule: Comply with requirements in Division 1 Section "Construction Progress Documentation."

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

- A. General: Prepare and submit Action Submittals required by individual Specification Sections.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
 2. Mark each copy of each submittal to show which products and options are applicable to the project.
 3. Include the following information, as applicable:
 - a. Manufacturer's written recommendations.
 - b. Manufacturer's product specifications.
 - c. Manufacturer's installation instructions.
 - d. Standard color charts.
 - e. Manufacturer's catalog cuts.

- f. Wiring diagrams showing factory-installed wiring.
 - g. Printed performance curves.
 - h. Operational range diagrams.
 - i. Mill reports.
 - j. Standard product operating and maintenance manuals.
 - k. Compliance with recognized trade association standards.
 - l. Compliance with recognized testing agency standards.
 - m. Application of testing agency labels and seals.
 - n. Notation of coordination requirements.
 - o. Notation of dimensions verified for fit by field measurements.
 - 4. Number of Copies: Submit four copies of each submittal, unless otherwise indicated. City of Rockville will return two copies. Mark up and retain one returned copy as a Project Record Document.
 - 5. Number of Copies: Submit copies of each submittal, as follows, unless otherwise indicated:
 - a. Preliminary Submittal: Submit a single copy of each submittal where selection of options, color, pattern, texture, or similar characteristics is required. City of Rockville will return submittal with options selected.
 - b. Initial Submittal: Submit five copies, unless copies are required for operation and maintenance manuals. Submit five copies where copies are required for operation and maintenance manuals. City of Rockville will retain two copies; remainder will be returned. Mark up and retain one returned copy as a Project Record Document.
- C. Shop Drawings: Prepare and submit originally prepared information, drawn accurately to scale. Do not reproduce Contract Documents or copy standard printed materials as the basis for Shop Drawings and Coordination Drawings.
- 1. Preparation: Include the following information, as applicable:
 - a. Dimensions.
 - b. Identification of products and materials.
 - c. Fabrication and installation drawings.
 - d. Roughing-in and setting diagrams.
 - e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
 - f. Shopwork manufacturing instructions.
 - g. Templates and patterns.
 - h. Schedules.
 - i. Design calculations.
 - j. Compliance with specified standards.
 - k. Notation of coordination requirements.
 - l. Notation of dimensions established by any field measurement.
 - m. Highlighted or encircled deviations from the Contract Documents, if any.
 - 2. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.
 - 3. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches (215 by 280 mm) but no larger than 30 by 42 inches (750 by 1000 mm).
 - 4. Number of Copies: Submit one correctable, translucent, reproducible print and one blue- or black-line print of each submittal. Architect, through Construction Manager, will return the reproducible print.
 - 5. Number of Copies: Submit three blue- or black-line prints of each submittal, unless prints are required for operation and maintenance manuals. Submit five prints where prints are

required for operation and maintenance manuals. Architect and Construction Manager will retain two prints; remainder will be returned. Mark up and retain one returned print as a Project Record Drawing.

6. Number of Copies: Submit copies of each submittal, as follows:
 - a. Initial Submittal: Submit one correctable, translucent, reproducible print and one blue- or black-line print. The reproducible print will be returned.
 - b. Initial Submittal: Submit two blue- or black-line prints. One print will be returned.
 - c. Final Submittal: Submit five (5) blue- or black-line prints, unless prints are required for operation and maintenance manuals. Submit five prints where prints are required for operation and maintenance manuals. CITY OF ROCKVILLE will retain two prints; remainder will be returned. Mark up and retain one returned print as a Project Record Drawing.
- D. Coordination Drawings: Comply with requirements in Division 1 Section "Project Management and Coordination."
- E. Samples: Prepare physical units of materials or products, including the following:
 1. Comply with requirements in Division 1 Section "Quality Requirements" for mockups.
 2. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
 3. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from the same material to be used for the work, cured and finished in manner specified, and physically identical with the product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
 4. Preparation: Mount, display, or package Samples in manner specified to facilitate review of qualities indicated. Prepare Samples to match Architect's sample where so indicated. Attach label on unexposed side that includes the following:
 - a. Generic description of Sample.
 - b. Product name or name of manufacturer.
 - c. Sample source.
 5. Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, provide the following:
 - a. Size limitations.
 - b. Compliance with recognized standards.
 - c. Availability.
 - d. Delivery time.
 6. Submit Samples for review of kind, color, pattern, and texture for a final check of these characteristics with other elements and for a comparison of these characteristics between final submittal and actual component as delivered and installed.
 - a. If variation in color, pattern, texture, or other characteristic is inherent in the product represented by a Sample, submit at least 5 (five) sets of paired units that show approximate limits of the variations.

- b. Refer to individual Specification Sections for requirements for Samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation, and similar construction characteristics.
- 7. Number of Samples for Initial Selection: Submit 3 full sets of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. The submittal will be returned with options selected.
- 8. Number of Samples for Verification: Submit five (5) sets of Samples. City of Rockville will retain two Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a Project Record Sample.
 - a. Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
- 9. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 - a. Samples that may be incorporated into the work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
 - b. Samples not incorporated into the work, or otherwise designated as Owner's property, are the property of Contractor.
- F. Product Schedule or List: Prepare a written summary indicating types of products required for the work and their intended location. Include the following information in tabular form:
 - 1. Type of product. Include unique identifier for each product.
 - 2. Number and name of room or space.
 - 3. Location within room or space.

2.2 INFORMATIONAL SUBMITTALS

- A. General: Prepare and submit Informational Submittals required by other Specification Sections. General qualitative requirements are as specified for Action Submittals elsewhere in this section unless otherwise indicated in this Article.
 - 1. Number of Copies: Submit five (5) copies of each submittal, unless otherwise indicated. City of Rockville will not return copies.
 - 2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
 - 3. Test and Inspection Reports: Comply with requirements in Division 1 Section "Construction Quality Control."
- B. Contractor's Construction Schedule: Comply with requirements in Division 1 Section "Construction Progress Documentation."
- C. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person as required in the technical specifications and in Division 1 Section "Construction Quality Control." Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

- D. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements.
- E. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.
- F. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements and, where required, is authorized for this specific Project.
- G. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements. Include evidence of manufacturing experience where required.
- H. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements.
- I. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements.
- J. Preconstruction Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements.
- K. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- L. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements.
- M. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- N. Research/Evaluation Reports: Prepare written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
 - 1. Name of evaluation organization.
 - 2. Date of evaluation.
 - 3. Time period when report is in effect.
 - 4. Product and manufacturers' names.
 - 5. Description of product.
 - 6. Test procedures and results.
 - 7. Limitations of use.

- O. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements in Division 1 Section "Closeout Procedures and Operation and Maintenance Data."
- P. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.
- Q. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer. Include the following, as applicable:
 - 1. Preparation of substrates.
 - 2. Required substrate tolerances.
 - 3. Sequence of installation or erection.
 - 4. Required installation tolerances.
 - 5. Required adjustments.
 - 6. Recommendations for cleaning and protection.
- R. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:
 - 1. Name, address, and telephone number of factory-authorized service representative making report.
 - 2. Statement on condition of substrates and their acceptability for installation of product.
 - 3. Statement that products at Project site comply with requirements.
 - 4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 - 5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 - 6. Statement whether conditions, products, and installation will affect warranty.
 - 7. Other required items indicated in individual Specification Sections.
- S. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.
- T. Construction Photographs: Comply with requirements in Division 1 Section "Photographic Documentation."

- 2.3 Material Safety Data Sheets: Submit information directly to CITY OF ROCKVILLE. MSDS sheets submitted directly to Engineer will be returned.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Review each submittal prior to transmission to City of Rockville and check for compliance with the Contract Documents. Note corrections and field dimensions. Mark with certification stamp before submitting to City of Rockville
- B. Certification Stamp: Stamp each submittal with a uniform certification stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's certification, and statement certifying that submittal has been reviewed, checked, and complies with the Contract Documents.

3.2 CITY OF ROCKVILLE ACTION

- A. Except for submittals for record or for information or for another purpose where no action and return is required, the Contracting Officer will review submittals and mark returned copies to indicate action taken.
- B. Compliance with specified characteristics is the Contractor's responsibility, and is not part of the Contracting Officer's review and indication of action taken. No matter what review action is taken, final acceptance will depend on the contractor's full compliance with the Contract Documents.
- C. Submittals that do not contain the required marking of approval by the Contracting Officer, as indicated in the specifications, shall not be used for construction.
- D. Action Stamp: Each submittal will be stamped with a uniform action stamp. The stamp shall be marked to indicate one of the following actions taken:
 - 1. "Approved" or "Approved as Submitted": The work covered by the submittal may proceed, provided it complies with the notations or corrections on the submittal and with the requirements of the Contract Documents.
 - 2. "Approved as noted, Resubmission not required": The contractor is authorized to proceed with work as noted provided the contractor takes no exception to the notations.
 - 3. "Approved as noted, Resubmission Required": The contractor is authorized to proceed with portions of the work as noted. The contractor must resubmit those items/components so noted with additional information or requirements, for approval, before work may proceed on that portion of the submittal.
 - 4. "Disapproved": The submittal is incomplete or does not comply with design concept or requirements of the contract documents. No work shall proceed for this item until resubmittal with appropriate changes is approved.
 - 5. "Not Reviewed": A submittal marked "not reviewed" will indicate submittal does not have evidence of being reviewed and certified by the Construction Contractor, or is not complete. A submittal marked "not reviewed" will be returned with an explanation of the reason it is not reviewed. Resubmit submittals which are returned for lack of review by the contractor or for being incomplete, with appropriate action, coordination, or change.
 - 6. "Receipt Acknowledged" or no action: Submittals which are for the record or for information only or for another purpose not requiring review action.

City of Rockville
Twinbrook Recreation Center Restroom Renovations

END OF SECTION 013300

SECTION 014000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes general administrative and procedural requirements for the contractor's quality control program. Requirements for the Contractor to provide quality control services required by the Contracting Officer are not limited by provisions of this Section. The specific technical quality control program required for the work is defined by the combination of this section and Division 1 Section "Construction Quality Control."
- B. Related Sections: This specification section is related to any and all specification sections with explicit or implicit reference to quality requirements. Specific submittal requirements of these related specification sections are not included in this section. Product quality requirements are contained in Divisions 2 through 16. Related sections include but are not limited to the following specification sections:
 - 1. Division 1 Section "Summary"
 - 2. Division 1 Section "Work Restrictions"
 - 3. Division 1 Section "Project Management and Coordination"
 - 4. Division 1 Section "References"
 - 5. Division 1 Section "Construction Quality Control"
 - 6. Division 1 Section "Temporary Facilities and Controls"
 - 7. Division 1 Section "Safety and Health"
 - 8. Division 1 Section "Product Requirements"
 - 9. Division 1 Section "Execution Requirements"
 - 10. Division 1 Section "Cutting and Patching"
 - 11. Division 1 Section "Selective Demolition"
 - 12. Division 1 Section "Closeout Procedures"
 - 13. Division 1 Section "Project Record Documents"
 - 14. Division 1 Section "Operation and Maintenance Documentation"
 - 15. Division 1 Section "Demonstration and Training"

1.3 DEFINITIONS

- A. Quality Assurance: Activities, actions, and procedures performed by City of Rockville or their designated representatives, before and during execution of the work to verify that the contractor's quality control program is producing the quality of work required by the contract documents and ensure that the construction complies with all requirements.
- B. Quality Control: Tests, inspections, procedures, and related actions performed by the contractor during and after execution of the work to evaluate that completed construction complies with contract requirements. Services do not include contract enforcement activities performed by the City of Rockville or their designated representative.

- C. Mockups: Full-size, physical example assemblies to illustrate finishes and materials. Mockups are used to verify selections made under Sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not Samples. Mockups establish the standard by which the remaining work will be judged.
- D. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

1.4 DELEGATED DESIGN

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of the Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to the Contracting Officer.

1.5 SUBMITTALS

- A. Delegated-Design Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit a statement, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional, indicating that the products and systems are in compliance with performance and design criteria indicated. Include list of codes, loads, and other factors used in performing these services.
- B. Permits, Licenses, and Certificates: For City of Rockville 's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.6 QUALITY CONTROL QUALIFICATIONS

- A. Qualification requirements for the specified contractor's quality control organization are included in Division 1 Section "Construction Quality Control."
- B. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- C. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this project.
- D. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this project, whose work has resulted in construction with a record of successful in-service performance.
- E. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this project and with a record of successful in-service performance.

- F. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where the project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this project in material, design, and extent.
- G. Specialists: Certain sections of the specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
 - 1. Requirement for specialists shall not supersede building codes and similar regulations governing the work, nor interfere with local trade-union jurisdictional settlements and similar conventions.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

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

END OF SECTION 014000

SECTION 014200 - REFERENCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DEFINITIONS

- A. General Explanation: Specification language often includes terms that are defined elsewhere in the Contract Documents, including the Construction Contract Clauses. Certain terms are defined in this section. These definitions or explanations are not necessarily complete or exclusive, but are general for the work and may be explained more explicitly in other Sections.
- B. "General Conditions" refer collectively to the Construction Contract Clauses, Labor Standards and the U.S. Department of Labor Wage Decision and Special Contract Requirements bound into the specifications.
- C. "Indicated" refers to graphic representations, notes or schedules on the Drawings, or to requirements elsewhere in the Specifications or other Contract Documents. Terms such as "shown", "noted", "scheduled" and "specified" have the same meaning as "indicated" and are used to further help locate the reference, but no limitation on location is intended except as specifically stated.
- D. Where "directed", "authorized", "selected", "approved", or a similar term is used in conjunction with the Contractor's submittals, applications, requests and other activities, and the specifications state that an individual other than the Contracting Officer, such as the Project Officer, Architect or Construction Engineer, shall provide this action, it is understood that only the Contracting Officer has this authority unless the individual stated is so authorized in writing by the Contracting Officer.
 - 1. When the individual is so authorized by the Contracting Officer, the Contractor may still appeal the action to the Contracting Officer.
 - 2. The Contracting Officer's decision will be final.
 - 3. In no case shall the Contracting Officer's action be interpreted as releasing the Contractor from responsibility to fulfill the requirements of the Contract Documents.
- E. "Regulations" include laws, ordinances, statutes and lawful orders issued by authorities having jurisdiction, as well as rules, conventions and agreements within the construction industry that control performance of the Work.
- F. "Project site" refers to the space available to the Contractor for performance of the Work, either exclusively or in conjunction with others performing other work.
- G. "Furnish" means to supply and deliver to the Project site, ready for unloading, unpacking, assembling, installation and similar operations.

- H. "Government Furnished" means the Government will supply the items so referenced, with the Contractor having the responsibility of pick-up, storage, delivery to the work site and final installation.
- I. "Install" describes operations at the Project site, including unloading, temporary storage, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning and similar operations.
- J. "Provide" means to furnish and install, complete in place and ready for full use.
- K. The requirement for packaging, packing, marking, and preparation for shipment or delivery included in the referenced specifications will apply only to those materials and equipment that are furnished directly to the Government and not to materials and equipment that are furnished and installed by the Contractor.
- L. "Installer" is the Contractor or another entity engaged by the Contractor, either directly or indirectly through subcontracting, to perform a particular construction operation at the Project site, including installation, erection, application and similar operations. Installers shall be skilled in the operations they perform. Where indicated, installers shall also be Specialists as defined in the Construction Contract Clauses.
 - 1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to trades people of the corresponding generic name.
- M. "Owner" refers to the City of Rockville.
- N. "Government" refers to the City of Rockville.
- O. "Project Officer" refers to the City of Rockville Technical Representative.
- P. "Building Manager/Facility Manager" is the Government employee responsible for the administration, operation and maintenance of the building.
- Q. "Construction Quality Manager" is the individual or entity, under Contract to the Government, responsible for performing the day-to-day coordination and administration of the construction Contract, including performing field inspections, recommending approval or rejection of material and workmanship, monitoring labor and safety provisions, maintaining inspection logs and records of defects, and similar activities.
- R. "Notice to Proceed" is the Contracting Officer's notification in writing to the Contractor to proceed with the individual task orders, activating the time period for construction and establishing the completion date.

1.3 DRAWING SYMBOLS

- A. Except as otherwise indicated, symbols used on the Drawings are those symbols recognized in the construction industry for the purposes.
 - 1. These include graphic symbols defined by "Architectural Graphic Standards", published by John Wiley & Sons, Inc., latest edition, as well as graphic symbols recommended by ASHRAE, ASME, ASPE, CSI, IEEE and similar technical organizations for the mechanical and electrical Drawings.

2. Refer uncertainties as to meaning of symbols to the Contracting Officer for clarification before proceeding.

1.4 INDUSTRY STANDARDS

- A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect, to the extent referenced, as if bound or copied directly into the Contract Documents. Such standards are made a part of the Contract Documents by reference.
- B. Conflicting Requirements. Where compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantity or quality, comply with the most stringent requirement. Immediately refer uncertainties, and requirements that are different but apparently equal, to the Contracting Officer in writing for a decision before proceeding.
- C. Minimum Quantity and Quality: The quantity or quality indicated shall be the minimum provided. The actual installation may comply exactly with the minimum quantity or quality indicated, or it may exceed the minimum levels within reasonable limits.
 1. Indicated numeric values are minimum or maximum as appropriate for the context of the requirements.
 2. Refer uncertainties to the Contracting Officer for a decision before proceeding.

1.5 ABBREVIATIONS AND ACRONYMS

- A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web site addresses are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

CBHF	State of California, Department of Consumer Affairs	(800) 952-5210
	Bureau of Home Furnishings and Thermal Insulation	(916) 445-1254
	www.dca.ca.gov/bhfti	
	www.cpsc.gov	(301) 504-0990
DOC	Department of Commerce	(202) 482-2000
	www.doc.gov	
EPA	Environmental Protection Agency	(202) 260-2090
	www.epa.gov	
FAA	Federal Aviation Administration	(202) 366-4000
	www.faa.gov	
FCC	Federal Communications Commission	(202) 418-0190
	www.fcc.gov	
FDA	Food and Drug Administration	(888) 463-6332
	www.fda.gov	
GSA	General Services Administration	(202) 708-5082
	www.gsa.gov	

HUD	Department of Housing and Urban Development www.hud.gov	(202) 708-1112
LBL	Lawrence Berkeley Laboratory (See LBNL)	
LBNL	Lawrence Berkeley National Laboratory www.lbl.gov	(510) 486-5605
NCHRP	National Cooperative Highway Research Program (See TRB)	
NIST	National Institute of Standards and Technology www.nist.gov	(301) 975-6478
OSHA	Occupational Safety & Health Administration www.osha.gov	(202) 693-1999
RUS	Rural Utilities Service (See USDA)	(202) 720-9540
TRB	Transportation Research Board www.nas.edu/trb	(202) 334-2934
USDA	Department of Agriculture www.usda.gov	(202) 720-2791
USPS	Postal Service www.usps.com www.aham.org	(202) 268-2000
AI	Asphalt Institute www.asphaltinstitute.org	(859) 288-4960
AIA	American Institute of Architects (The) www.e-architect.com	(202) 626-7300
AISC	American Institute of Steel Construction www.aisc.org	(800) 644-2400 (312) 670-2400
AISI	American Iron and Steel Institute www.steel.org	(202) 452-7100
AITC	American Institute of Timber Construction www.aitc-glulam.org	(303) 792-9559
ALA	American Laminators Association (See LMA)	
ALCA	Associated Landscape Contractors of America www.alca.org	(800) 395-2522 (703) 736-9666
ALSC	American Lumber Standard Committee	(301) 972-1700
AMCA	Air Movement and Control Association International, Inc.	(847) 394-0150

	www.amca.org	
ANLA	American Nursery & Landscape Association (Formerly: AAN - American Association of Nurserymen) www.anla.org	(202) 789-2900
ANSI	American National Standards Institute www.ansi.org	(202) 293-8020
AOSA	Association of Official Seed Analysts www.aosaseed.com	(402) 476-3852
APA	APA - The Engineered Wood Association www.apawood.org	(253) 565-6600
APA	Architectural Precast Association www.archprecast.org	(941) 454-6989
API	American Petroleum Institute www.api.org	(202) 682-8000
ARI	Air-Conditioning & Refrigeration Institute www.ari.org	(703) 524-8800
ASCA	Architectural Spray Coaters Association www.ascassoc.com	(609) 848-6120
ASCE	American Society of Civil Engineers www.asce.org	(800) 548-2723 (703) 295-6300
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers www.ashrae.org	(800) 527-4723 (404) 636-8400
ASME	ASME International (The American Society of Mechanical Engineers International) www.asme.org	(800) 843-2763 (212) 591-7722
ASSE	American Society of Sanitary Engineering www.asse-plumbing.org	(440) 835-3040
ASTM	American Society for Testing and Materials www.astm.org	(610) 832-9585
AWCI	AWCI International (Association of the Wall and Ceiling Industries International) www.awci.org	(703) 534-8300
AWCMA	American Window Covering Manufacturers Association (See WCMA)	
AWI	Architectural Woodwork Institute www.awinet.org	(800) 449-8811 (703) 733-0600
AWPA	American Wood-Preservers' Association	(817) 326-6300

	www.awpa.com	
AWS	American Welding Society www.aws.org	(800) 443-9353 (305) 443-9353
AWWA	American Water Works Association www.awwa.org	(800) 926-7337 (303) 794-7711
BHMA	Builders Hardware Manufacturers Association www.buildershardware.com	(212) 297-2122
BIA	Brick Industry Association (The) www.bia.org	(703) 620-0010
BIFMA	BIFMA International (Business and Institutional Furniture Manufacturer's Association International) www.bifma.com	(616) 285-3963
CCC	Carpet Cushion Council www.carpetcushion.org	(203) 637-1312
CCFSS	Center for Cold-Formed Steel Structures www.umn.edu/~ccfss	(573) 341-4471
CDA	Copper Development Association Inc. www.copper.org	(800) 232-3282 (212) 251-7200
CEA	Canadian Electricity Association www.canelect.ca	(613) 230-9263
CFFA	Chemical Fabrics & Film Association, Inc. www.chemicalfabricsandfilm.com	(216) 241-7333
CGA	Compressed Gas Association www.cganet.com	(703) 412-0900
CGSB	Canadian General Standards Board www.pwgsc.gc.ca/cgsb	(819) 956-0425
CIMA	Cellulose Insulation Manufacturers Association www.cellulose.org	(888) 881-2462 (937) 222-2462
CISCA	Ceilings & Interior Systems Construction Association www.cisca.org	(630) 584-1919
CISPI	Cast Iron Soil Pipe Institute www.cispi.org	(423) 892-0137
CLFMI	Chain Link Fence Manufacturers Institute www.chainlinkinfo.org	(301) 596-2583
CPA	Composite Panel Association (Formerly: National Particleboard Association) www.pbmdf.com	(301) 670-0604

City of Rockville
Twinbrook Recreation Center Restroom Renovations

CPPA	Corrugated Polyethylene Pipe Association www.cppa-info.org	(800) 510-2772 (202) 462-9607
CRI	Carpet & Rug Institute (The) www.carpet-rug.com	(800) 882-8846 (706) 278-3176
CRSI	Concrete Reinforcing Steel Institute www.crsi.org	(847) 517-1200
CSA	CSA International (Formerly: IAS - International Approval Services) www.csa-international.org	(800) 463-6727 (416) 747-4000
CSI	Construction Specifications Institute (The) www.csinet.org	(800) 689-2900 (703) 684-0300
CSSB	Cedar Shake & Shingle Bureau www.cedarbureau.org	(604) 820-7700
CTI	Cooling Technology Institute (Formerly: Cooling Tower Institute) www.cti.org	(281) 583-4087
DHI	Door and Hardware Institute www.dhi.org	(703) 222-2010
EIA/TIA	Electronic Industries Alliance/Telecommunications Industry Association www.eia.org	(703) 907-7500
EIMA	EIFS Industry Members Association www.eifsfacts.com	(800) 294-3462 (770) 968-7945
EJMA	Expansion Joint Manufacturers Association, Inc. www.ejma.org	(914) 332-0040
FCI	Fluid Controls Institute www.fluidcontrolsintitute.org	(216) 241-7333
FGMA	Flat Glass Marketing Association (See GANA)	
FM	Factory Mutual System (See FMG)	
FMG	FM Global (Formerly: FM - Factory Mutual System) www.fmglobal.com	(401) 275-3000
GA	Gypsum Association www.gypsum.org	(202) 289-5440
GANNA	Glass Association of North America (Formerly: FGMA - Flat Glass Marketing Association) www.glasswebsite.com/gana	(785) 271-0208

GRI	Geosynthetic Research Institute www.drexel.edu/gri	(215) 895-2343
GTA	Glass Tempering Division of Glass Association of North America (See GANA)	
HI	Hydraulic Institute www.pumps.org	(888) 786-7744 (973) 267-9700
HI	Hydronics Institute www.gamanet.org	(908) 464-8200
HMMA	Hollow Metal Manufacturers Association (See NAAMM)	
HPVA	Hardwood Plywood & Veneer Association www.hpva.org	(703) 435-2900
HPW	H. P. White Laboratory, Inc. www.hpwhite.com	(410) 838-6550
IAS	International Approval Services (See CSA International)	
ICEA	Insulated Cable Engineers Association, Inc. www.icea.net	(508) 394-4424
ICRI	International Concrete Repair Institute (The) www.icri.org	(703) 450-0116
IEC	International Electrotechnical Commission www.iec.ch	41 22 919 02 11
IEEE	Institute of Electrical and Electronics Engineers, Inc. (The) www.ieee.org	(212) 419-7900
IESNA	Illuminating Engineering Society of North America www.iesna.org	(212) 248-5000
IGCC	Insulating Glass Certification Council www.igcc.org	(315) 646-2234
ILI	Indiana Limestone Institute of America, Inc. www.iliai.com	(812) 275-4426
IRI	Industrial Risk Insurers www.industrialrisk.com	(800) 243-7308 (860) 520-7300
ITS	Intertek Testing Services www.itsglobal.com	(800) 345-3851 (607) 753-6711
IWS	Insect Screening Weavers Association (Now defunct)	
KCMA	Kitchen Cabinet Manufacturers Association	(703) 264-1690

	www.kcma.org	
LGS	Light Gage Structural Institute www.loseke.com	(972) 370-0967
LMA	Laminating Materials Association (Formerly: ALA - American Laminators Association) www.lma.org	(201) 664-2700
LPI	Lightning Protection Institute www.lightning.org	(800) 488-6864 (847) 577-7200
LSGA	Laminated Safety Glass Association (See GANA)	
MBMA	Metal Building Manufacturers Association www.mbma.com	(216) 241-7333
MCA	Metal Construction Association www.metalconstruction.org	(312) 201-0193
MFMA	Maple Flooring Manufacturers Association www.maplefloor.org	(847) 480-9138
MFMA	Metal Framing Manufacturers Association	(312) 644-6610
MGPHO	Medical Gas Professional Healthcare Organization, Inc. www.mgpho.org	(877) 238-5157 (913) 681-6548
MHIA	Material Handling Industry of America www.mhia.org	(800) 345-1815 (704) 676-1190
MIA	Marble Institute of America www.marble-institute.com	(614) 228-6194
ML/SFA	Metal Lath/Steel Framing Association (See SSMA)	
MSS	Manufacturers Standardization Society of The Valve and Fittings Industry Inc. www.mss-hq.com	(703) 281-6613
NAAMM	National Association of Architectural Metal Manufacturers www.naamm.org	(312) 332-0405
NAAMM	North American Association of Mirror Manufacturers (See GANA)	
NACE	NACE International (National Association of Corrosion Engineers International) www.nace.org	(281) 228-6200
NAIMA	North American Insulation Manufacturers Association (The) www.naima.org	(703) 684-0084

City of Rockville
Twinbrook Recreation Center Restroom Renovations

NAMI	National Accreditation and Management Institute, Inc.	(304) 258-5100
NAPM	National Association of Photographic Manufacturers (See PIMA)	
NBGQA	National Building Granite Quarries Association, Inc. www.nbgqa.com	(800) 557-2848
NCMA	National Concrete Masonry Association www.ncma.org	(703) 713-1900
NCPI	National Clay Pipe Institute www.ncpi.org	(414) 248-9094
NCTA	National Cable Television Association www.ncta.com	(202) 775-3669
NEBB	National Environmental Balancing Bureau www.nebb.org	(301) 977-3698
NECA	National Electrical Contractors Association www.necanet.org	(301) 657-3110
NeLMA	Northeastern Lumber Manufacturers' Association www.nelma.org	(207) 829-6901
NEMA	National Electrical Manufacturers Association www.nema.org	(703) 841-3200
NETA	InterNational Electrical Testing Association www.netaworld.org	(303) 697-8441
NFPA	National Fire Protection Association www.nfpa.org	(800) 344-3555 (617) 770-3000
NFRC	National Fenestration Rating Council www.nfrc.org	(301) 589-6372
NGA	National Glass Association www.glass.org	(703) 442-4890
NHLA	National Hardwood Lumber Association www.natlhardwood.org	(800) 933-0318 (901) 377-1818
NLGA	National Lumber Grades Authority www.nlga.org	(604) 524-2393
NOFMA	National Oak Flooring Manufacturers Association www.nofma.org	(901) 526-5016
NPA	National Particleboard Association (See CPA)	
NRCA	National Roofing Contractors Association www.nrca.net	(800) 323-9545 (847) 299-9070

NRMCA	National Ready Mixed Concrete Association www.nrmca.org	(888) 846-7622 (301) 587-1400
NSA	National Stone Association www.aggregates.org	(800) 342-1415 (703) 525-8788
NSF	NSF International (National Sanitation Foundation International) www.nsf.org	(800) 673-6275 (734) 769-8010
NTMA	National Terrazzo and Mosaic Association, Inc. www.ntma.com	(800) 323-9736 (703) 779-1022
NWWDA	National Wood Window and Door Association (See WDMA)	
PCI	Precast/Prestressed Concrete Institute www.pci.org	(312) 786-0300
PDCA	Painting and Decorating Contractors of America www.pdca.com	(800) 332-7322 (703) 359-0826
PDI	Plumbing & Drainage Institute www.pdionline.org	(800) 589-8956 (508) 230-3516
PGI	PVC Geomembrane Institute //pgi-tp.ce.uiuc.edu	(217) 333-3929
PIMA	Photographic & Imaging Manufacturers Association (Formerly: NAPM - National Association of Photographic Manufacturers) www.pima.net	(914) 698-7603
RCSC	Research Council on Structural Connections www.boltcouncil.org	(800) 644-2400 (312) 670-2400
RFCI	Resilient Floor Covering Institute (Contact by mail only)	
RIS	Redwood Inspection Service www.calredwood.org	(888) 225-7339 (415) 382-0662
RMA	Rubber Manufacturers Association www.rma.org	(800) 220-7620 (202) 682-4800
SAE	SAE International www.sae.org	(724) 776-4841
SDI	Steel Deck Institute www.sdi.org	(847) 462-1930
SDI	Steel Door Institute www.steeldoor.org	(440) 899-0010
SEFA	Scientific Equipment and Furniture Association www.sefalabfurn.com	(843) 689-6878

SGCC	Safety Glazing Certification Council www.sgcc.org	(315) 646-2234
SIGMA	Sealed Insulating Glass Manufacturers Association www.sigmaonline.org/sigma	(312) 644-6610
SJI	Steel Joist Institute www.steeljoist.org	(843) 626-1995
SMA	Screen Manufacturers Association	(561) 533-0991
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association www.smacna.org	(703) 803-2980
SPFA	Spray Polyurethane Foam Alliance (Formerly: SPI/SPFD - The Society of the Plastics Industry, Inc.; Spray Polyurethane Foam Division) www.sprayfoam.org	(800) 523-6154
SPI	The Society of the Plastics Industry www.plasticsindustry.org	(202) 974-5200
SPIB	Southern Pine Inspection Bureau (The) www.spib.org	(850) 434-2611
SPI/SPFD	The Society of the Plastics Industry Spray Polyurethane Foam Division (See SPFA)	
SPRI	SPRI (Single Ply Roofing Institute) www.spri.org	(781) 444-0242
SSINA	Specialty Steel Industry of North America www.ssina.com	(800) 982-0355 (202) 342-8630
SSMA	Steel Stud Manufacturers Association (Formerly: ML/SFA - Metal Lath/Steel Framing Association) www.ssma.com	(312) 456-5590
SSPC	SSPC: The Society for Protective Coatings www.sspc.org	(800) 837-8303 (412) 281-2331
STI	Steel Tank Institute www.steeltank.com	(847) 438-8265
SWI	Steel Window Institute www.steelwindows.com	(216) 241-7333
SWRI	Sealant, Waterproofing, and Restoration Institute www.swrionline.org	(816) 472-7974
TCA	Tile Council of America, Inc. www.tileusa.com	(864) 646-8453

TIA/EIA	Telecommunications Industry Association/Electronic Industries Alliance www.tiaonline.org	(703) 907-7700
TPI	Truss Plate Institute	(608) 833-5900
TPI	Turfgrass Producers International www.turfgrasssod.org	(800) 405-8873 (847) 705-9898
UFAC	Upholstered Furniture Action Council www.ufac.org	(336) 885-5065
UL	Underwriters Laboratories Inc. www.ul.com	(800) 704-4050 (847) 272-8800
UNI	Uni-Bell PVC Pipe Association www.uni-bell.org	(972) 243-3902
USITT	United States Institute for Theatre Technology, Inc. www.culturenet.ca/usitt	(800) 938-7488 (315) 463-6463
USP	U.S. Pharmacopeia www.usp.org	(800) 822-8772 (301) 881-0666
WASTEC	Waste Equipment Technology Association www.wastec.org	(800) 424-2869 (202) 244-4700
WCLIB	West Coast Lumber Inspection Bureau www.wclib.org	(800) 283-1486 (503) 639-0651
WCMA	Window Covering Manufacturers Association (Formerly: AWCMA - American Window Covering Manufacturers Association) www.windowcoverings.org	(800) 506-4653 (212) 661-4261
WDMA	Window & Door Manufacturers Association (Formerly: NWWDA - National Wood Window and Door Association) www.wdma.com	(800) 223-2301 (847) 299-5200
WIC	Woodwork Institute of California www.wicnet.org	(916) 372-9943
WMMPA	Wood Moulding & Millwork Producers Association www.wmmpa.com	(800) 550-7889 (530) 661-9591
WWPA	Western Wood Products Association www.wwpa.org	(503) 224-3930

- B. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web site addresses are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

CBHF	State of California, Department of Consumer Affairs	(800) 952-5210

	Bureau of Home Furnishings and Thermal Insulation www.dca.ca.gov/bhfti www.cpsc.gov	(916) 445-1254 (301) 504-0990
DOC	Department of Commerce www.doc.gov	(202) 482-2000
EPA	Environmental Protection Agency www.epa.gov	(202) 260-2090
FAA	Federal Aviation Administration www.faa.gov	(202) 366-4000
FCC	Federal Communications Commission www.fcc.gov	(202) 418-0190
FDA	Food and Drug Administration	(888) 463-6332

- C. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web site addresses are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

CBHF	State of California, Department of Consumer Affairs Bureau of Home Furnishings and Thermal Insulation www.dca.ca.gov/bhfti www.cpsc.gov	(800) 952-5210 (916) 445-1254 (301) 504-0990
DOC	Department of Commerce www.doc.gov	(202) 482-2000
EPA	Environmental Protection Agency www.epa.gov	(202) 260-2090
FAA	Federal Aviation Administration www.faa.gov	(202) 366-4000
FCC	Federal Communications Commission www.fcc.gov	(202) 418-0190
FDA	Food and Drug Administration www.fda.gov	(888) 463-6332
GSA	General Services Administration www.gsa.gov	(202) 708-5082
HUD	Department of Housing and Urban Development www.hud.gov	(202) 708-1112
LBL	Lawrence Berkeley Laboratory (See LBNL)	
LBNL	Lawrence Berkeley National Laboratory www.lbl.gov	(510) 486-5605
NCHRP	National Cooperative Highway Research Program	

(See TRB)

NIST	National Institute of Standards and Technology www.nist.gov	(301) 975-6478
OSHA	Occupational Safety & Health Administration www.osha.gov	(202) 693-1999
RUS	Rural Utilities Service (See USDA)	(202) 720-9540
TRB	Transportation Research Board www.nas.edu/trb	(202) 334-2934
USDA	Department of Agriculture www.usda.gov	(202) 720-2791
USPS	Postal Service www.usps.com	(202) 268-2000

- D. State Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web site addresses are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

CBHF	State of California, Department of Consumer Affairs Bureau of Home Furnishings and Thermal Insulation www.dca.ca.gov/bhfti	(800) 952-5210 (916) 445-1254

PART 2 - PRODUCTS (Not applicable)

PART 3 - EXECUTION (Not applicable)

END OF SECTION 014200

SECTION 014500 - CONSTRUCTION QUALITY CONTROL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for the contractor's Quality Control (QC) Program. The QC Program required for the work is defined by the combination of this section and Division 1 Section "Quality Requirements."
- B. Related Sections: This specification section is related to any and all specification sections with explicit or implicit reference to quality control. Specific submittal requirements of these related specification sections are not included in this section. Related sections include but are not limited to the following specification sections:
 - 1. Division 1 Section "Summary"
 - 2. Division 1 Section "Work Restrictions"
 - 3. Division 1 Section "Project Management and Coordination"
 - 4. Division 1 Section "Submittal Procedures"
 - 5. Division 1 Section "Quality Requirements"
 - 6. Division 1 Section "References"
 - 7. Division 1 Section "Temporary Facilities and Controls"
 - 8. Division 1 Section "Safety and Health"
 - 9. Division 1 Section "Product Requirements"
 - 10. Division 1 Section "Execution Requirements"
 - 11. Division 1 Section "Cutting and Patching"
 - 12. Division 1 Section "Selective Demolition"
 - 13. Division 1 Section "Closeout Procedures"
 - 14. Division 1 Section "Project Record Documents"
 - 15. Division 1 Section "Operation and Maintenance Documentation"
 - 16. Division 1 Section "Demonstration and Training"
- C. The contractor's QC Program includes tests, inspections, procedures, and related actions performed by the contractor or other contractually designated party during and after execution of the work to verify that completed construction complies with contract requirements. Services do not include contract enforcement activities performed by the NIH or their designated representative.
- D. Specific QC requirements for individual construction activities are included in the technical sections that specify those construction activities.
- E. The intent of this section is to describe the duties and responsibilities of the contractor's QC Program. The Contractor has the option of assembling a QC Program to match that described in this specification section or proposing an alternate program that meets the same intent. The Contractor Officer can waive all or portions of this specification if the contractor has an established proven alternative QC Program which can be documented as meeting the intent of

the provisions in this specification section. The contractor is required to submit any alternate QC Program to meet the same milestones described herein and have the alternate QC Program accepted by the Contracting Officer prior to the start of work. No additional time will be allowed for the review process of an alternate program. Any costs savings resulting from an alternate QC Program will require a change order to be incorporated into the contract. No additional costs will be authorized for an alternate QC Program.

- F. This specification section does not relieve the Contractor of responsibility for compliance with Contract Document requirements, and does not limit the Contractor's QC procedures that facilitate compliance with Contract Document requirements.
- G. The term Contracting Officer and Project Officer shall also mean his/her representative who has been so designated in writing.

1.3 GOVERNING REGULATIONS AND AUTHORITIES

- A. The latest edition of the publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.
 - 1. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) ASTM A880 Criteria for Use in Evaluation of Testing Laboratories and Organization for Examination and Inspection of Steel, Stainless Steel, and Related Alloys
 - 2. ASTM C1077 Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation
 - 3. ASTM D3666 Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials
 - 4. ASTM D3740 Minimum Requirements for Agencies Engaged in the Testing and/ or Inspection of Soil and Rock as Used in Engineering Design and Construction
 - 5. ASTM E329 Agencies Engaged in the Testing and/ or Inspection of Materials Used in Construction
 - 6. ASTM E543 Agencies Performing Nondestructive Testing
- B. Obtain copies of applicable regulations and make these available at the project site for reference.

1.4 QUALITY CONTROL RESPONSIBILITIES

- A. Work is to be performed under the general direction of the Contracting Officer and shall be subject to inspection by the Contracting Officer's Technical Representative. No representative of the Contracting Officer is permitted to change specifications or drawings without the written authorization of the Contracting Officer.
- B. The contractor shall be familiar with the latest provisions of the inspection requirements of local jurisdictions and the NIH and shall include compliance with those requirements in the work of this contract. These local provisions shall be enforced when they exceed the provisions as outlined in the specifications. The provisions of the specifications shall be considered a minimum.
- C. Unless specifically indicated otherwise, the Contractor shall provide a contractor QC (QC) Program specified or required by this contract. Costs for these services are included in the Contract price.

- D. The contractor's QC Program shall include but not be limited to a QC Plan, a QC Staff, specified QC meetings, a three phased QC system described in this section, submittal review and certification, specified testing, completion inspections, QC certifications and documentation necessary to provide materials, equipment, workmanship, fabrication, construction and operations which comply with the requirements of this Contract.
1. The QC Program shall cover on-site and off-site work and shall be keyed to the work sequence identified in the contractor's construction schedule.
 2. No work or testing may be performed unless the contractor's QC Manager is on the work site.
 3. The contractor's QC Manager shall report to an officer of the firm and shall not be subordinate to the Project Superintendent or the Project Manager.
 4. The contractor's QC Manager, Project Superintendent, and the contractor's management team must work together effectively. Although the QC Manager is the primary individual responsible for QC, the Contractor will ultimately be held responsible for the quality of work on the job. The project superintendent will be held responsible for the quality of production.
- E. Testing and inspecting services may be required to verify compliance with requirements specified or indicated in the contract documents. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
- F. Where individual technical specification sections specifically indicate that certain tests, inspections or other QC services are to be provided by a testing agency, the Contractor shall employ and pay for a qualified independent testing agency to perform the QC services.
- G. Specified tests, inspections, and related actions do not limit Contractor's quality control procedures that facilitate compliance with the Contract Document requirements.
- H. Where specific quality control tests or services are indicated as a NIH responsibility, the NIH will engage a qualified agency to perform these services.
1. NIH will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of the types of testing and inspecting they are engaged to perform.
 2. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor and the Contract Sum will be adjusted by Change Order.
- I. The Contractor shall cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. The contractor will provide the following:
1. Access to the Work.
 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 4. Facilities for storage and field-curing of test samples.
 5. Delivery of samples to testing agencies.
 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 7. Security and protection for samples and for testing and inspecting equipment at Project site.

- J. Coordination: Coordinate sequence of activities to accommodate required quality assurance and quality control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

1.5 SUBMITTALS

- A. Submit a preliminary Definable Features of Work listing within 14 calendar days of receipt of the notice to Proceed.
- B. Submit a draft Quality Control Plan within 30 calendar days following receipt the Notice to Proceed.
- C. The only work that is authorized to proceed prior to the approval of the QC Plan is mobilization of storage and office trailers, temporary utilities, and surveying.
- D. Contractors should plan on a NIH review period of 14 calendar days prior to receiving comments on the draft QC Plan submission. The planned duration of the NIH review is provided as a planning figure and will vary dependent on the complexity and accuracy of the submission. No additional time will be allowed the Contractor for a NIH review longer than the above duration.
- E. Submit revised Quality Control Plan within 14 calendar days following receipt of NIH comments.

1.6 CONTRACTOR'S QUALITY CONTROL ORGANIZATION

- A. Quality Control Manager Duties and Qualifications

1. Provide a QC Manager at the work site to implement and manage the QC Program.
- a. In addition to implementing and managing the QC Program, the QC Manager may perform the duties of project superintendent.
- b. The only duties and responsibilities of the QC Manager are to manage and implement the QC Program on this contract. The QC Manager shall not be designated as the Project Superintendent or the safety competent person as defined OSHA Regulations (Standards) 29 CFR 1926.
- c. The QC Manager is required to attend the QC Plan Meeting, attend the Coordination and Mutual Understanding Meeting, conduct the QC meetings, perform the three phases of QC, perform submittal review and certification, ensure testing is performed and provide QC certifications and documentation required in this contract. The QC Manager is responsible for managing and coordinating the three phases of QC and documentation of work performed by Testing Laboratory personnel and any other inspection and testing personnel required by this Contract.
- 1) Specific duties of the QC Manager include but are not limited to:
- a) Maintains access to quality references called for in the specifications
- b) Ensures all submittals are prepared, certified, and submitted as required in a timely manner to avoid project delays.

- c) Coordinates changes or substitution requests made by the contractor to the Project Officer, however, he does not have the authority to approve them.
 - d) Inspects all work for compliance and maintains a Rework Items list on all non-conforming work.
 - e) Coordinates all testing requirements to maintain the production schedule.
 - f) Ensures that As-Built Drawings and Specifications and As-Built Record of Material documents are current and on site.
 - g) Coordinates submission of all miscellaneous plans required by various Division 1 specification sections to the Contracting Officer.
- 2) The QC Manager reports to an officer of the firm and not to the site superintendent.
 - 3) The QC Manager has the authority to stop the work and the responsibility to stop the work if the work does not conform to the contract requirements. Failure to exercise this responsibility is cause for NIH directing replacement of the QC Manager.
 - 4) Regardless who is designated as the Safety Competent Person as defined in OSHA Regulations (Standards) 29 CFR 1926.32(f) and assigned other safety responsibilities as described in Division 1 Section "Safety and Health." The QC Manager is always responsible for observing the work and monitoring safe work practices during the normal course of his jobsite duties.

2. QC Manager Qualifications.

- a. An individual with a minimum of 10 years experience as a superintendent, inspector, QC Manager, project manager, or construction manager on similar size and type construction contracts which included the major trades that are part of this Contract. The individual must be familiar with the requirements of OSHA Regulations (Standards) 29 CFR 1926, and have experience in the areas of hazard identification and safety compliance.
- b. A graduate of a four year accredited college program in one of the following disciplines: Engineering, Architecture, Construction Management, Engineering Technology, Building Construction, or Building Science **with a minimum of 10** years experience as a superintendent, inspector, QC Manager, project manager, or construction manager on similar size and type construction contracts which included the major trades that are part of this Contract. The individual must be familiar with the requirements of OSHA Regulations (Standards) 29 CFR 1926, and have experience in the areas of hazard identification and safety compliance.

B. Additional QC Management Staff Requirements. The QC requirements of this project require the QC staff to also include the following individuals:

- 1. Alternate QC Manager. The contractor will provide an Alternate QC Manager with similar qualifications as those of the QC Manager to serve in the event of the QC Manager's absence. The period of absence of the QC Manager shall not exceed two weeks at any one time, and not more than 30 workdays in the aggregate during a calendar year. The alternate QC Manager shall be designated in the QC Plan and should be familiar with the workings and status of the QC Program. The Alternate QC Manager may be a member of the contractor's production staff while not performing QC Manager duties.

2. Submittal Reviewer. Provide Submittal Reviewer, other than the QC Manager, qualified in the disciplines being reviewed, to review and certify that the submittals meet the requirements of this Contract prior to certification by the QC Manager.
3. The technical specification sections may also require the presence of manufacturer or factory technical or quality representatives or engineers to be on-site prior to observe or conduct all or portions of the installation. See Division 1 Section "Quality Requirements" for individual qualifications. These representatives shall be considered an extension of the QC staff.
4. The QC Supervisor for the Pest Management Contractor (PMC) required by Division 1 Section "Temporary Facilities and Controls" shall be considered a member of the QC staff. Copies of all PMC reports will be maintained by the QC Organization and PMC activities will be included in QC Reports

1.7 QUALITY CONTROL PLAN

- A. QC Plan Meeting: Conduct a QC Plan meeting with the Project Officer within 10 calendar days of receipt of the Notice To Proceed with the purpose of developing a mutual understanding of the QC Plan requirements prior to plan development and submission.
- B. Submit a QC Plan to the Contracting Officer for approval conforming to the requirements specified elsewhere in this section within 30 calendar days after receipt of the Notice to Proceed. Coordinate submission of the QC Plan with the preparation and submission of the contractor's preliminary and final construction schedules as described in Division 1 Section "Construction Progress Documentation." The QC Plan submission should be concurrent or follow the submission of the schedule.
- C. The initial submission of the QC Plan shall include a preliminary submittal of the list of definable features of work (DFOW) described in the following paragraphs that shall cover the first 90 days of construction. Submit the completed list of DFOWs in conjunction with the Preliminary Contractor's Construction Schedule described in Division 1 Section "Construction Progress Documentation." Any approval by the NIH of the QC Plan with this preliminary list shall be considered to be "approved as noted, re-submittal required" and will be in effect only until the completed list of DFOW is received and approved.
- D. The final submission of the QC Plan should be coordinated with the submission of the contractor's construction schedule as described in Division 1 Section "Construction Progress Documentation." If the completed list of DFOWs and accepted contractor's schedule is not received within the time indicated in Division 1 Section "Construction Progress Documentation," work beyond that authorized under the "approved as noted" will not commence. The contractor will not be entitled to a contract time extension for lost time due to failure to submit a conforming QC Plan or Construction Schedule.
- E. The contractor's QC Program is subject to continuous evaluation, review, and verification by the Project Officer and the Contracting Officer. Acceptance of the Contractor's QC Plan is conditional and will be predicated on satisfactory performance during the construction. The Contracting Officer reserves the right to require changes in the QC Plan and operations as necessary, including removal of personnel, to ensure the specified quality of work. The Contracting Officer reserves the right to interview any member of the QC organization at any time in order to verify the submitted qualifications. All QC organization personnel shall be subject to acceptance by the Contracting Officer. The Contracting Officer may require the removal of any individual for non-compliance with quality requirements specified in the contract.

- F. The Contractor will notify the Contracting Officer, in writing, of any proposed change to the submitted QC Plan, including pending changes in the QC organization personnel, a minimum of seven calendar days prior to the effective date of the proposed change. Proposed changes shall be subject to acceptance by the Contracting Officer prior to implementation.
- G. QC Plan Requirements. Provide, for approval by the Contracting Officer, a QC Plan with pages numbered sequentially that covers both on-site and off-site work and includes the following:
1. A table of contents listing the major sections identified with tabs in the following order:
 - a. QC Organization
 - b. Names And Qualifications
 - c. Duties, Responsibility And Authority Of QC Personnel
 - d. Outside Organizations
 - e. Appointment Letters
 - f. Submittal Procedures And Initial Submittal Register
 - g. Testing Laboratory Information
 - h. Testing Plan And Log
 - i. Procedures To Complete Rework Items
 - j. Documentation Procedures
 - k. List Of Definable Features Of Work (DFOW)
 - l. Procedures For Performing The Three Phases Of Control
 - m. QC Personnel Matrix
 - n. Procedures For Completion Inspection
 - o. Appendix
 2. A chart showing the contractor's QC organizational structure.
 3. Names and qualifications, in resume format, for each person in the QC organization.
 4. Duties, responsibilities and authorities of each person in the QC organization.
 5. A listing of outside organizations such as, architectural and consulting engineering firms that will be employed by the Contractor and a description of the services these firms will provide.
 6. Letters signed by an officer of the firm appointing the QC Manager and Alternate QC Manager and stating that they are responsible for implementing and managing the QC Program as described in this contract. Include in this letter the responsibility of the QC Manager and Alternate QC Manager to implement and manage the three phases of quality control, and their authority to stop work which is not in compliance with the contract.
 7. Copies of letters of direction signed by the QC Manager to all other QC staff outlining their duties, authorities, and responsibilities.
 8. Procedures for reviewing, approving and managing submittals. Provide the names of the persons in the QC organization authorized to review and certify submittals prior to submission to the Contracting Officer.
 9. Include a copy of the initial submittal of the Submittal Register per the requirements of Division 1 Section "Submittal Procedures."
 10. Testing laboratory information required by the paragraphs entitled "Testing Agencies and Reports" of this section
 11. A Testing Plan and Log that includes the tests required, referenced by the specification paragraph number requiring the test, the frequency, and the person responsible for each test.
 12. Procedures to identify, record, track and complete rework items.
 13. Documentation procedures, including proposed report formats.
 14. List of definable features of work.
 - a. A definable feature of work (DFOW) is a task which is separate and distinct from other tasks, has the same control requirements and work crews.

- b. The list shall be cross-referenced to the contractor's Construction Schedule and the specification sections.
 - c. For projects requiring a Progress Chart, the list of definable features of work shall include but not be limited to all items of work on the schedule.
 - d. For projects requiring a CPM Schedule, the list of definable features of work shall include but not be limited to all critical path activities.
 - e. All activities for which this specification requires QC Specialists or special inspection personnel should also be included as separate DFOWs.
 - f. Cutting and Patching activities as described in Division 1 Section "Cutting and Patching" shall be treated as separate DFOWs.
 - g. All activities that can be expected to impact NIH operations will be treated as separate DFOWs including but not limited to utility outages and temporary traffic provisions.
15. Procedures for performing the three phases of quality control. For each DFOW, provide copies of the DFOWs Preparatory and Initial Phase Checklists. Each list shall include a breakdown of quality checks that will be used when performing the QC functions, inspections, and tests required by the contract documents. The preparatory and initial phases and meetings shall be conducted with a view towards obtaining quality construction by planning ahead and identifying potential problems for each definable feature of work. The three phases of quality control are further defined in a following section of this specification.
16. Procedures for identifying and documenting the completion inspection process. Include in these procedures the responsible party for punch out inspection, pre-final inspection, and final acceptance inspection.
17. Appendix to include the anticipated miscellaneous project management and coordination plans being submitted for the project including but not limited to:
- a. Utility Service Interruption Plan
 - b. Hazardous Waste/Waste Management Plan
 - c. Heating and Cooling Plan
 - d. Integrated Pest Management Plan
 - e. Demolition Plan
 - f. Photographic Documentation Plan

1.8 COORDINATION AND MUTUAL UNDERSTANDING MEETING

- A. After submission of the QC Plan, and prior to the start of construction, meet with the Contracting Officer to present the QC Program proposed by the contractor. The purpose of this meeting is to develop a mutual understanding of the QC details, including documentation, administration for on-site and off-site work, and the coordination of the Contractor's management, production and QC personnel.
- B. At the meeting, the Contractor will be required to explain in detail how the three phases of quality control will be implemented for each definable feature of work.
- C. As a minimum, the Contractor's personnel required to attend shall include an officer of the firm, the Project Manager, Project Superintendent, QC Manager, Alternate QC Manager and/or A/E as appropriate and subcontractor representatives. Each subcontractor who will be assigned QC responsibilities shall have a principal of the firm at the meeting.
- D. Minutes of the meeting will be prepared by the QC Manager and signed by the Contractor, Engineer, and the Contracting Officer (or their designated representative). A copy of the signed minutes shall be provided by the Contractor to all attendees. Repeat the coordination and mutual understanding meeting when a new QC Manager is appointed.

1.9 QC MEETINGS.

- A. After the start of construction, the QC Manager shall conduct **bi-weekly** QC meetings at the work site with the project superintendent. The QC Manager shall prepare the minutes of the meeting and provide a copy to the Contracting Officer within 2 working days after the meeting. The Contracting Officer or their designated representative may attend these meetings. The QC Manager shall notify the Contracting Officer or their designated representative at least 48 hours in advance of each meeting. As a minimum, the following shall be accomplished at each meeting:
- B. Review the minutes of the previous meeting;
- C. Review the schedule and the status of work:
 - 1. Work or testing accomplished since last meeting
 - 2. Rework items identified since last meeting
 - 3. Rework items completed since last meeting;
- D. Review the status of submittals:
 - 1. Submittals reviewed and approved since last meeting
 - 2. Submittals required in the near future;
- E. Review the work to be accomplished in the next 2 (two) weeks and documentation required:
 - 1. Establish completion dates for outstanding rework items
 - 2. Update the schedule showing planned and actual dates of the preparatory, initial and follow-up phases, including testing and any other inspection required by this contract
 - 3. Discuss construction methods and the approach that will be used to provide quality construction by planning ahead and identifying potential problems for each definable feature of work
 - 4. Discuss status of off-site work or testing
 - 5. Discuss documentation required for the scheduled tasks;
 - 6. Discuss safety requirements for upcoming activities:
- F. Resolve QC and production problems:
 - 1. Assist in resolving Request for Information issues; and
- G. Address items that may require revising the QC Plan:
 - 1. Changes in QC organization personnel
 - 2. Changes in QC procedures.
 - 3. Review health and safety plan
 - 4. Other issues or topics as requested by the Project Officer.

1.10 THREE PHASES OF QUALITY CONTROL

- A. The three phases of quality control, describes the process that forms the backbone of the required QC system. The three phases, Preparatory, Initial, and Follow up shall adequately cover both on-site and off-site work and shall include the following for each definable feature of work.
 - 1. Preparatory Phase

- a. Notify the Contracting Officer at least 2 workdays in advance of the beginning of each Preparatory Phase. This phase shall include a meeting conducted by the QC Manager and attended by the Superintendent, and the Foreman responsible for the DFW. Document the results of the Preparatory Phase actions in the daily Contractor Quality Control Report and in the Preparatory Phase Checklist. The Preparatory Phase Meeting can be combined with the Preinstallation Conference if held.
- b. Perform the following prior to beginning work on each DFW:
 - 1) Review each paragraph of the applicable specification sections
 - 2) Review the Contract drawings
 - 3) Verify that appropriate shop drawings and submittals for materials and equipment have been submitted and approved. Verify receipt of approved factory test results, when required
 - 4) Review the testing plan and cutting and patching plan and other miscellaneous project management and coordination plans as appropriate and ensure that provisions have been made to provide the required QC testing
 - 5) Examine the work area to ensure that the required preliminary work has been completed. If manufacturer's field services are specified, verify that inspections have been accomplished and results noted. See Division 1 Section "Execution" for additional requirements.
 - 6) Examine the required materials, equipment and sample work to ensure that they are on hand and conform to the approved shop drawings and submitted data
 - 7) Discuss construction methods, construction tolerances, workmanship standards, and the approach that will be used to provide quality construction by planning ahead and identifying potential problems for each DFW
 - 8) Review the Safety Plan and appropriate activity hazard analysis to ensure that applicable safety requirements are met, and that required Material Safety Data Sheets (MSDS) are submitted.
 - 9) Review any hazardous material processes required for materials involved in the DFW.

2. Initial Phase

- a. Notify the Contracting Officer at least 2 workdays in advance of the beginning of each Initial Phase. When construction crews are ready to start work on a DFW, conduct an Initial Phase meeting with the superintendent, and the foreman responsible for that DFW. Observe the initial segment of the definable feature of work to ensure that the work complies with Contract requirements. Document the results of the initial phase in the daily Contractor Quality Control Report and in the Initial Phase Checklist. Repeat the Initial Phase for each new crew to work on-site, or when acceptable levels of specified quality are not being met.
- b. Perform the following for each DFW:
 - 1) Establish the quality of workmanship required
 - 2) Resolve conflicts
 - 3) Ensure that testing is performed as specified and as incorporated into the testing plan.
 - 4) Check work procedures for compliance with the Safety Plan and the appropriate activity hazard analysis to ensure that applicable safety requirements are met.
 - 5) Verify that all the requirements agreed to as a result of the Preparatory Phase have been or are being accomplished.

3. Follow-Up Phase

- a. Perform the following for on-going work daily, or more frequently as necessary until the completion of each DFOW and document in the daily Contractor Quality Control Report:
 - 1) Ensure the work is in compliance with Contract requirements;
 - 2) Maintain the quality of workmanship required
 - 3) Ensure that testing is performed by the specified or approved source;
 - 4) Ensure that rework items are being corrected
 - 5) Perform safety inspections.
 - 6) Ensure Preparatory and Initial Phase requirements are being met.

4. Additional Preparatory and Initial Phases. Additional Preparatory and Initial Phases shall be conducted on the same DFOWs for the following conditions:

- a. If the quality of on-going work is unacceptable, if there are changes in the applicable QC organization,
- b. If there are changes in the on-site production supervision or work crew,
- c. If cutting or patching is required following completion of the DFOW,
- d. If work on a definable feature is resumed after substantial period of inactivity, or
- e. If other problems develop.

- B. Notify the Contracting Officer at least two weeks prior to the start of the preparatory and initial phases if off site QC will be required.

1.11 SUBMITTAL REVIEW AND APPROVAL

- A. The QC organization shall be responsible for reviewing and certifying that all submittals are in compliance with the contract requirements. Those submittals requiring additional NIH approval shall be certified prior to being forwarded to NIH for approval.
- B. Those submittals requiring specific NIH approval are specifically identified in the technical specifications and will be forwarded for approval as described in Division 1 Section "Submittal Procedures."
- C. Submittal documentation requirements for contractor QC certified submittals are identical to those of NIH approved submittals and are described in Division 1 Section "Submittal Procedures."
- D. Procedures for submission, review and approval of technical submittals are described in Division 1 Section "Submittal Procedures."

1.12 TESTING AGENCIES AND REPORTS

- A. Qualification Data: Contractor shall submit for Contracting Officer Approval each testing agency's firm name, and credentials to perform the specified services, to the NIH for the Contracting Officer's approval at least 15 calendar days before scheduled inspections or tests.
 - 1. A qualified independent testing agency shall be an accredited entity engaged to perform tests or inspections, either at the Project site or elsewhere, and to report on and, if required, to interpret results of those tests or inspections.
 - 2. Testing agencies shall be acceptable to the Contracting Officer.

3. Contractor shall not employ the same testing agency engaged by NIH, unless agreed to in writing by NIH.
 4. Unless other accreditation is specified in the applicable individual technical specification section, each testing agency shall be an agency pre-qualified with the experience and capability to conduct testing and inspections indicated, as documented by ASTM E 548 that specializes in types of tests and inspections to be performed or shall be recognized by the Occupational Safety and Health Administration (OSHA) in accordance with 29 CFR Part 1910.7 to test and approve equipment or materials for their safe intended use.
 5. Testing agencies shall be authorized by authorities having jurisdiction to operate in the geographic location of the project.
 6. The Contracting Officer retains the right to check laboratory equipment in the proposed laboratory and the laboratory technician's testing procedures, techniques, and other items pertinent to testing, for compliance with the standards set forth in this Contract.
 7. Testing and inspecting requested by the Contractor not required by the Contract Documents are Contractor's responsibility.
 8. Submit additional copies of each written test report directly to authorities having jurisdiction, when they so direct.
 9. Testing agencies may not release, revoke, alter, or increase requirements of the Contract Documents or approve or accept any portion of the work.
- B. Schedule of Tests and Inspections: The Contractor shall prepare and submit a comprehensive Schedule of Tests and Inspections required by the contract documents.
1. Coordinate the Schedule of Tests and Inspections with the Contractor's Construction Schedule and other related documents. Prepare in tabular form to include the following:
 - a. Specification Section number and title.
 - b. Description of test and inspection.
 - c. Identification of applicable standards.
 - d. Identification of test and inspection methods.
 - e. Number of tests and inspections required.
 - f. Time schedule or time span for tests and inspections.
 - g. Entity responsible for performing tests and inspections.
 - h. Requirements for obtaining samples.
 - i. Unique characteristics of each quality-control service.
- C. Test Results and Reports
1. Provide actual results in a written format in the number of copies required by the QC Manager and include a statement that the item tested or analyzed conforms or fails to conform to specified requirements. If the item fails to conform, notify Contracting Officer directly through the Project Officer immediately. Written test reports will include the following information:
 - a. Date of issue.
 - b. Project title and number.
 - c. Name, address, and telephone number of testing agency.
 - d. Dates and locations of samples and tests or inspections.
 - e. Names of individuals making the test or inspection.
 - f. Designation of the work and test method.
 - g. Identifications of product and specification section.
 - h. Complete test or inspection data.
 - i. Test results and an interpretation of test results.
 - j. Ambient conditions at the time of sample taking and testing.
 - k. Comments or professional opinion on whether tested or inspected Work complies with Contract Document requirements.

- l. Name and signature of laboratory inspector.
 - m. Recommendations on retesting.
- 2. Provide 2 (two) copies to the Project Officer of each test and inspection report.
- 3. Conspicuously stamp the cover sheet for each report in large red letters "CONFORMS" or "DOES NOT CONFORM" to the specification requirements, whichever is applicable. Test results shall be signed by a testing laboratory representative authorized to sign certified test reports.
- 4. Furnish the signed reports, certifications, and other documentation to the Contracting Officer or his designated representative via the QC Manager. Furnish a summary report of field tests at the end of each month. Attach a copy of the summary report to the last daily Contractor Quality Control Report of each month.

1.13 QUALITY CONTROL CERTIFICATIONS AND COMPLETION INSPECTIONS

A. QC Certifications

- 1. Contractor Quality Control Report Certification. Each Contractor QC Report shall contain the following statement:
- 2. "On behalf of the Contractor, I certify that this report is complete and correct and equipment and material used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge, except as noted in this report." (signed by the QC Manager)
- 3. Invoice Certification. Furnish a certificate to the Contracting Officer with each payment request, signed by the QC Manager, attesting that Project Record Documents are current and attesting that the work for which payment is requested, including stored material, is in compliance with Contract requirements.
- 4. Completion Certification. Upon completion of work under this Contract, the QC Manager shall furnish a certificate to the Contracting Officer attesting that "the work has been completed, inspected, tested and is in compliance with the Contract."

B. Completion Inspections

- 1. Punch-Out Inspection.
 - a. Near the completion of all work or any increment thereof established by a contract clause or stated elsewhere in the specifications, the QC Manager shall conduct an inspection of the work and develop a "punch list" of items which do not conform to the approved drawings and specifications.
 - b. Include in the punch list any remaining items on the "Rework Items List" which were not corrected prior to the Punch-Out Inspection.
 - c. The punch list shall include the estimated date by which the deficiencies will be corrected. A copy of the punch list shall be provided to the Contracting Officer.
 - d. The QC Manager or staff shall make follow-on inspections to ascertain that all deficiencies have been corrected.
 - e. The Contractor shall notify the Contracting Officer or his designated representative that the facility is ready for the NIH Pre-Final Inspection.
- 2. Pre-Final Inspection
 - a. The NIH will perform this inspection to verify that the facility is complete and ready to be occupied. A NIH Pre-Final Punch List may be developed as a result of this inspection.

- b. Any items noted on the Pre-Final inspection shall be corrected in a timely manner and shall be accomplished before the contract completion date or phase completion date if the project is divided into phases with separate completion dates.
- c. The QC Manager shall ensure that all items on the Pre-Final Punch List are corrected prior to notifying the NIH that a Final inspection with the customer can be scheduled.

3. Final Acceptance Inspection

- a. The QC Manager, the superintendent or other primary contractor management personnel, and the Contracting Officer's representative will be in attendance at this inspection. Additional NIH personnel may be in attendance.
- b. The final acceptance inspection will be formally scheduled by the Contracting Officer based upon results of the Pre-Final Inspection. Notice shall be given to the Contracting Officer at least 14 days prior to the Final Inspection stating that all specific items previously identified to the Contractor as being unacceptable, along with all the remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection.
- c. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the additional NIH inspection costs in accordance with the Contract Clause entitled "Inspection of Construction."
- d. When the Contracting Officer takes possession of partially completed work, it will be in accordance with Contract Clause "Use and Possession Prior to Completion".

1.14 QUALITY CONTROL DOCUMENTATION.

- A. Maintain current and complete records of on-site and off-site QC Program operations and activities. QC Documentation is to be coordinated with Division 1 Sections "Construction Progress Documentation," "Photographic Documentation," "Closeout Procedures," and "Project Record Documents" if included in the project specifications.
- B. The Contractor shall have an identification and data retrieval system. Records, reports, drawings, submittals, and equipment shall be identified to reference the following:
 - 1. Contract Number
 - 2. Contract Specification Number
 - 3. Contract Drawing Number
 - 4. Submittal Document Number
 - 5. Contract Change Number
- C. Quality Control Site Records. Establish and maintain on the jobsite the following documentation readily available to the NIH Project Officer during all business hours.
 - 1. All completed Preparatory and Initial Phase Checklists, arranged by specification section.
 - 2. All milestone inspections, arranged by Activity/ Event Number.
 - 3. Photographic Documentation
 - 4. A current up-to-date copy of the Testing Plan and Log with supporting field test reports, arranged by specification section.
 - 5. Copies of all contract modifications, arranged in numerical order. Also include documentation that the modified work was accomplished.
 - 6. A current up-to-date copy of the Rework Items List.

7. Current up-to-date copies of all punch lists issued by the QC Staff of the Contractor and Sub-Contractors and all punch lists issued by the NIH.
- D. Contractor Production Report. Reports are required for each day that work is performed and shall be attached to the Contractor Quality Control Report prepared for the same day. Account for each calendar day throughout the life of the Contract. The reporting of work shall be identified by terminology consistent with the construction schedule as described in Division 1 Section "Construction Progress Documentation."
- E. Contractor Quality Control Report. Reports are required for each day that work is performed and for every seven consecutive calendar days of no work and on the last day of a no-work period. Account for each calendar day throughout the life of the Contract. The reporting of work shall be identified by terminology consistent with the construction schedule.
1. Contractor Quality Control Reports are to be prepared, signed and dated by the QC Manager and shall contain the following information:
 - a. Date of report, report number, Contract Number, and Contract Title.
 - b. Indicate if Preparatory Phase work was performed (Yes/No checkboxes).
 - c. If Preparatory Phase work was performed (including on-site and off-site work), identify its Schedule Activity Number and DFOW. The Index # is a cross reference to the Preparatory Phase Checklist. An example of the Index # is: 0025-P01, where "0025" is the Contractor Quality Control Report Number, "P" indicates Preparatory Phase, and "01" is the Preparatory Phase Checklist number(s) for this date. Each entry in this section must be accompanied with a corresponding copy of the Preparatory Phase Checklist.
 - d. Indicate if Initial Phase work was performed (Yes/No checkboxes).
 - e. If Initial Phase work was performed today (including on-site and off-site work), identify its Schedule Activity No. and DFOW. The Index # is a cross reference to the Initial Phase Checklist. An example of the Index # is: 0025-I01, where "0025" is the Contractor Quality Control Report Number, "I" indicates Initial Phase, and "01" is the Initial Phase Checklist number(s) for this date. Each entry in this section must be accompanied with a copy of the corresponding Initial Phase Checklist.
 - f. Results of the Follow-up Phase inspections held that day (including on-site and off-site work), including Schedule Activity No., the location of the DFOW, Specification Sections, etc. Indicate in the report for this definable feature of work that the work complies with the Contract as approved in the Initial Phase, work complies with safety requirements, and that required testing has been performed and include a list of who performed the tests.
 - g. List the rework items identified, but not corrected by close of business; along with its associated Schedule Activity Number.
 - h. List the rework items corrected from the rework items list along with the corrective action taken and its associated Schedule Activity Number.
 - i. Include a "remarks" section in this report which will contain pertinent information including directions received, QC problem areas, deviations from the QC Plan, construction deficiencies encountered, photographic documentation accomplished, QC meetings held, acknowledgement that as-built drawings have been updated, corrective direction given by the QC Organization and corrective action taken by the Contractor. For each remark given, identify the Schedule Activity Number that is associated with the remark.
 - j. Contractor Quality Control Report certification, signature and date.
2. Attach a summary report to the last daily Contractor Quality Control Report of each month.
 - a. Include reference to submission of Monthly Integrated Pest Management Report.

- b. Include reference to monthly Energy Conservation Report.
- F. Preparatory Phase Checklist. Each DFOW that is in the Preparatory Phase shall have this checklist filled out for it. The checklist shall be identified by terminology consistent with the construction schedule. Attach a copy of the completed checklist to the Contractor Quality Control Report of the same date.
- 1. The checklist shall contain the following information:
 - a. Specification Section, date of report, and Contract number shall be filled out. Duplicate this information in the header of the second page of the report.
 - b. DFOW, Schedule Activity Number and Index # entry and format will match entry in the Preparatory Phase section of the Contractor Quality Control Report. Duplicate this information in the header of the second page of the report.
 - c. Personnel Present: Indicate the number of hours of advance notice that was given to the NIH Representative and indicate (Yes/No checkboxes) whether or not the NIH Rep was notified. Indicate the Names of Preparatory Phase Meeting attendees, their position and company/NIH Activity they are with.
 - d. Submittals: Indicate if submittals have been approved (Yes/No checkboxes), if no indicate what has not been submitted. Are materials on hand (Yes/No checkboxes) and if not, what items are missing. Check delivered material/equipment against approved submittals and comment as required.
 - e. Material Storage: Indicate if materials/equipment is stored properly (Yes/No checkboxes) and if not, what action is/was taken.
 - f. Specifications: Review and comment on specification paragraphs that describe the material/equipment, procedure for accomplishing the work and clarify any differences.
 - g. Preliminary Work & Permits: Ensure preliminary work is in accordance with the contract documents and any necessary permits are on file, if not, describe the action taken.
 - h. Testing: Identify who performs tests, the frequency, and where tests are to occur. Review the testing plan, report abnormalities, and if the test facilities have been approved.
 - i. Safety: Indicate if an activity hazard analysis has been reviewed (Yes/No checkboxes) and comment on the review of the applicable portions of OSHA Regulations (Standards) 29 CFR 1926.
 - j. Meeting Comments: Note comments and remarks during the Preparatory Phase Meeting that were not addressed in previous sections of this checklist.
 - k. Other Items or Remarks: Note any other remarks or items that were a result of the Preparatory Phase.
 - 2. QC Manager will sign and date the checklist.
- G. Initial Phase Checklist. Each DFOW that is in the Initial Phase shall have this checklist filled out for it. The checklist shall be identified by terminology consistent with the construction schedule. Attach this checklist to the Contractor Quality Control Report of the same date.
- 1. The checklist shall contain the following information:
 - a. Specification Section, date of report, and Contract number shall be entered.
 - b. DFOW, Schedule Activity Number and Index Number entry and format will match entry in the Initial Phase section of the Contractor Quality Control Report.
 - c. Personnel Present: Indicate the number of hours of advance notice that was given to the NIH Representative and indicate (Yes/No checkboxes) whether or not the NIH Rep was notified. Indicate the Names of Initial Phase Meeting attendees, their position and company/NIH Activity they are with.

- d. Procedure Compliance: Comment on compliance with procedures identified at Preparatory Phase of Control and assurance that work is in accordance with plans, specifications and submittals.
 - e. Preliminary Work: Ensure preliminary work being placed is in compliance and if not, what action is/was taken.
 - f. Workmanship: Identify where initial work is located; if a sample panel is required (Yes/No checkboxes); is the initial work the sample (Yes/No checkboxes); and if Yes, describe the panel location and precautions taken to preserve the sample.
 - g. Resolution: Comment on any differences and the resolutions reached.
 - h. Check Safety: Comment on the safety review of the job conditions.
 - i. Other: Note any other remarks or items that were a result of the Initial Phase.
2. The QC Manager will sign and date the checklist.
- H. Reports from the QC Specialist(s).
1. Reports are required for each day that work is performed in their area of responsibility. QC specialist reports shall include the same documentation requirements as the Contractor Quality Control Report for their area of responsibility.
 2. QC specialist reports are to be prepared, signed and dated by the QC specialists and shall be attached to the Contractor Quality Control Report prepared for the same day.
- I. Testing Plan and Log.
1. As tests are performed, the QC Manager shall record on the "Testing Plan and Log" the date the test was conducted, the date the test results were forwarded to the Contracting Officer, remarks and acknowledgement that an accredited or Contracting Officer approved testing laboratory was used.
 2. Attach a copy of the updated "Testing Plan and Log" to the last daily Contractor Quality Control Report of each month.
 3. Testing Plan and Log may be an expanded version of the Testing and Inspection Schedule.
- J. Rework Items List.
1. The QC Manager shall maintain a list of work that does not comply with the Contract, identifying what items need to be reworked, the date the item was originally discovered, the date the item will be corrected by, and the date the item was corrected.
 2. There is no requirement to report a rework item that is corrected the same day it is discovered. Attach a copy of the "Rework Items List" to the last daily Contractor Quality Control Report of each month.
 3. The Contractor shall be responsible for including on this list items needing rework including those identified by the Contracting Officer.
- K. Record Documents.
1. The QC Manager is required to ensure the record documents including Record Drawings and Record Specifications required by Division 1 Section "Closeout Procedures" and Division 1 Section "Project Record Documentation" are kept current on a daily basis and marked to show deviations which have been made from the Contract drawings.
 2. Ensure each deviation has been identified with the appropriate modifying documentation (e. g. PC No., Modification No., Request for Information No., etc.).
 3. The QC Manager , shall initial each deviation and each revision.
 4. Upon completion of work, the QC Manager shall furnish a certificate attesting to the accuracy of the Record Documents prior to submission to the Contracting Officer.

- L. Report Forms. The Project Officer will make available sample formats for the various reports required by this contract which will meet the requirements of this specification. While use of these specific formats are not required, any other format used shall contain the same information.
- M. Notification of Non-Compliance. The Contracting Officer will notify the Contractor of any detected non-compliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time for excess costs or damages by the Contractor.

PART 2 - PRODUCTS (Not applicable)

PART 3 - EXECUTION (Not applicable)

END OF SECTION 014500

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This section includes requirements for construction facilities and temporary controls, including temporary utilities, support facilities and security and protection. All costs associated with such work and subsequent removal shall be the sole burden of the Contractor. The Contractor is responsible for any repairs required to restore City of Rockville property to original or better condition if so damaged by temporary construction.
- B. Temporary utilities include but are not limited to the following:
 - 1. Temporary water service and distribution.
 - 2. Temporary electric power and lighting.
 - 3. Temporary heat and ventilation.
- C. Support facilities include but are not limited to the following:
 - 1. Construction Signage.
 - 2. Waste disposal services.
 - 3. Other construction aids and miscellaneous services and facilities.
- D. Security and protection facilities include but are not limited to the following:
 - 1. Security enclosure and lockup.
 - 2. Barricades, warning signs, and lights.
- E. Provide temporary facilities and controls required for construction activities except, if any, for facilities and controls indicated as existing or provided by City of Rockville or others.
- F. City of Rockville will not be responsible for any cost or use charges for temporary facilities or utilities as a basis of claims for Change Orders.
- G. Related Sections: This specification section is related to any and all specification sections with explicit or implicit reference to temporary facilities and controls. Specific submittal requirements of these related specification sections are not included in this section. Related sections include but are not limited to the following specification sections:
 - 1. Division 1 Section "Summary"
 - 2. Division 1 Section "Work Restrictions"
 - 3. Division 1 Section "Project Management and Coordination"
 - 4. Division 1 Section "Quality Requirements"
 - 5. Division 1 Section "References"
 - 6. Division 1 Section "Construction Quality Control"
 - 7. Division 1 Section "Safety and Health"

8. Division 1 Section "Execution Requirements"
9. Division 1 Section "Cutting and Patching"
10. Division 1 Section "Selective Demolition"
11. Division 1 Section "Closeout Procedures"
12. Division 1 Section "Project Record Documents"
13. Division 1 Section "Operation and Maintenance Documentation"
14. Division 1 Section "Demonstration and Training"

1.3 DEFINITIONS

- A. Permanent Enclosure: As determined by the Project Officer, permanent or temporary roofing is complete, insulated, and weathertight; exterior walls are insulated and weathertight; and all openings are closed with permanent construction or substantial temporary closures.

1.4 UTILITY USE CHARGES

- A. The Contractor shall provide all temporary utilities which are used and required by all entities engaged in construction activities at the Project site.
- B. The point at which the City of Rockville will deliver such utilities and the quantity available are as directed by the Project Officer. The Contractor shall pay all costs incurred in connecting, converting and transferring City of Rockville utilities to the work. The Contractor shall make connections, including providing backflow preventing devices on connections to domestic water lines, shall provide transformers, and shall make all disconnections.
- C. Water Service: The Contractor may use reasonable amounts of water from the existing City of Rockville water system, without metering and without payment of use charges.
- D. Sewer Service: The Contractor may use the existing City of Rockville sewer system, without payment of use charges.
- E. Electric Power Service: The Contractor may use reasonable amounts of electric power from the existing City of Rockville electric power distribution system, without metering and without payment of use charges.

1.5 SUBMITTALS

- A. Reports: Submit reports of tests, inspections, meter readings and similar procedures for temporary utilities.
- B. Implementation and Termination Schedule: Within 15 calendar days after the date established for the submittal of the Contractor's Construction Schedule, submit a schedule indicating implementation and termination of each temporary utility. If implementation or termination will interrupt utility service outside the limit of construction include milestones for submission of outage requests in the schedule. Coordinate schedule with requirements for the Utility Service Interruption Plan contained in Division 1 Section "Project Management and Coordination."
- C. Shop Drawings: Submit layout indicating location of all fencing, gate locations, and size and type of fencing and gates

- D. State of Maryland Stormwater Management requirements: Submit 2 signed copies of the proposed Sequence of Construction plan sent by the Contractor to the State of Maryland to the Project Officer. Submit 1 copy of the State of Maryland approval to the Contracting Officer.
- E. Integrated Pest Management (IPM) Program. Within 14 calendar days after the date of Notice to Proceed, submit the following for approval:
 - 1. IPM Service Plan. The plan shall include a description of the implemented pest management program during all phases of construction. Include at a minimum, the following:
 - a. Grounds and ground cover for task orders which involve any exterior work.
 - b. Solid waste management.
 - c. Site (interior and exterior) sanitation.
 - d. Other factors that contribute to pest infestation.
 - e. Regularly scheduled monitoring and survey program for the identification and control of insect and rodent pests.
 - 2. Identification of the IPM Quality Control supervisor. Include a copy of the qualification certificate and resume.
 - 3. Copy of the Commercial Pesticide Applicators Business License.
 - 4. Copy of Pesticide Applicators Certificates and resume for all personnel assigned to each task order.

1.6 QUALITY REQUIREMENTS

- A. Standards and Regulations: Comply with industry standards and with applicable laws and regulations of authorities having jurisdiction, including but not limited to the following:
 - 1. Building code requirements.
 - 2. Health and Safety regulations.
 - 3. Utility company regulations.
 - 4. Police, fire department and rescue squad rules.
 - 5. Environmental protection regulations.
 - 6. NFPA 241 "Standards for Safeguarding Construction, Alterations and Demolition Operations".
 - 7. ANSI-A10 Series standards for "Safety Requirements for Construction and Demolition".
 - 8. NECA Electrical Design Library "Temporary Electrical Facilities", and NEMA, NECA and UL standards and regulations for temporary electric service. Install service in accordance with NFPA 70, "National Electric Code."
 - 9. Maryland Pesticide Applicators Laws and Regulations.
- B. Inspections: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

1.7 PROJECT CONDITIONS

- A. Install, operate, maintain and protect temporary facilities and controls.
 - 1. Keep temporary services and facilities clean and neat in appearance.
 - 2. Operate temporary services in a safe and efficient manner.
 - 3. Relocate temporary services and facilities as needed as work progresses.

4. Do not overload temporary services and facilities or permit them to interfere with progress.
 5. Provide necessary fire prevention measures.
 6. Do not allow hazardous, dangerous or unsanitary conditions, or public nuisances to develop or persist on-site.
- B. Prepare a schedule indicating dates for implementation and termination of each temporary utility and incorporate into the project schedule. At the earliest feasible time, when acceptable to the Project Officer, change over from temporary services to use of permanent services and remove temporary facilities when no longer needed.
- C. Temporary Use of Permanent Facilities: Contractor shall assume responsibility for the operation, maintenance and protection of each permanent service during its use as a construction facility prior to acceptance by NIH.
- D. Existing Equipment and Items: Cover or otherwise protect and provide security for existing equipment and other items that are to remain in place, to prevent soiling, damage and loss.
1. Temporarily move equipment and other items that interfere with the performance of required work. Upon completion of the work, return the equipment and items to their original location and installation condition.
 2. Store equipment and other items that have been temporarily removed. Upon reinstallation, clean and, if damaged, repair or replace equipment and items to match their condition prior to removal.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Provide new or undamaged, previously used materials in serviceable condition. Provide materials suitable for use intended.
- B. Tarpaulins: Waterproof, fire-resistant UL labeled with flame spread rating of 15 or less. For temporary enclosures, provide translucent, nylon-reinforced, laminated polyethylene or polyvinyl chloride, fire-retardant tarpaulins.
- C. Water: Potable and approved by local health authorities.
- D. Wood: Lumber complying with DOC PS 20 and applicable grading rules of an inspection agency certified by ALSC's Board of Review for specific use. Provide preservative treated lumber where partially or fully in contact with the earth, concrete or masonry.
- E. Sign, Directory and Other Graphic Panel Materials: Unless otherwise indicated, products shall comply as follows:
1. Panels: Exterior type Grade B-B high density concrete-form-overlay plywood.
 2. Paint: Exterior primer and exterior grade alkyd gloss enamel top coat.
- F. Safety Barrier and Covered Walkway Materials: Unless otherwise indicated, products shall comply as follows:
1. Panels: Minimum 5/8 inch (16 mm) thick exterior plywood.
 2. Paint: Exterior primer and exterior grade acrylic-latex emulsion top coat.

- G. Open-Mesh Fencing: Minimum 0.12 inch (3 mm) thick galvanized 2 inch (50 mm) chainlink fabric fencing with galvanized steel pipe posts, 1-1/2 inches (38 mm) inside diameter for line posts and 2-1/2 inches (64 mm) inside diameter for corner posts. At the discretion of the Project Officer, steel posts and vinyl "snow fencing", or removable chain link fencing, may be provided on a temporary basis for work areas adjacent to the project site.
1. Fence height: Minimum 8 feet (2.5 m).
 2. Top Protection: Galvanized barbed-wire top strand.
- H. Open-Mesh fencing with Vinyl Slats: Minimum 0.12 inch (3 mm) thick galvanized 2 inch (50 mm) chainlink fabric fencing with galvanized steel pipe posts, 1-1/2 inches (38 mm) inside diameter for line posts and 2-1/2 inches (64 mm) inside diameter for corner posts.
1. Fence height: Minimum 8 feet (2.5 m).
 2. Top Protection: Galvanized barbed-wire top strand.
 3. Vinyl Slats: Dark Brown, installed vertically.
- I. Lumber and Plywood: Comply with requirements in Division 6 Section "Rough Carpentry."
- J. Gypsum Board: Minimum 1/2 inch (12.7 mm) thick by 48 inches (1219 mm) wide by maximum available lengths; regular-type panels with tapered edges. Comply with ASTM C 36.
- K. Insulation: Unfaced mineral-fiber blanket, manufactured from glass, slag wool, or rock wool; with maximum flame-spread and smoke-developed indices of 25 and 50, respectively.
- L. Job-Built Temporary Office, Shop and Shed Materials: Unless otherwise indicated, products shall comply with the following:
1. Framing, Sheathing and Siding: UL labeled fire-treated lumber and plywood.
 2. Roofing: UL Class A standard weight asphalt shingles, or UL Class C mineral surfaced roll roofing.
 3. Exterior Paint: Exterior primer and exterior grade acrylic-latex emulsion top coat as specified in Division 9 Section "Painting".
 4. Interior Wall Panels for Offices: Gypsum board as specified above.
 5. Interior Paint for Offices: 2 coats interior latex-flat wall paint as specified in Division 9 Section "Painting."

2.2 EQUIPMENT

- A. General: Provide new or undamaged, previously used equipment in serviceable condition. Provide equipment suitable for use intended. All equipment must meet applicable local codes governing its use.
- B. Water Hoses: 3/4 inch (19 mm) heavy duty abrasion-resistant flexible rubber hoses, 100 feet (30 m) long with pressure rating greater than the maximum pressure of the water distribution system. Provide adjustable shutoff nozzles at hose discharge.
- C. Electric Outlets: Properly configured NEMA-polarized outlets to prevent insertion of 110 to 120 Volt plugs into higher voltage outlets. Provide receptacle outlets equipped with ground fault circuit interrupters, reset button and pilot light for connection of power tools and equipment.
- D. Electric Power Cords: Grounded extension cords.
1. Provide hard-service cords where exposed to abrasion or traffic.

2. Provide waterproof connectors to connect separate lengths of electric cords where single lengths will not reach areas of construction activity.
 3. Do not exceed safe length-voltage ratio.
- E. Lamps and Light Fixtures: General service incandescent lamps of wattage required for adequate illumination.
1. Provide guard cages or tempered glass enclosures where exposed to breakage.
 2. Provide exterior fixtures where exposed to moisture.
- F. Unless the Project Officer authorizes the use of permanent heating system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
 2. Heating Units: Temporary heating units that have been tested and labeled by UL, FM or another recognized trade association related to the type of fuel consumed as appropriate for the space being heated.
- G. Temporary Offices: Prefabricated or mobile units or similar job-built enclosures, inclusive of but not limited to lockable entrances, operable windows, serviceable finishes, heating and air conditioning, electric power and lighting, and foundations adequate for the loads.
- H. Self-Contained Toilet Units: Temporary single-occupant toilet units of the chemical, aerated recirculation, or combustion type for use by all construction personnel. Units shall be properly vented and fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material.
- I. Fire Extinguishers: Hand-carried portable UL-rated fire extinguishers.
1. Class A extinguishers for temporary offices and similar spaces.
 2. Class ABC dry chemical extinguishers or a combination of extinguishers of NFPA recommended classes for the exposures in other locations.
 3. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent and size required by location and class of fire exposure.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Use qualified personnel for installation of temporary facilities.
- B. Locate facilities where they will serve the project adequately and result in minimum interference with performance of construction activities. Maintain, relocate and modify facilities as required during the construction period. Contractor is responsible for scheduling in order to provide each facility ready for use when needed to avoid delay. Temporary facilities shall remain in place until no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

- A. General: The Contractor shall connect to existing services.

1. Notification to interrupt any building service and/or utility service shall be requested in writing to the Project Officer a minimum of 15 working days prior to the desired date of interruption. CITY OF ROCKVILLE reserves the right to refuse any request and to schedule such interruption on a later or earlier date and time which is mutually agreeable to CITY OF ROCKVILLE and the Contractor.
 2. Provide adequate capacity at each stage of construction. Prior to temporary utility availability, provide trucked-in services.
 3. Obtain easements to bring in temporary utilities to the site where CITY OF ROCKVILLE easements are not available for that purpose.
- B. Water Service: Install temporary water service and distribution piping of sizes and pressures adequate for construction needs until permanent water service is in use. Sterilize water piping prior to use.
1. Provide rubber hoses as necessary to serve Project site.
 2. As soon as water is required at each level, extend service to form a temporary water- and fire-protection standpipe. Provide distribution piping. Space outlets so water can be reached with a 100-foot (30-m) hose. Provide one hose at each outlet.
 3. Where installations below an outlet might be damaged by spillage or leakage, provide a drip pan of suitable size to minimize water damage. Drain accumulated water promptly from pans.
 4. Provide backflow preventors at connections to existing water service.
 5. Provide pumps to supply a minimum of 30-psi (200-kPa) static pressure at highest point. Equip pumps with surge and storage tanks and automatic controls to supply water uniformly at reasonable pressures.
- C. Electric Power Service: Provide weatherproof, grounded, electric power service and distribution system of sufficient size, capacity and power characteristics for construction needs. Include meters, transformers, overload-protected disconnects, automatic ground-fault interrupters and main distribution switch gear.
1. Make connections at location(s) designated by the Project Officer.
 2. Feeder and branch wiring with area distribution boxes shall be located so that power is available throughout the project site by use of power cords.
 3. Provide waterproof connectors to connect separate lengths of electrical power cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.
 4. Install all electrical devices, both temporary and permanent, in accordance with the National Electric Code.
 5. Provide 4-gang outlets, spaced so 100-foot (30-m) extension cord can reach each area for power hand tools and task lighting. Provide a separate 125-V ac, 20-A circuit for each outlet.
- D. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations and traffic conditions at all times.
1. Install and operate temporary lighting that will fulfill security and protection requirements without operating the entire system.
 2. Install temporary lighting in accordance with the National Electric Code.
- E. Heating and Cooling: Provide temporary heat and cooling required for the construction activities in new and existing spaces, including but not limited to curing or drying completed installations and protecting construction from adverse effects of low temperatures and/or high humidity. Select equipment from that specified that will not have a harmful effect on completed installations or elements being installed.

1. Maintain a minimum temperature of 50 degrees F (10 degrees C) in permanently enclosed portions of building for normal construction activities, and 65 degrees F (18.3 degrees C) for finishing activities and areas where finished Work has been installed.
 2. Provide temporary heating and cooling for occupied CITY OF ROCKVILLE spaces where construction activities preclude the existing heating and cooling systems from maintaining normal operating temperatures.
- F. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment from that specified that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.
- G. Heating Facilities: Except where CITY OF ROCKVILLE authorizes use of the permanent system, provide vented self-contained, LP-gas or fuel oil heaters with individual space thermostatic control. Do not use gasoline-burning space heaters, open flame or salamander-type heating units. All temporary heating and cooling systems shall be operated in accordance with the manufacturer's instructions.
- H. Telephone Service: The Contractor shall provide temporary telephone service within the contract area only if requested in writing by the Project Officer. If required, telephone service shall be removed prior to contract completion. The Contractor shall pay all costs of service. Installation and removal of service shall be subject to the approval of the Project Officer.
- I. Sanitary and Drinking Water Facilities: Provide temporary toilets, wash facilities and drinking water fixtures in compliance with regulations and health codes for type, number, location, operation and maintenance of fixtures and facilities.
1. Disposable Supplies: Provide toilet tissue, paper towels, paper cups, and similar disposable materials for each facility. Maintain adequate supply. Provide covered waste containers for disposal of used material.
 2. Toilets: Use of existing CITY OF ROCKVILLE toilet facilities will be permitted. Clean and maintain facilities in a condition acceptable to the Contracting Officer and, at completion of construction, restore facilities to condition prevalent at the time of initial use.
 3. Toilets: Install separate self-contained toilet units for male and female personnel. Shield toilets to ensure privacy.
 4. Toilets: Install temporary toilet facilities connected to local water and sanitary lines. Provide lavatories, mirrors, urinals, and water closets. Provide only potable-water connections. Provide individual compartments for water closets. Provide suitable enclosure with nonabsorbent sanitary finish materials and adequate heat, ventilation, and lighting.
 5. Wash Facilities: Install wash facilities supplied with potable water at convenient locations for personnel who handle materials that require wash up. Supply cleaning compounds appropriate for each type of material handled.
 - a. Dispose of drainage through proper connections to local sanitary lines.
 - b. Supply cleaning compounds appropriate for each condition.
 - c. Include safety showers, eyewash fountains and similar facilities for the convenience, safety and sanitation of personnel.
 6. Drinking-Water Fixtures: Install drinking-water fountains connected to the existing water service where indicated.
 7. Drinking -Water Facilities: Provide bottled-water, drinking-water units.
 - a. Where power is accessible, provide electric water coolers to maintain dispensed water temperature at 45 to 55 degrees F (7.2 to 12.7 degrees C).

- J. Sewers and Drainage: If sewers are available, provide temporary connections to remove effluent that can be discharged lawfully. If sewers can not be used, provide drainage ditches, dry wells, stabilization ponds and similar facilities. If neither sewers nor drainage facilities can be lawfully used for discharge of effluent, provide containers to remove and dispose of effluent off-site in a lawful manner.
- K. Sewers and Drainage: Where sewers are available, provide temporary connections to remove effluent that can be discharged lawfully. If sewers are not available, provide containers to remove and dispose of effluent off-site in a lawful manner.
 - 1. Filter out excessive amounts of soil, construction debris, chemicals, oils and similar contaminants that might clog sewers or pollute waterways.
 - 2. Connect temporary sewers as directed by the Project Officer and sewer utility officials.
 - 3. Maintain temporary sewers and facilities in a clean, sanitary condition. Following use, promptly restore sewers and facilities to normal conditions.
- L. Erosion and Sediment Control: The Contractor shall comply with all provisions of the Maryland Department of the Environment requirements for Storm Water Management, including all required submittals to the state.

3.3 SUPPORT FACILITIES INSTALLATION

- A. Construction Signage and Other Temporary Signs: Locate signs where indicated or directed by the Project Officer to inform the public and instruct persons seeking entrance to the project. Support exterior signs on posts or framing of steel or preservative-treated wood. All signage shall conform to the standards set forth in the DCAB Guide for Construction Site Signage.
 - 1. Exterior Construction Site Sign: All exterior construction sites shall have at least one and not more than three site signs. Signs will be provided by the Project Officer for installation by the Contractor. The Contractor shall provide a written request to the Project Officer 21 calendar days before work starts of his need for exterior construction site signs. The signs for smaller projects and those with a construction duration of less than six months will be 3' x 4'.
 - 2. Interior Construction Sign:
 - a. All interior construction areas shall have a minimum of 2 interior construction information signs. The signs will be provided by the Project Officer for installation by the Contractor. The Contractor shall provide a written request to the Project Officer 21 calendar days before work starts of his need for the Interior Construction Signs. The signs shall be placed on site not less than 14 calendar days prior to the start of construction. The signs will be either 8 1/2" x 11" or 11" x 17".
 - b. Construction in Progress Door Hanger Signs: Door hanger signs shall be hung on the door knobs on the outside of the entrance door(s) of the room(s) in which construction is being performed. The signs will be provided by the Project Officer for installation by the Contractor. The Contractor shall provide a written request to the Project Officer 21 calendar days before work starts of his need for the Construction in Progress signs. Include the number of signs needed. Door hanger signs shall be in place not less than 7 calendar days prior to construction. The signs are 100 x 225 mm paper.
 - c. Construction in Your Neighborhood Door Hanger Signs: Door hanger signs shall be hung on the door knobs on the outside of the adjacent corridors entrance door(s) on floors above and below the room(s) that may be affected by construction. The signs will be provided by the Project Officer for installation by the Contractor. The Contractor shall provide a written request to the Project Officer 21 calendar days before work starts of his need for the Construction in

Progress signs. Include the number of signs needed. Door hanger signs shall be in place not less than 7 calendar days prior to construction. The signs are 100 x 225mm paper.

3. Hard Hat Area Sign: The entire work area under this contract is designated as a Hard Hat Area. The Contractor shall assure that all contractor personnel, vendors, and visitors utilize hard hats within the project area. The Contractor shall provide hard hat area signs at each entrance to the Project site for all construction work performed under this contract. Sign shall be approximately 450 x 600 mm, with minimum 50 mm tall lettering as follows:

**HARD HAT AREA
AUTHORIZED PERSONNEL ONLY
ALL PERSONNEL ENTERING THIS
CONSTRUCTION SITE SHALL BE EQUIPPED
WITH PROPER SAFETY ATTIRE**

4. Asbestos Abatement Sign: The Contractor shall provide asbestos demolition signs during any asbestos demolition and removal activities in accordance with the requirements in Division 2 Section "Removal of Asbestos Material."
 5. Other Temporary Signs: The Contractor shall provide all signage for temporary construction, closing of roads, parking lots, sidewalks or other areas. Signage shall conform to the standards set forth in the DCAB Guide for Construction Site Signage. A copy of the guide may be obtained from the Project Officer.
 6. Do not permit installation of unauthorized signs.
- B. Waste Disposal Facilities:
1. See Division 1 Section "Use, Handling, Storage, Transporting, Accumulation and Disposal of CITY OF ROCKVILLE Controlled Material" for specific requirements related to waste disposal.
 2. Provide waste-collection containers in sizes adequate to handle waste from construction operations.
 3. Comply with Division 1 Section "Execution Requirements" for progress cleaning requirements.
- C. Janitorial Services: Provide janitorial services on a daily basis for temporary offices, first-aid stations, toilets, wash facilities, lunchrooms, and similar areas.
- D. Temporary Elevator Usage: Refer to Division 14 Sections for temporary use of new elevators.
- E. Existing Elevator Usage: See Division 1 Section "Work Restrictions" for additional requirements on use of existing elevators.
1. Provide protective coverings, barriers, devices, signs, or other procedures to protect elevator car and entrance doors and frame. If, despite such protection, elevators become damaged, engage elevator Installer to restore damaged work so no evidence remains of correction work. Return items that cannot be refinished in field to the shop, make required repairs and refinish entire unit, or provide new units as required.
- F. Existing Stair Usage: Use of existing stairs will be permitted, as long as stairs are cleaned and maintained in a condition acceptable to NIH. At Substantial Completion, restore stairs to condition existing before initial use.

1. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If, despite such protection, stairs become damaged, restore damaged areas so no evidence remains of correction work.
- G. Collection and Disposal of Waste: Collect waste from construction areas and elsewhere daily. Enforce requirements strictly and dispose of material lawfully.
1. Comply with NFPA 241 for removal of combustible waste material and debris.
 2. Do not hold waste materials more than 7 days during periods when the ambient temperature remains continuously less than 80 degF (27 degC), or more than 3 days when the temperature exceeds or is expected to rise above 80 degF (27 degC).
 3. Handle and properly containerize hazardous, dangerous or unsanitary waste materials separately from other waste.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects. Avoid using tools and equipment that produce harmful noise. Restrict use of noisemaking tools and equipment to hours that will minimize complaints from persons or firms near Project site.
- B. Barricades, Warning Signs, and Lights: Comply with standards and code requirements for erecting structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and the public of the hazard involved. Where appropriate and needed, provide lighting, including flashing red or amber lights.
- C. Security Enclosure and Lockup: Install substantial temporary enclosure of partially completed areas of construction. Provide locking entrances to prevent unauthorized entrance, vandalism, theft and similar violations of security.
1. Storage: Provide a secure lockup for valuable stored materials and equipment.
 2. Enforce discipline in connection with the installation and release of material to minimize the opportunity for theft and vandalism.
- D. Temporary Fire Protection: Until fire protection needs are supplied by permanent facilities, install and maintain temporary fire protection facilities of types needed to protect against reasonably predictable and controlled fire losses. Comply with NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations".
1. Comply with NFPA 10 "Standard for Portable Fire Extinguishers". Provide fire extinguishers, installed on walls on mounting brackets, visible and accessible from space being served, with sign mounted above.
 - a. Field Offices: Class A stored-pressure water-type extinguishers.
 - b. Other Locations: Class ABC dry-chemical extinguishers or a combination of extinguishers of NFPA-recommended classes for exposures.
 2. Locate fire extinguishers where convenient and effective for their intended purpose, but not less than one extinguisher on each floor at or near each access route exit or entrance.
 3. Store combustible materials in containers in fire-safe locations.

4. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire protection facilities and access routes. Prohibit smoking in hazardous fire-exposure areas.
 5. Provide supervision of welding operations, combustion-type temporary heating units and other sources of fire ignition.
 6. All required standpipe systems and sprinkler systems shall be maintained in conformity with the progress of building activity in such a manner that they are always in working order.
 7. Develop and supervise an overall fire-prevention and first-aid fire-protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
 8. Provide hoses for fire protection of sufficient length to reach construction areas. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.
 9. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.
- E. Permanent Fire Protection: At the earliest feasible date in each area of the Project, complete installation of the permanent fire protection facilities, including connected services, and place into operation and use. Instruct key personnel in the use of the facilities.
- F. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress or completed, from exposure, inclement weather, other construction operations and similar conditions.
1. Where heat is needed and the permanent building enclosure is not complete, provide temporary enclosures where there is no other provision for containment of heat. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions or unacceptable effects.
 2. Install tarpaulins securely using fire-retardant-treated wood framing and other materials.
 3. Vertical Openings: Close openings of **25 sq. ft. (2.3 sq. m.)** or less with plywood or similar materials.
 4. Horizontal Openings: Close openings through floor or roof decks and other horizontal surfaces with load-bearing wood-framed construction.
 5. Where enclosure exceeds **100 sq. ft. (9.2 sq. m)** in area, use UL labeled fire-retardant-treated wood and plywood for framing and sheathing.
- G. Safety: The contractor shall protect the integrity of any installed safety systems or personnel safety devices. If entrance into systems serving safety devices is required, the Contractor shall obtain prior approval from the Project Officer. If it is temporarily necessary to remove or disable personnel safety devices in order to accomplish contract requirements, the Contractor shall provide alternative means of protection prior to removing or disabling any permanently installed safety devices or equipment and shall obtain prior written approval from the Project Officer.
- 3.5 OPERATION, TERMINATION, AND REMOVAL
- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage by freezing temperatures and similar elements.

1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
 2. Protection: Prevent water-filled piping from freezing. Maintain markers for underground lines. Protect underground lines from damage during excavation operations.
- C. Temporary Facility Changeover: Except for using permanent fire protection facilities as soon as available, do not change over from temporary protection facilities until authorized by the Project Officer.
- D. Termination and Removal: Unless the Project Officer requests that a temporary facility be maintained longer, each temporary facility shall be removed when the need for its service has ended, when it can be replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with the temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
1. Materials and facilities that constitute temporary facilities are the property of the Contractor, except City of Rockville reserves the right to take possession of project identification signs.
 2. Remove temporary paving not intended for or acceptable for integration into permanent paving. Where the area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for subsoil or fill in the area. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, in accordance with the requirements of the governing authority.

END OF SECTION 015000

SECTION 015950 - SAFETY AND HEALTH

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. References: In addition to publications referenced in the Construction Contract Clauses, the following Code of Federal Regulations (CFR) publications designate and define hazardous materials and conditions, and establish procedures for handling these materials and conditions. Omission of any publication in this section does not remove any obligation or legal requirement on the part of the contractor to comply with all legal requirements for the location of the work.
 - 1. 29 CFR, Part 1910: Occupational Safety and Health Administration (OSHA) General Industry and Health Standards.
 - 2. 29 CFR, Part 1926: OSHA Construction Industry Standards.
 - 3. 40 CFR, Part 61: National Emission Standards for Hazardous Air Pollutants.
 - 4. 40 CFR, Part 261: Environmental Protection Agency (EPA) Characteristics of Hazardous Waste.
 - 5. 40 CFR, Part 761, EPA Polychlorinated Biphenyls (PCBs), Manufacturing, Processing, Distribution in Commerce and Use Prohibitions.
 - 6. 40 CFR, Part 763: EPA Asbestos.
 - 7. Federal Standard 313A: Material Safety Data Sheets, Preparation and the Submission of.
- B. Related Sections: This specification section is related to any and all specification sections with explicit or implicit reference to cutting and patching. Specific submittal requirements of these related specification sections are not included in this section. Related sections include but are not limited to the following specification sections:
 - 1. Division 1 Section "Summary"
 - 2. Division 1 Section "Work Restrictions"
 - 3. Division 1 Section "Project Management and Coordination"
 - 4. Division 1 Section "Submittal Procedures"
 - 5. Division 1 Section "Quality Requirements"
 - 6. Division 1 Section "References"
 - 7. Division 1 Section "Construction Quality Control"
 - 8. Division 1 Section "Temporary Facilities and Controls"
 - 9. Division 1 Section "Safety and Health"
 - 10. Division 1 Section "Product Requirements"
 - 11. Division 1 Section "Execution Requirements"
 - 12. Division 1 Section "Cutting and Patching"
 - 13. Division 1 Section "Selective Demolition"
 - 14. Division 1 Section "Closeout Procedures"
 - 15. Division 1 Section "Operation and Maintenance Documentation"
 - 16. Division 1 Section "Project Record Documents"
 - 17. Division 1 Section "Demonstration and Training"
 - 18. Division 13 Section "Removal of Asbestos Materials"

- C. Hazardous Materials: Some hazardous and toxic materials and substances are included in 29 CFR Part 1910, subparts H and Z, and in 29 CFR Part 1926 and others additionally defined in Federal Standard 313A. Commonly encountered hazardous materials include but are not limited to asbestos, PCBs, explosives and radioactive material.
 - 1. Asbestos may be found in spray-on fireproofing, insulation, boiler lagging, pipe coverings and other materials. See Division 13 Section "Removal of Asbestos Materials" for removal requirements.
 - 2. PCBs may be contained in transformers, capacitors, voltage regulators, oil switches, mechanical insulation and other materials.
- D. Acquisition of Publications: Referenced CFR publications may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

1.3 SUBMITTALS

- A. Contractor's Safety and Health Program: The contractor shall submit a Site Specific Safety and Health Program which includes a Site Specific Safety and Health Plan and a copy of the Company Safety and Health Plan to the Contracting Officer within 14 calendar days of the Notice to Proceed or before work commences on the project site, whichever is earlier.
 - 1. City of Rockville will review the submitted Safety and Health Plans for general conformance to the requirements of the Contract Documents.
 - 2. City of Rockville will not make any judgment as to the adequacy of the submitted plans with respect to federal, state, and local safety laws and safety regulations. If the plans are found to meet the requirements of the Contract Documents, City of Rockville will acknowledge that the Contractor has provided copies of the plans and accept them as meeting the contract requirement for the Contractor to provide copies of his safety program.
 - 3. City of Rockville will not approve any contractor Safety and Health Plan. Safety is the Contractor's responsibility under the current laws and governing regulation.
 - 4. Submission of the Safety and Health Plans to City of Rockville does not relieve the contractor of any safety responsibility.
 - 5. Specific content requirements for the Contractor's Safety and Health Program are included in this section.
- B. Accident Reports. The Contractor must submit to the Contracting Officer and Project Officer a written report within three calendar days of any accident, fire, emergency, theft or incident in which any personal or property damage took place, regardless of any other notifications performed. Include a copy of each accident report that is submitted by the Contractor or Subcontractors to their insurance carriers, within seven calendar days after the date of the accident.

1.4 PRECONSTRUCTION SAFETY MEETING

- A. Prior to commencing construction, representatives of the Contractor, including the general superintendent and one or more safety representatives, shall meet with the Contracting Officer for the purpose of reviewing Contract safety and health requirements.
 - 1. The Contractor's Safety and Health Program shall be reviewed, and implementation of safety and health provisions pertinent to the Work shall be discussed.

2. The Contractor shall be prepared to discuss, in detail, the Contractor's site specific Safety and Health Plan including measures intended to control any unsafe or unhealthy conditions associated with the work to be performed under the contract.
3. This meeting may be held in conjunction with the preconstruction conference, if so directed by the Contracting Officer. The conduct of this meeting is not contingent upon a general preconstruction meeting.
4. The level of detail for the safety meeting is dependent upon the nature of the work and the potential inherent hazards.
5. The Contractor shall advise the Contracting Officer of any special safety restrictions he has established so that City of Rockville personnel can be notified of these restrictions.
6. No later than 3 calendar days after the Preconstruction Safety Meeting, the Contractor shall distribute minutes of the meeting to each party present and to other concerned parties, including the Contracting Officer.

1.5 COMPLIANCE WITH REGULATIONS

- A. Work shall comply with all applicable state and local safety and health regulations.
- B. In case of a conflict between applicable regulations, the more stringent requirements shall apply.
- C. Contractor Responsibility: The Contractor shall obtain all required permits for work to be performed. The Contractor shall assume full responsibility and liability for compliance with all applicable codes, standards and regulations pertaining to the health and safety of personnel during execution of the Work, and shall hold the Government harmless for any action on the Contractor's part, or that of the Contractor's employees or subcontractors, that results in illness, injury or death.

1.6 ELECTRICAL

- A. The Contractor shall appoint an individual responsible for the electrical safety of each work team to restrict entry to dangerous locations to those authorized by him jointly with NIH.
- B. Electrical arc welding equipment shall not be connected to the building power supply.

1.7 GAS PROTECTION

- A. The Contractor shall have one or more employees properly trained in operation of gas testing equipment and formally qualified as gas inspectors who shall be on duty during times workmen are in confined spaces. Their primary functions shall be to test for gas and operate testing equipment. Unless equipment of constant supervisory type with automatic alarm is employed, gas tests shall be made at least every 2 hours or more often when character of ground or experience indicates gas may be encountered. A gas test shall be made before workmen are permitted to enter the excavation after an idle period exceeding one-half hour.
- B. Readings shall be permanently recorded daily, indicating the concentration of gas, number and location of drilled piers, point of test, date, and time of test.
- C. Special requirements, coordination, and precautions will apply to areas that contain a hazardous atmosphere or, by virtue of their use or physical character, may be oxygen deficient. A check by CITY OF ROCKVILLE is required prior to entering areas that contain hazardous or

oxygen-deficient atmospheres. Surveillance and monitoring shall be required in these types of work spaces by both Contractor and Government personnel.

1.8 MATERIAL DELIVERIE

- A. Whenever practicable, deliveries shall be made during regular CITY OF ROCKVILLE working hours and only when the Contractor's representative is available to receive them. Deliver material in approved containers and with properly licensed vehicles and operators. Open delivery vehicles are not permitted. Deliver materials in fully closed vehicles or tarp covered vehicles. All dump trucks shall be fully covered while in transport to and from the unloading site. All loads shall be securely fastened until unloading. Engines shall not be left running while vehicles are loading, unloading, waiting or parked. Do not block roads, walks, building entrances/exits, fire hydrants and standpipes, exterior tanks or building gas connections.

1.9 HAZARDOUS MATERIALS

- A. The Contractor shall bring to the attention of the Contracting Officer, or the Contracting Officer's authorized representative, any material encountered during execution of the Work that the Contractor suspects is hazardous. The Contracting Officer shall determine whether the Contractor shall perform tests to determine if the material is hazardous. If the suspected material is leaking or spilling from its location the contractor is to contact the CITY OF ROCKVILLE Fire Department immediately.
- B. If the Contracting Officer directs the Contractor to perform tests on suspected hazardous materials and the material is found to be hazardous, or if the material is found to be hazardous without Contractor testing, and/or if additional protective measures are required, a change to the Contract price may be provided, subject to the applicable provisions of the Contract.

1.10 ADDITIONAL CITY OF ROCKVILLE SAFETY REQUIREMENTS

- A. The Contractor shall comply with all established CITY OF ROCKVILLE Standards, Codes and Regulations and obtain appropriate approvals from the CITY OF ROCKVILLE Divisions of Safety, Health, Security and Fire Protection.
- B. No work shall be performed in any area occupied by the public or CITY OF ROCKVILLE employees unless approved by the Project Officer.
- C. In the event of an emergency in a construction site that has been secured with a chain, the CITY OF ROCKVILLE Fire Department will cut the chain to gain entry. The Contractor shall be responsible for a new chain.
- D. Accident Treatment and Records: The Contractor shall post emergency first aid information and CITY OF ROCKVILLE emergency Telephone Numbers at the work site.
- E. Safety Clearance Procedures (Lockout/Tagout Tag System). The following Lockout/Tagout procedures will be followed unless more stringent procedures are required by current laws and regulations. The following procedures do not relieve the contractor from any more stringent requirements of the applicable codes and regulations. The safety of contractor and CITY OF ROCKVILLE personnel in areas impacted by the project remains the contractor's responsibility during construction.

1. Lockout/Tagout procedures shall be in accordance with OSHA 29 CFR 1910 and OSHA 29 CFR 1926. Lockout/Tagout procedures shall be included in the Contractor's Safety and Health Plan.
2. Contractor shall ensure that each employee is familiar with and complies with these procedures.
3. The Project Officer will, at the Contractor's request, apply lockout/tagout tags and take other actions that, because of experience and knowledge, are known to be necessary to make the particular CITY OF ROCKVILLE equipment safe to work on.
4. No person, regardless of position or authority, shall operate any switch, valve, or equipment that has an official lockout/tagout tag attached to it, nor shall such tag be removed except as provided in this section.
5. No person shall work on any equipment that requires a lockout/tagout tag unless he, his immediate supervisor, project leader, or a subordinate has in his possession the keys to the required lockout/tagout tags.
6. When work is to be performed on electrical circuits, the work shall be performed only by qualified personnel following the required safety procedures.
7. A Contractor's supervisor who is required to enter an area protected by a lockout/tagout tag will be considered a member of the protected group provided he notifies the holder of the tag stub each time he enters and departs from the protected area.
8. Identification markings on building light and power distribution circuit breakers shall not be relied on for establishing safe work conditions.
9. Before clearance will be given on any equipment other than electrical (generally referred to as mechanical apparatus), the apparatus, valves, or systems shall be secured in a passive condition with the appropriate vents, pins, and locks.
10. Pressurized or vacuum systems shall be vented to relieve differential pressure completely.
11. Vent valves shall be lockout/tagout tagged open during the course of the work.
12. Where dangerous gas or fluid systems are involved, or in areas where the environment may be oxygen deficient, system or areas shall be purged, ventilated, or otherwise made safe prior to entry. See paragraph "Gas Protection."
13. Tag Placement
 - a. Lockout/tagout tags shall be completed in accordance with the regulations printed on the back thereof and attached to any device which, if operated, could cause an unsafe condition to exist.
 - b. If more than one group is to work on any circuit or equipment, the employee in charge of each group shall have a separate set of lockout/tagout tags completed and properly attached and locked.
 - c. When it is required that certain CITY OF ROCKVILLE owned and operated equipment be tagged, the CITY OF ROCKVILLE will review the characteristics of the various systems involved that affect the safety of the operations and the work to be done; take the necessary actions, including voltage and pressure checks, grounding, and venting, to make the system and equipment safe to work on; and apply such lockout/tagout tags to those switches, valves, vents, or other mechanical devices needed to preserve the safety provided. This operation is referred to as "Providing Safety Clearance."
14. Tag Removal
 - a. Lockout/tagout tags shall be removed only by those persons who initiated the lockout/tagout tag and who retain possession of the keys. Otherwise, lockout/tagout tags may be removed only with the authorization of the Project Officer.

1.11 PERSONNEL PROTECTIVE EQUIPMENT

- A. Special facilities, devices, equipment and similar items used by the Contractor in execution of the work shall comply with 29 CFR, Part 1910, Subpart I and other applicable regulations.

PART 2 - PRODUCTS

2.1 Safety and Health Programs: The Contractor shall submit copies of the written site specific project safety and health plan and emergency action procedures, as applicable to the work scope, as required as a result of the safety meeting, or as required by OSHA 29 CFR, Part 1926 including but not necessarily limited to the procedures and programs that support the requirements of the following:

- A. Designation of Safety Competent Person
- B. Occupational Noise Exposure.
- C. Fall Protection.
- D. Personnel Protective Equipment.
- E. Control of Hazardous Energy.
- F. Hazardous Materials Waste Management Plan (draft if final plan has not been accepted)
- G. Electrical Safety Related Work Practices.
- H. Lead.
- I. Asbestos.
- J. Respirator Protection.
- K. Confined spaces.
- L. Emergency evacuation and reporting

2.2 Contractor's Safety and Health Plan: In addition to specific safety and health programs applicable to the project, Contractor shall submit to the Project Officer a copy of the firm's general Safety and Health Plan listing emergency procedures and contact persons with home addresses and telephone numbers.

2.3 Permits: If hazardous materials are disposed of off-site, submit copies of shipping manifests and permits from applicable federal, state or local authorities and disposal facilities, and submit certificates that the material has been disposed of in accordance with regulations as required in Division 1 Section "Use, Handling, Storage, Transporting, Accumulation and Disposal of CITY OF ROCKVILLE Controlled Material".

2.4 Accident Reporting: The Contractor must submit to the Contracting Officer a written report within three calendar days of any accident, fire, emergency, theft or incident in which any

personal or property damage took place, regardless of any other notifications performed. Include a copy of each accident report that is submitted by the Contractor or Subcontractors to their insurance carriers, within seven calendar days after the date of the accident.

- A. Gas Test Reports: Submit copies of daily log of gas tests

PART 3 - EXECUTION

3.1 EMERGENCY SUSPENSION OF WORK

- A. When the Contractor is notified by the Contracting Officer, or the Project Officer, of non-compliance with the safety or health provisions of the Contract, the Contractor shall immediately, unless otherwise instructed, correct the unsafe or unhealthy condition.
 - 1. If the Contractor fails to comply promptly, all or part of the work will be stopped by notice from the Contracting Officer.
 - 2. When, in the opinion of and by notice given by the Contracting Officer, satisfactory corrective action has been taken by the Contractor, work shall resume.
 - 3. The Contractor shall not be allowed any extension of time or compensation for damages in connection with a work stoppage for an unsafe or unhealthy condition.

3.2 PROTECTION OF PERSONNEL

- A. The Contractor shall take all necessary precautions to prevent injury to the public, occupants, or damage to property of others. The public and occupants includes all persons not employed by the Contractor or a subcontractor.
- B. Wherever practical, the work area shall be fenced, barricaded or otherwise blocked off from the public or occupants to prevent unauthorized entry into the work area.
 - 1. Provide traffic barricades and traffic control signage where construction activities occur in vehicular areas.
 - 2. Corridors, aisles, stairways, doors and exit ways shall not be obstructed or used in a manner to encroach upon routes of ingress or egress utilized by the public or occupants, or to present an unsafe or unhealthy condition to the public or occupants.
 - 3. Store, position and use equipment, tools, materials, scraps and trash in a manner that does not present a hazard to the public or occupants by accidental shifting, ignition or other hazardous activity.
 - 4. Store and transport refuse and debris in a manner to prevent unsafe and unhealthy conditions for the public and occupants. Cover refuse containers, and remove refuse on a frequent regular basis acceptable to the Contracting Officer. Use tarpaulins or other means to prevent loose transported materials from dropping from trucks.
- C. Alternate Precautions: When the nature of the work prevents isolation of the work area and the public or building occupants may be in or pass through, under or over the work area, alternate precautions such as the posting of signs, the use of signal persons, the erection of barricades or similar protection around particularly hazardous operations shall be used as appropriate.
- D. Public Thoroughfare: When work is to be performed over a public thoroughfare such as a sidewalk, roadway or other site access way, the thoroughfare shall be closed, if possible, or other precautions taken such as the installation of screens or barricades. When the exposure

to heavy falling objects exists, as during the erection of building walls or during demolition, special protection of the type detailed in 29 CFR, Parts 1910 and 1926 shall be provided.

3.3 ENVIRONMENTAL PROTECTION

- A. Dispose of solid, liquid and gaseous contaminants in accordance with local codes, laws, ordinances and regulations.
- B. Comply with applicable federal, state and local noise control laws, ordinances and regulations, including but not limited to 29 CFR, Part 1910.95 and 29 CFR, Part 1926.52.

3.4 HAZARDOUS MATERIALS

- A. Requirements for hazardous Materials are contained in Division 1 Section "Use, Handling, Storage, Transporting, Accumulation and Disposal of CITY OF ROCKVILLE Controlled Materials."

END OF SECTION 015950

SECTION 016000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements governing the Contractor's selection of products for use in the Project, including manufacturers' standard warranties on products and special warranties.
- B. Related Sections: This specification section is related to any and all specification sections with explicit or implicit reference to product requirements and warranties. Specific submittal requirements of these related specification sections are not included in this section. Related sections include but are not limited to the following specification sections:
 - 1. Division 1 Section "Summary"
 - 2. Division 1 Section "Alternates"
 - 3. Division 1 Section "Options"
 - 4. Division 1 Section "Work Restrictions"
 - 5. Division 1 Section "Project Management and Coordination"
 - 6. Division 1 Section "Submittal Procedures"
 - 7. Division 1 Section "Quality Requirements"
 - 8. Division 1 Section "References"
 - 9. Division 1 Section "Construction Quality Control"
 - 10. Division 1 Section "Temporary Facilities and Controls"
 - 11. Division 1 Section "Safety and Health"
 - 12. Division 1 Section "Execution Requirements"
 - 13. Division 1 Section "Cutting and Patching"
 - 14. Division 1 Section "Selective Demolition"
 - 15. Division 1 Section "Closeout Procedures"
 - 16. Division 1 Section "Project Record Documents"
 - 17. Division 1 Section "Operation and Maintenance Documentation"

1.3 DEFINITIONS

- A. The following definitions are not intended to change the meaning of other terms used in the Contract Documents, such as "specialties," "systems," "structure," "finishes," "accessories," and similar terms that are self-explanatory and have well-recognized meanings in the construction industry.
- B. "Products" are items purchased for incorporation in the work, whether purchased for the Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and other terms of similar intent.

1. New Products: Items that have not previously been incorporated into another project or facility, except that products consisting of recycled-content materials are allowed, unless explicitly stated otherwise. Products salvaged or recycled from other projects are not considered new products.

1.4 QUALITY REQUIREMENTS

- A. Source Limitations: To the fullest extent possible, provide products of the same kind from a single source. Equipment of the same function shall be manufactured by the same entity, unless otherwise indicated.
- B. Compatibility of Options: When the contractor is given the option of selecting between 2 or more products for use on the project, the product selected shall be compatible with products previously selected, even if previously selected products were also options. Total compatibility among options is not assured by limitations within the Contract Documents, but must be provided by the contractor. Compatibility is a basic general requirement of product/material selections.
- C. Manufacturers: Specific manufacturers and models of equipment and materials cited throughout the contract documents establish the desired performance and minimum quality of equipment and materials. The contractor may propose substitute manufacturers of equipment and materials unless specifically indicated otherwise. The contractor shall bear any cost related to the proposed substitution in all respects including but not limited to cost for establishing equality of the specified product and any incidental construction costs directly related to the substitution. Rejection by the Project Officer does not allow for additional compensation.
- D. Labels and nameplates: Except for required labels and operating data, do not attach or imprint manufacturer's or producer's nameplates or trademarks on surfaces of products that will be exposed to view in occupied spaces or on the exterior.
 1. Labels: Locate required product labels and stamps on concealed surfaces or, where required for observation after installation, on accessible surfaces that are not conspicuous.
 2. Equipment Nameplates: Provide a permanent nameplate on each item of service-connected or power-operated equipment. Locate nameplate on an easily accessible surface that is inconspicuous in occupied spaces. The nameplate shall contain the following information:
 - a. Name of product and manufacturer.
 - b. Model and serial numbers.
 - c. Operating data such as capacity, speed and ratings and similar essential operating data.
 3. Protection: Labels and nameplates shall be protected from defacement and other damage during the remainder of the work.

1.5 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Deliver, store and handle products according to the manufacturer's recommendations, using means and methods that will prevent damage, deterioration and loss, including theft.
 1. Schedule product delivery to minimize long-term storage at the site and to prevent overcrowding of construction spaces.

2. Deliveries shall be addressed to the contractor and be scheduled to arrive at the worksite during normal working hours, unless otherwise authorized in writing by the Contracting Officer. The contractor shall take receipt of all deliveries. City of Rockville will not accept delivery of materials.
 3. Coordinate delivery with installation time to provide minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft and other losses.
 4. Deliver products to the site in an undamaged condition, in the manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting and installing.
 5. Inspect products upon delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
 6. Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.
 7. Store heavy materials away from the project structure in a manner that will not endanger the supporting construction.
 8. Store products subject to damage by the elements above ground, under cover in a weather-tight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.
 9. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
 10. Protect stored products from damage.
- B. If, in the opinion of the Contracting Officer, delivered or stored items are considered damaged or defective, they shall be replaced at no additional cost to the City of Rockville.
- C. Deliveries which require cranes shall be scheduled with the Project Officer a minimum of 15 working days prior to expected delivery.

PART 2 - PRODUCTS

2.1 PRODUCT COMPLIANCE AND REQUIREMENTS

- A. General: The compliance requirements, for individual products as indicated in the Contract Documents, are multiple in nature and may include generic, descriptive, performance, prescriptive, compliance with standards, conformance with graphic details and other similar forms and methods of indicating requirements, all of which must be complied with.
- B. Provide products complete with accessories, trim, finish, safety guards, devices and other items needed for a complete installation and the intended use and effect.
- C. Standard Products: Products shall be essentially the standard catalogued products of manufacturers regularly engaged in production of such products and shall be the manufacturer's latest standard design that complies with the specification requirements. Equipment shall essentially duplicate items that have been in satisfactory commercial and industrial use at least two years, or more if otherwise specified, prior to award of the contract or in lieu thereof shall have been used and operated in a test installation which, in the opinion of the Project Officer, duplicate its field performance for the same period of time. The Project Officer reserves the right to require the Contractor to submit evidence to this effect for his approval. When two or more units of the same class of equipment are required, these units shall be the product of a single manufacturer; however, the component parts of the system need not be the products of the same manufacturer.

- D. Continued Availability: Products which, by nature of their application, are likely to be needed at a later date for maintenance and repair or replacement work, shall be current models for which replacement parts are available. Where specified and available, provide standard products of types that have been produced and used successfully in similar situations on other projects.
- E. Product Selection Procedures: Contractor's options for selecting products are limited by the Contract Document requirements including the Construction Contract Clauses, and governing regulations, and are not controlled by industry traditions or procedures experienced by the Contractor on previous construction projects. Required procedures include, but are not necessarily limited to, the following for various indicated methods of specifying:
1. Where the Specifications lists manufacturers' names or product designations, the Contractor may provide any product that complies with the requirements, subject to the following conditions:
 - a. Manufacturers: Where a Specification paragraph or subparagraph titled "Manufacturers" lists manufacturers' names, provide a compliant product by one of the manufacturers named, or request a Substitution of another compliant product by another manufacturer.
 - b. Available Manufacturers: Where a Specification paragraph or subparagraph titled "Available Manufacturers" lists manufacturers' names, provide a compliant product by one of the manufacturers named or by another manufacturer.
 - c. Products: Where a Specification paragraph or subparagraph titled "Products" lists product designations, provide one of the products designated, or request a Substitution of another compliant product.
 - d. Available Products: Where a Specification paragraph or subparagraph titled "Available Products" lists product designations, provide one of the products designated or another compliant product.
 - e. Basis of Design Product: Where a Specification paragraph or subparagraph titled "Basis of Design Product" includes a product designation, provide the product designated, or request a substitution of another compliant product by one of the other manufacturers named, if any, or by another manufacturer.
 2. Descriptive Requirements: Where Specifications describe a product or assembly, listing exact characteristics required, provide a product or assembly that provides the characteristics and otherwise complies with Contract requirements.
 3. Performance Requirements: Where Specifications require compliance with performance requirements, provide products that comply with these requirements and are recommended by the manufacturer for the application indicated. Manufacturer's recommendations may be contained in published product literature or by the manufacturer's certification of performance.
 4. Prescriptive Requirements: Where Specifications require products that are produced using specified ingredients and components, including specific requirements for mixing, fabricating, curing, finishing, testing and similar operations in the manufacturing process, provide products produced in accordance with the prescriptive requirements that otherwise comply with Contract requirements.
 5. Codes, Standards and Regulations: Where Specifications require compliance with an imposed code, standard or regulation, select a product that complies with the codes, standards or regulations specified.
 6. Visual Matching: Where Specifications require matching an established sample, or matching existing conditions, the Project Officer decision will be final on whether a proposed product matches satisfactorily.
 7. Visual Selection: Where specified product requirements include the phrase "as selected from manufacturer's standard colors, patterns, textures" or a similar phrase, select a product and manufacturer that complies with other specified requirements. The Project Officer will select the color, pattern and texture from the manufacturer's product line.

City of Rockville
Twinbrook Recreation Center Restroom Renovations

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 016000

SECTION 017000 - EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This section includes certain general procedural requirements governing the Contractor's execution of the work, including, but not limited to the following:
 - 1. Laying out of the work.
 - 2. General installation of products.
 - 3. Correction of Defective Work
 - 4. Progress cleaning.
 - 5. Starting and adjusting.
 - 6. Protection of installed construction.
- B. Substitutions: Changes in methods of construction required by the Contract Documents proposed by the Contractor after award of the Contract shall comply with the procedures and conditions specified for Substitutions in the Construction Contract Clauses.
- C. Related Sections: This specification section is related to any and all specification sections with explicit or implicit reference to execution requirements. Specific submittal requirements of these related specification sections are not included in this section. Related sections include but are not limited to the following specification sections:
 - 1. Division 1 Section "Summary"
 - 2. Division 1 Section "Work Restrictions"
 - 3. Division 1 Section "Project Management and Coordination"
 - 4. Division 1 Section "Submittal Procedures"
 - 5. Division 1 Section "Quality Requirements"
 - 6. Division 1 Section "References"
 - 7. Division 1 Section "Construction Quality Control"
 - 8. Division 1 Section "Temporary Facilities and Controls"
 - 9. Division 1 Section "Safety and Health"
 - 10. Division 1 Section "Product Requirements"
 - 11. Division 1 Section "Cutting and Patching"
 - 12. Division 1 Section "Selective Demolition"
 - 13. Division 1 Section "Closeout Procedures"
 - 14. Division 1 Section "Project Record Documents"
 - 15. Division 1 Section "Demonstration and Training"
- D. Additional Requirements: Refer to the individual technical specification sections for additional execution requirements.

1.3 SUBMITTALS

- A. Surveyor Qualification Statement: Submit for review a statement attesting to previous experience from the land surveyor or professional engineer engaged to lay out the work. Include list of completed projects, with project names and addresses, and names and addresses of architects and owners.
- B. Certificates: Submit a certificate signed by the land surveyor or professional engineer certifying that the location and elevation of improvements comply with requirements indicated.
- C. Contractor Requests for Information (RFI): The Contractor shall submit Requests for Information (RFI) to the Project Officer. Upon receipt of an RFI, the Project Officer will review and coordinate a response. The response will be provided within 14 calendar days.
- D. Manufacturer's Field Services Submissions: Where product manufacturers are required by the individual sections of the Specifications to provide qualified personnel to observe conditions of surfaces or other project conditions, installation or workmanship, start up or adjustment of equipment, tests or other activities, and to initiate instructions when necessary, the following shall be submitted to the Project Officer:
 - 1. Qualifications: For approval, submit qualifications of observer at least 30 calendar days in advance of scheduled activities.
 - 2. Report: For information, submit report of activities and findings within 15 calendar days after the successful execution of the specified work. Include logs and other documented data where applicable.

1.4 QUALITY REQUIREMENTS

- A. Workmanship Standards: Initiate and maintain procedures to ensure personnel performing the work are skilled and knowledgeable in the methods and craftsmanship needed to produce the required levels of workmanship in the completed work. Remove and replace work that does not comply with workmanship specified and standards recognized in the construction industry for the applications indicated. Remove and replace work damaged or deteriorated by faulty workmanship or replacement of other work.
- B. Manufacturer's Instructions: Where installations include manufactured products, comply with manufacturer's applicable installation instructions and recommendations to the extent that those instructions and recommendations are more explicit or stringent than requirements contained in the Contract Documents.
- C. Specialists: Where the individual sections of the specifications require specialists to perform the work, comply with the requirements specified in the Construction Contract Clauses. The assignment of a specialist shall not relieve the contractor from complying with applicable regulations, union jurisdictional settlements or similar conventions, and the final responsibility for fulfillment of the entire requirements remains with the Contractor.
- D. Minimum Quality and Quantity: The quality level or quantity shown or specified shall be the minimum required for the work. Except as otherwise indicated, the actual work shall comply exactly with that minimum or may be superior to that minimum within limits acceptable to the Contracting Officer. Specified numeric values are either minimums or maximums as indicated or as appropriate for the context of the requirements.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 LAYING OUT THE WORK

- A. Before proceeding to lay out the work, verify layout information shown on the drawings, in relation to existing benchmarks. If discrepancies are discovered notify the Project Officer promptly.
- B. Establish and maintain a minimum of 2 permanent benchmarks on the site, referenced to data established by survey control points.
 - 1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
 - 2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the work.
 - 3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.
- C. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Make the log available for reference by the Project Officer.
- D. Existing Utilities and Equipment: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities and other construction.
 - 1. Prior to construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping.
 - 2. Furnish location data for work related to the project which must be performed by public utilities serving the Project site.

3.2 EXAMINATION

- A. Examine applicable substrates and conditions under which the work will be performed before starting construction operations.
- B. If unsafe or otherwise unsatisfactory conditions are encountered take corrective action before proceeding.
- C. Require installer of each major unit of work to inspect substrate to receive work, and conditions under which work will be performed, and report in writing to the Contractor any unsuitable conditions. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the installer.
- D. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.

3.3 PREPARATION

- A. Existing Utilities: Furnish information necessary to adjust, move, or relocate existing structures, utility poles, lines, services, or other appurtenances located in or affected by construction. Coordinate with the Project Officer.
- B. Take field measurements as required to fit the work properly. Recheck measurements before installing each product.
- C. Verify space requirements of items shown diagrammatically on drawings.
- D. Drawing Verification: Check all drawings furnished immediately upon their receipt and promptly notify the Project Officer of any discrepancies. Figures marked on drawings shall in general be followed in preference to scale measurements. Large scale drawings shall in general govern small scale drawings. The Contractor shall compare all drawings and verify the figures before laying out the work or ordering custom furniture, equipment or material and will be responsible for any errors which might have been avoided thereby. Dimensions on drawings shall be checked for accuracy by the Contractor.

3.4 INSTALLATION

- A. Locate the work and components of the work accurately.
 - 1. Make vertical work plumb and horizontal work level.
 - 2. Where space is limited, install components to maximize space available for maintenance and to maximize ease of removal for replacement.
 - 3. Conceal pipes, ducts, and wiring in finished areas.
- B. Install products at the time and under conditions that will produce satisfactory results.
 - 1. Maintain temperature, humidity and other weather controls for best performance.
 - 2. Isolate units of noncompatible work to prevent deterioration.
- C. Conduct construction operations so that no part of the work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- D. Tools and Equipment: Do not use tools or equipment that produce harmful levels of noise.
- E. Anchors and Fasteners: Provide anchors and fasteners as required to withstand stresses, vibration and physical distortion. Anchor each component securely in place, accurately located and aligned with other work.
 - 1. Allow for building movement, including thermal expansion and contraction.
- F. Mounting Heights: In no case shall exposed items be mounted at a height which violates the provisions of the Americans with Disabilities Act Accessibility Guidelines (ADAAG)/Uniform Federal Accessibility Standards (UFAS) for the application indicated. Refer questionable component mounting heights to the Project Officer for final decision.
- G. Joints: Make like joints of uniform width within contiguous surfaces. Where joint locations in exposed work are not indicated, arrange joints for a uniform and balanced visual effect.
- H. Adjust operating components for proper operation without binding.

3.5 CORRECTION OF DEFECTIVE WORK

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes.
- B. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and proper adjustment of operating equipment.
- C. Restore permanent facilities used during construction to their specified condition.
- D. Remove and replace damaged surfaces that are exposed to view if the surfaces cannot be repaired without visible evidence of repair.
- E. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired to operate properly.
- F. Remove and replace chipped, scratched or broken surfaces.

3.6 PROGRESS CLEANING

- A. Maintain the project work areas free of waste material and debris.
- B. Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the work.
 - 1. Remove liquid spills promptly.
 - 2. Where dust would impair proper execution of the work, broom- or vacuum-clean the entire work area.
- C. Keep installed work clean. Clean installed surfaces in accordance with the recommendations of the manufacturer or fabricator of the product installed, using only the cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and will not damage exposed surfaces.
- D. Remove debris from concealed spaces prior to enclosing the space.
- E. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at the time of project completion.
- F. Collection and Disposal of Waste: Collect waste from construction areas and elsewhere daily. Enforce requirements strictly and dispose of material lawfully.
 - 1. Comply with NFPA 241 for removal of combustible waste material and debris.
 - 2. Do not hold waste materials more than 7 days during periods when the ambient temperature remains continuously less than 80 deg F or for more than 3 days when the temperature exceeds or is expected to rise above 80 deg F.
 - 3. Handle and properly containerize hazardous, dangerous or unsanitary waste materials separately from other waste.

3.7 STARTING AND ADJUSTING

- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

- B. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.
- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- D. Manufacturer's Field Service: If a factory-authorized service representative is required to inspect field-assembled components and equipment installation, comply with qualification requirements in Division 1 Section "Quality Requirements."

3.8 PROTECTION OF INSTALLED CONSTRUCTION

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

END OF SECTION 017000

SECTION 017310 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This section includes procedural requirements for cutting and patching.
- B. Definition: Cutting and patching includes cutting into existing construction to provide for the installation or performance of other work and subsequent fitting and repair required to restore surfaces to their original condition.
- C. Refer to other sections for other requirements and limitations applicable to cutting and patching individual parts of the work.
- D. Coordinate cutting and patching with demolition requirements specified in Division 1 Section "Selective Demolition."
- E. Related Sections: This specification section is related to any and all specification sections with explicit or implicit reference to cutting and patching. Specific submittal requirements of these related specification sections are not included in this section. Related sections include but are not limited to the following specification sections:
 - 1. Division 1 Section "Summary"
 - 2. Division 1 Section "Work Restrictions"
 - 3. Division 1 Section "Project Management and Coordination"
 - 4. Division 1 Section "Submittal Procedures"
 - 5. Division 1 Section "Quality Requirements"
 - 6. Division 1 Section "References"
 - 7. Division 1 Section "Construction Quality Control"
 - 8. Division 1 Section "Temporary Facilities and Controls"
 - 9. Division 1 Section "Safety and Health"
 - 10. Division 1 Section "Product Requirements"
 - 11. Division 1 Section "Execution Requirements"
 - 12. Division 1 Section "Selective Demolition"
 - 13. Division 1 Section "Closeout Procedures"
 - 14. Division 1 Section "Project Record Documents"

1.3 SUBMITTALS

- A. Cutting and Patching Plan: Submit a written plan to the Project Officer through the Quality Control manager describing procedures at least 21 calendar days in advance of the time cutting and patching will initially be performed.
 - 1. Include the following information, as applicable:

- a. Description of the extent of cutting and patching required. Show how it will be performed and indicate why it cannot be avoided.
 - b. Description of the anticipated results in terms of changes to existing construction. Include changes to structural elements and operating components as well as changes in appearance and other significant visual elements.
 - c. List of products to be used and entities that will perform work.
 - d. Dates and hours of operation when cutting and patching will be performed.
 - e. List of utilities that cutting and patching procedures will disturb or affect. List utilities that will be relocated and those that will be temporarily out-of-service. Indicate how long service will be disrupted.
 - f. Compatibility and cohesion characteristics of patching compounds with adjacent materials.
 - g. Details and engineering calculations showing integration of reinforcement with the original structure, where cutting and patching involves adding reinforcement to structural elements.
2. Approval by the Project Officer to proceed with cutting and patching does not waive the right to later require complete removal and replacement of unsatisfactory work.
3. Samples: Provide cutting and patching samples for the following items within 14 calendar days after notice to proceed in order that special reviews and coordination can be arranged with approval authorities.

1.4 QUALITY REQUIREMENTS

- A. Requirements for Structural Work: Do not cut and patch structural elements in a manner that would change their load-carrying capacity or load-deflection ratio.
 1. The cutting and patching plan shall include but not be necessarily limited to work required at the following structural elements:
 - a. Foundation construction.
 - b. Bearing and retaining walls.
 - c. Structural concrete.
 - d. Structural steel.
 - e. Lintels.
 - f. Timber and primary wood framing.
 - g. Structural decking.
 - h. Stair systems.
 - i. Miscellaneous structural metals.
 - j. Exterior curtain-wall construction.
 - k. Equipment supports.
 - l. Piping, ductwork, vessels, and equipment.
 - m. Structural systems of other construction.
- B. Operational Limitations: Do not cut and patch operating elements, safety related systems, or related components in a manner that would result in reducing their capacity to perform as intended. Do not cut and patch operating elements, safety related systems or related components in a manner that would result in increased maintenance or decreased operational life or safety. Operating elements or safety related systems include but are not limited to the following:
 1. Primary operational systems and equipment.
 2. Air or smoke barriers.
 3. Water, moisture, or vapor barriers.
 4. Membranes and flashings.

5. Fire protection systems.
 6. Noise and vibration control elements and systems.
 7. Control systems.
 8. Communication systems.
 9. Conveying systems.
 10. Electrical wiring systems.
 11. Operating systems of other construction.
- C. Visual Requirements: Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in the Project Officer's opinion, reduce the building's aesthetic qualities. Do not cut and patch construction in a manner that would result in visual evidence of cutting and patching. Remove and replace construction that was previously cut and patched in a visually unsatisfactorily manner. When requested by the Contracting Officer, engage a Specialist who is specifically experienced in the work. Visual elements include but are not limited to the following:
1. Processed concrete finishes.
 2. Stonework and stone masonry.
 3. Ornamental metal.
 4. Matched-veneer woodwork.
 5. Preformed metal panels.
 6. Firestopping.
 7. Window wall system.
 8. Stucco and ornamental plaster.
 9. Acoustical ceilings.
 10. Terrazzo.
 11. Finished wood flooring.
 12. Fluid-applied flooring.
 13. Carpeting.
 14. Aggregate wall coating.
 15. Wall covering.
 16. Mechanical system enclosures, cabinets, or covers.

1.5 EXISTING WARRANTIES

- A. Remove, replace, patch, and repair material and surfaces cut or damaged during cutting and patching operations by methods and with materials in such a manner as not to void any existing warranties.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Comply with requirements specified in other Sections of these Specifications.
- B. Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of existing materials.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Before cutting, examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed. If unsafe or unsatisfactory conditions are encountered, take corrective action before proceeding.
- B. Before proceeding with cutting and patching involving two or more trades, meet at the project site with the Project Officer and the entities providing or affected by the cutting and patching. Site meeting should be incorporated into the Three Phases of Quality Control process managed by the Contractor's Quality Control Manager. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.
- C. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

3.2 PREPARATION

- A. Provide temporary support of work to be cut.
- B. Protect existing conditions during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the Project that might be exposed during cutting and patching operations.
- C. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Where existing services are required to be removed, relocated, abandoned, bypass such services before cutting to avoid interruption of services to occupied areas.

3.3 PERFORMANCE

- A. Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.
- B. Cutting: Cut existing construction using methods least likely to damage elements retained and adjoining construction. Where possible, review proposed procedures with the original installer and comply with the original installer's recommendations.
 - 1. In general, use hand or small power tools designed for sawing or grinding, not for hammering and chopping.
 - 2. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 3. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.
 - 4. Cut through concrete and masonry using a cutting machine, such as a Carborundum saw or a diamond-core drill.
 - 5. Comply with requirements of applicable Division 2 sections where cutting and patching requires excavating and backfilling.
 - 6. After utility services are bypassed, cut-off pipe or conduit in walls or partitions to be removed. Cap, valve or plug and seal the remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after by-passing and cutting.

- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications.
1. Where feasible, inspect and test patched areas to demonstrate integrity of the installation.
 2. Restore exposed finishes of patched areas and extend finish restoration into adjoining construction in a manner that will eliminate evidence of patching and refinishing.
 3. Where removed walls or partitions extends one finished area into another finished area, patch and repair floor and wall surfaces to provide an even surface of uniform color, finish, texture, and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 4. Where patching occurs in a smooth painted surface, extend final paint coat over entire unbroken surface that contains the patch after the area has received primer and other undercoats.
 5. Patch, repair or rehang existing ceilings as necessary to provide an even-plane surface of uniform appearance.
 6. Maintain integrity of fire barriers, vapor barriers and insulation.
 7. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.
- D. Perform cutting and patching work listed in Division 1 Section "Work Restrictions" during City of Rockville Unoccupied Hours.

3.4 CLEANING

- A. Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar items.
- B. Thoroughly clean piping, conduit, and similar features before applying paint, restored pipe coverings, or other finishing materials.

END OF SECTION 017310

SECTION 017320 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This section includes the following:
 - 1. Demolition and removal of selected portions of a building.
 - 2. Repair procedures for selective demolition operations.
- B. Related Sections: This specification section is related to any and all specification sections with explicit or implicit reference to selective demolition. Specific submittal requirements of these related specification sections are not included in this section. Related sections include but are not limited to the following specification sections:
 - 1. Division 1 Section "Summary"
 - 2. Division 1 Section "Work Restrictions"
 - 3. Division 1 Section "Project Management and Coordination"
 - 4. Division 1 Section "Submittal Procedures"
 - 5. Division 1 Section "Quality Requirements"
 - 6. Division 1 Section "References"
 - 7. Division 1 Section "Construction Quality Control"
 - 8. Division 1 Section "Temporary Facilities and Controls"
 - 9. Division 1 Section "Safety and Health"
 - 10. Division 1 Section "Product Requirements"
 - 11. Division 1 Section "Execution Requirements"
 - 12. Division 1 Section "Cutting and Patching"
 - 13. Division 1 Section "Closeout Procedures"
 - 14. Division 1 Section "Project Record Documents"
 - 15. Division 15 sections for demolishing, cutting, patching, or relocating mechanical items.
 - 16. Division 16 sections for demolishing, cutting, patching, or relocating electrical items.

1.3 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them.
- B. Remove and Salvage: Detach items from existing construction and deliver them to the City of Rockville.
- C. Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.
- D. Existing to Remain: Existing items of construction that are not to be removed.

1.4 MATERIALS OWNERSHIP

- A. Except for items or materials indicated to be salvaged, reinstalled or otherwise indicated to remain the City of Rockville property, demolished materials shall be removed from the site by the Contractor, with further disposition at Contractor's option.

1.5 SUBMITTALS

- A. Qualification Data: Provide qualifications of persons or firms performing demolition which demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other amplifying information. Qualification data must conform to that required in Division 1 Section "Quality Requirements" for Specialists or Professional Engineers as appropriate to the work.
- B. Proposed noise-control or dust-control measures: Submit statement or drawing to the Contracting Officer for approval at least 14 calendar days prior to the start of demolition that indicates the measures proposed for use, proposed locations, and proposed time frame for their operation. Identify options if proposed measures are later determined to be inadequate.
- C. Submit a proposed Demolition Plan to the Contracting Officer indicating the following:
 - 1. Detailed sequence of selective demolition work, with starting and ending dates for each activity.
 - 2. Interruption of utility services.
 - 3. Coordination for shutoff, capping, and continuation of utility services.
 - 4. Use of elevator and stairs.
 - 5. Locations of temporary partitions and means of egress.
 - 6. Procedures and safety precautions to be used during demolition.
 - 7. Removal, transportation, and reclamation or disposal of removed materials.
- D. Inventory: Items to be removed and salvaged.
- E. Photographs: Before work begins, submit sufficiently detailed photographs showing predemolition existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by selective demolition operations. Requirements for photographs are located in Division 1 Section "Photographic Documentation."

1.6 QUALITY REQUIREMENTS

- A. Demolition Firm Qualifications: Firm shall be a specialist in demolition work of similar materials and extent to that indicated for this Project.
- B. Professional Engineer Qualifications: Comply with Division 1 Section "Quality Requirements."
- C. Regulatory Requirements: Comply with governing EPA notification regulations before starting selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction. Comply with all regulatory requirements of those agencies and organizations having jurisdiction.
- D. Standards: Comply with ANSI A10.6 and NFPA 241.

- E. Pre-Demolition Conference: Conduct conference at Project site to comply with requirements in Division 1 section "Project Management and Coordination." Review methods and procedures related to selective demolition including, but not limited to, the following:
 - 1. Inspect and discuss condition of construction to be selectively demolished.
 - 2. Review structural load limitations of existing structure.
 - 3. Review and finalize demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
 - 4. Review requirements of work performed by other trades that rely on substrates exposed by demolition operations.
- F. Demolition Plan: The Contractor shall prepare a detailed plan of the demolition work procedures and safety precautions to be used in the identification, demolition, trees and shrub protection, silt and erosion control handling, removal, transportation, and reclamation or disposal of removed materials. The plan shall be submitted to the Contracting Officer for review within 14 calendar days after receipt of the Notice to Proceed and at least 14 calendar days before the planned commencement of demolition activities.
 - 1. Review and acceptance by the City of Rockville of the Contractor's demolition plan will not relieve the Contractor of any responsibility regarding damage from any demolition activity.

1.7 PROJECT CONDITIONS

- A. The City of Rockville will occupy portions of the building immediately adjacent to the selective demolition area. Refer to Division 1 Section "Work Restrictions" for additional requirements.
 - 1. Conduct selective demolition so the City of Rockville operations will not be disrupted.
 - 2. Provide the Project Officer with not less than 72 hours' notice prior to activities that will affect the City of Rockville operations. Include in the notification the expected demolition activities and expected level and duration of disturbance to the City of Rockville operations.
- B. Safe access to existing walkways, corridors and other adjacent occupied or used facilities must be maintained. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from the Contracting Officer.
- C. The Contractor shall remove and salvage the existing items so indicated on the Drawings.
- D. The Contractor shall remove and reinstall the existing items so indicated on the Drawings.
- E. Hazardous Materials: Except where noted, hazardous materials are not expected to be encountered in the work. If any material suspected of containing hazardous materials is encountered, do not disturb the material, immediately notify the Contracting Officer and the Project Officer. If suspected hazardous material is spilling out or leaking, notify the fire department immediately.
- F. On-site storage or sale of removed items or materials will not be permitted.
- G. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
- H. Fire Protection: Maintain fire-protection services during selective demolition operations.

- I. Use of explosives is prohibited. Explosive actuated tools (ex: nailguns, etc) shall not be used or brought to the project site without prior written approval from the Project Officer. Such approval shall not relieve the Contractor of responsibility for injury to persons or for damage to property due to the use of such explosives.
- J. Contractor dumpsters will be permitted only if a location for the dumpster is shown on the contract drawings.

1.8 WARRANTIES

- A. Existing Special Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials that do not void existing warranties. Verify existence of warranties with the Project Officer.

PART 2 - PRODUCTS

2.1 REPAIR MATERIALS

- A. Where available and appropriate for use, provide repair materials that are identical to existing materials.
- B. Where identical materials are unavailable or cannot be used for exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
- C. Use materials whose installed performance equals or surpasses that of existing materials.
- D. Use fireproof materials for dust barriers and other temporary enclosures. See Division 1 Section "Temporary Facilities and Controls" for additional barrier requirements.
- E. Comply with material and installation requirements specified in individual Specification Sections.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities to be removed have been disconnected and capped.
- B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- C. Inventory and record the condition of items to be removed and reinstalled, and items to be removed and salvaged.
- D. When encountering unanticipated mechanical, electrical or structural elements that conflict with the intended function or design, investigate and measure the nature and extent of the conflict. Promptly submit a written report to the Project Officer.
- E. Perform surveys as the selective demolition progresses to detect hazards resulting from the activities.

3.2 UTILITY SERVICES

- A. Existing Utilities: Maintain services indicated to remain and protect them against damage during selective demolition operations.
- B. Do not interrupt existing utilities serving occupied or operating facilities, except when authorized in writing by the Project Officer. See Division 1 Section "Project Management and Coordination" for additional requirements associated with utility shutdowns.
 - 1. Provide temporary services during interruptions to existing utilities, as acceptable to governing authorities. See Division 1 Section "Temporary Facilities and Controls" for additional temporary utility information.
 - 2. Provide not less than 15 calendar days notice to the Project Officer if shutdown of service is required during changeover.
- C. Utility Requirements: Locate, identify, disconnect, and seal or cap off indicated utility services serving areas to be selectively demolished.
 - 1. The City of Rockville will arrange to shut off indicated utilities when requested by Contractor.
 - 2. Where utility services are required to be removed, relocated or abandoned, provide bypass connections to maintain continuity of service to other parts of the building before proceeding with selective demolition.
 - 3. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve or plug and seal the remaining portion of pipe or conduit after bypassing.
 - 4. Do not start selective demolition work until utility disconnection and sealing have been completed and verified.
- D. Smoke Detectors: Request a utility outage for all smoke detectors where demolition work is planned. Do not start work until smoke detectors are shut off.

3.3 PREPARATION

- A. Dangerous Materials: If chemicals, gases, explosives, acids, flammable or other dangerous materials of unknown content or origin are found which are not shown on the drawings, contact the Project Officer immediately before proceeding with demolition.
- B. Temporary Site Control: Remove debris and conduct demolition operations in a manner to ensure minimum interference with roads, streets, walks, walkways, corridors, and other adjacent occupied or used facilities.
 - 1. Do not close or obstruct streets, walks, walkways, corridors, or other adjacent occupied or used facilities without permission from the Project Officer.
 - 2. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.
- C. Temporary Facilities: Conduct demolition operations in a manner to prevent injury to people and damage to adjacent building and facilities to remain. Provide for safe passage of people around selective demolition area. Provide temporary facilities in accordance with Division 1 Sections "Temporary Facilities and Controls" and "Temporary Traffic Controls" as applicable.
 - 1. Erect temporary protection, such as walks, fences, railings, canopies and covered passageways, where required by authorities having jurisdiction.

2. Provide temporary weather protection, during interval between demolition and removal of existing construction, on exterior surfaces and new construction to prevent water leakage or damage to structure or interior areas.
 3. Protect walls, ceilings, floors and other existing finish work that are to remain and are exposed during selective demolition operations.
 4. Cover and protect furniture, furnishings and equipment that have not been removed.
- D. Temporary Enclosures: Erect and maintain smoke tight and dustproof partitions and temporary enclosures to limit dust and dirt migration into remaining spaces and to separate areas from fumes and noise. Use fire retardant materials for all temporary enclosures.

3.4 POLLUTION CONTROLS

- A. Dust Control: Use temporary enclosures and other suitable methods complying with governing environmental protection regulations to limit the spread of dust and dirt.
1. Do not use water when it may damage existing construction or create hazardous or objectionable conditions, such as ice, flooding, pollution, or slippery conditions.
 2. Wet mop floors to eliminate trackable dirt, and wipe down walls and doors of demolition enclosure.
- B. Disposal: Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
1. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in accordance with applicable safety regulations.
- C. Cleaning: Clean adjacent structures and site improvements of dust, dirt and debris caused by selective demolition operations. Return adjacent areas to condition existing before start of selective demolition.

3.5 SELECTIVE DEMOLITION

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete selective demolition within limitations of governing regulations and as follows:
1. Proceed with selective demolition systematically. Conduct work in an order that avoids transporting removed items and debris through areas with completed selective demolition work, and that allows for removal of items before supports for those items are removed in another area.
 2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage adjoining construction to remain. Where possible, use hand or small power tools designed for sawing or grinding, not for hammering and chopping, to minimize disturbance of adjacent surfaces. Contractor is to use the correct tool for the work and operate it in accordance with the manufacturers instructions. Temporarily cover openings to remain.
 3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression

- devices during flame-cutting operations, and maintain adequate ventilation when using cutting torches. See Division 1 Section "Fire Prevention Precautions for Hot Work."
 5. Maintain adequate ventilation when using cutting torches.
 6. Remove decayed, vermin-infested and other dangerous or unsuitable materials, and promptly dispose of these materials off-site.
 7. Lower removed structural framing members to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
 8. Locate selective demolition equipment throughout the structure and remove debris and materials so as not to impose excessive loads on supporting walls, floors or framing.
 9. Dispose of demolished items and materials promptly.
 10. Return elements of construction and surfaces to remain to condition existing before start of selective demolition operations.
- B. Existing Facilities: Comply with all regulations for using and protecting elevators, stairs, walkways, loading docks, building entries and other building facilities during selective demolition operations. Coordinate with the Project Officer for building-specific requirements.
- C. Removed and Reinstalled Items. Comply with the following:
1. Clean and repair items to functional condition adequate for intended reuse. Paint damaged or deteriorated painted surfaces of equipment to match new equipment.
 2. Pack or crate items after cleaning and repairing. Identify contents of containers.
 3. Protect items from damage during transport and storage.
 4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
- D. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by the Contracting Officer, items may be removed to a suitable, protected storage location during selective demolition and then cleaned and reinstalled in their original locations after selective demolition operations are complete.
- E. Concrete: Demolish in small sections. Cut concrete to a depth of at least **3/4 inch ((19 mm))** at junctures with construction to remain, using power-driven saw. Dislodge concrete from reinforcement at perimeter of areas being demolished, cut reinforcement, and then remove remainder of concrete indicated for selective demolition. Neatly trim openings to dimensions indicated.
- F. Concrete: Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals, using power-driven saw, then remove concrete between saw cuts.
- G. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, then remove masonry between saw cuts.
- H. Resilient Floor Coverings: Remove floor coverings and adhesive, and prepare substrate for new floor covering, according to recommendations of the Resilient Floor Covering Institute (RFCI).
- I. Air-Conditioning Equipment: Remove equipment without releasing refrigerants.

3.6 PATCHING AND REPAIRS

- A. General: Promptly repair damage to adjacent construction caused by selective demolition operations.
- B. Patching: Comply with Division 1 Section "Cutting and Patching."
- C. Repairs: Where repairs to existing surfaces are required, patch to produce surfaces suitable for new materials.
 - 1. Completely fill holes and depressions in existing masonry walls to remain with an approved masonry patching material, applied according to the manufacturer's written recommendations.
- D. Finishes: Restore exposed finishes of patched areas and extend finish restoration into adjoining construction to remain in a manner that eliminates evidence of patching and refinishing.
- E. Floor and Wall Surfaces: Patch and repair floor and wall surfaces in each space where demolished walls or partitions result in extending one finished area into another. Provide a flush and even surface of uniform color, texture and appearance.
 - 1. Closely match texture and finish of existing adjacent surface.
 - 2. Patch with durable seams that are as invisible as possible. Comply with specified tolerances.
 - 3. Where patching occurs in a painted surface, apply primer and other specified undercoats. Apply specified intermediate paint coats over patch and apply final paint coat over entire unbroken surface containing patch. Provide additional coats until patch blends with adjacent surfaces.
 - 4. Remove existing floor and wall coverings and replace with new materials, if necessary to achieve uniform color and appearance.
 - 5. Where feasible, inspect and test patched areas to demonstrate integrity of the installation.
- F. Ceilings: Patch, repair or rehang existing ceilings as necessary to provide an even-plane surface of uniform appearance.

3.7 DISPOSAL OF DEMOLISHED MATERIALS

- A. Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.
- B. Burning of any materials removed during demolition is not permitted on the City of Rockville property.
- C. Disposal: Transport demolished materials off the City of Rockville property and legally dispose of them.

3.8 SELECTIVE DEMOLITION SCHEDULE

- A. Existing items to remain, be removed and/or be salvaged are indicated on the drawings.

City of Rockville
Twinbrook Recreation Center Restroom Renovations

END OF SECTION 017320

SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 - 1. Substantial Completion requirements and inspection procedures
 - 2. Final Completion requirements and inspection procedures
 - 3. Project Record Documents.
 - 4. Operation and Maintenance manuals.
 - 5. Warranties.
 - 6. Instruction of the City of Rockville personnel.
 - 7. Final cleaning.
- B. Closeout requirements for specific construction activities are included in the individual sections in Divisions 2 through 16.
- C. This specification section is related to any and all specification sections with explicit or implicit reference to closeout procedures. Specific submittal requirements of these related specification sections are not included in this section. Related sections include but are not limited to the following specification sections:
 - 1. Division 1 Section "Summary"
 - 2. Division 1 Section "Project Management and Coordination"
 - 3. Division 1 Section "Submittal Procedures"
 - 4. Division 1 Section "Quality Requirements"
 - 5. Division 1 Section "Construction Quality Control"
 - 6. Division 1 Section "Temporary Facilities and Controls"
 - 7. Division 1 Section "Safety and Health"
 - 8. Division 1 Section "Product Requirements"
 - 9. Division 1 Section "Project Record Documents"
 - 10. Division 1 Section "Operation and Maintenance Documentation"
 - 11. Division 1 Section "Demonstration and Training"
- D. Substantial Completion is defined as that state when the Contractor has complied with the Contract requirements, except for minor deviations, and the project is sufficiently complete and capable of being occupied and used by the City of Rockville for the intended purpose. Achievement of Substantial Completion is determined by the Contracting Officer.

1.3 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for determining the date of Substantial Completion, complete the following. List items below that are incomplete in request.
1. Provide supporting documentation for completion as indicated elsewhere in the Contract Documents and a statement showing an accounting of changes to the Contract Sum.
 2. Submit a list to the Project Officer, of incomplete items, the value of incomplete construction, and reasons the work is not complete.
 3. Obtain and submit any necessary releases enabling the City of Rockville unrestricted use of the project and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 4. Make final changeover of permanent locks. Use 8 bit Lockwood cylinders in the locks. Set the cylinders for blank keys and transmit two blank keys for each cylinder to the Project Officer. Advise the City of Rockville user personnel of changeover in security provisions.
 5. Complete startup testing of systems and instruction of the City of Rockville operation and maintenance personnel.
 6. Discontinue and remove temporary facilities from the site, along with mockups, construction tools, and similar elements.
 7. Submit Operation and Maintenance Manuals, final project photographs, and final surveys as specified.
 8. Submit draft or final warranty documents for Contracting Officer review for approval.
 9. Complete final clean-up requirements, including touch-up painting. Touch-up and otherwise repair and restore marred exposed finishes.
 10. Record Documents (Drawings, specifications, and product data).
 - a. Initial submission shall be made to the Project Officer prior to the Pre-final Inspection.
 - b. the City of Rockville will review the submission and provide appropriate comments. If comments are significant the initial submission will be returned to the contractor for correction and re-submission incorporating the comments prior to the Final Inspection.
 - c. See Division 1 Section "Project Record Documentation" for additional requirements.
 11. Provide all required submittals to the Contracting Officer.
 12. Submit test/adjust/balance records.
 13. Submit changeover information related to the City of Rockville occupancy, use, operation, and maintenance.
 14. Outline of Instruction Program for the City of Rockville Employees shall be submitted to the Project Officer 14 calendar days prior to the Pre-final Inspection.
- B. Inspection Procedures:
1. Substantial Completion Inspection corresponds to the Pre-Final Completion Inspection described in Division 1 Section "Construction Quality Control."
 2. On receipt of a request for inspection, the Project Officer will either schedule the inspection or advise the Contractor of unfilled requirements. The Contracting Officer will prepare the Certificate of Substantial Completion following the inspection or advise the Contractor of construction that must be completed or corrected before the certificate will be issued.
 3. The Project Officer will repeat the inspection when requested and when assured that the work is substantially complete.
 4. Results of the completed inspection will form the basis of the requirements for final completion.

1.4 SUBMITTALS

- A. The following shall be submitted prior to final payment and closeout.
1. Manufacturer's cleaning instructions
 2. Posted instructions
 3. All required submittals
 4. Record Documents (Drawings, specifications, and product data).
 - a. Initial submission shall be made to the Project Officer prior to the Pre-final Inspection.
 - b. the City of Rockville will review the submission and provide appropriate comments. If comments are significant the initial submission will be returned to the contractor for correction and re-submission incorporating the comments prior to the Final Inspection.
 5. Outline of Instruction Program for the City of Rockville Employees shall be submitted to the Project Officer 14 calendar days prior to the Pre-final Inspection.
 6. Operation and Maintenance Manuals, including Preventive Maintenance, Special Tools, Repair Requirements, Parts List, Spare Parts List, and Operating Instructions.
 7. Construction progress photographs
 8. Final project warranty documents reflecting changes directed by any comments from the Contracting Officer's review of draft documents.
- B. Project Closeout Work Plan. Contractor shall submit a Project Closeout Work Plan for each phase of occupancy to the Project Officer for approval at least 30 calendar days prior to the Substantial Completion Inspection of the phase to be occupied. The plan should include all scheduled inspections, instruction classes, items to be submitted, closeout dates for all functions and the required the City of Rockville and Contractor personnel for these functions that will be taking part.

1.5 FINAL COMPLETION

- A. Preliminary Procedures: Before requesting final inspection for Certification of Final Completion and Final Payment, complete the following. Note that the following are to be completed, submitted as appropriate, and approved by the City of Rockville as applicable prior to the final inspection and are not to be submitted for approval or otherwise at the final inspection unless specifically indicated. List exceptions in the request.
1. Submit final payment request with releases and supporting documentation not previously submitted and accepted.
 2. Submit an updated final statement, accounting for final additional changes to the Contract price.
 3. Verify that all required submittals have been provided to the Contracting Officer including but not limited to the following:
 - a. Manufacturer's cleaning instructions
 - b. Posted instructions
 - c. Record Documents (Drawings, specifications, and product data) incorporating any changes required by the Contracting Officer as a result of the review of the submission prior to the pre-final inspection. See Division 1 Section "Project Record Documentation" for additional requirements.

- d. Operation and Maintenance Manuals, including Preventive Maintenance, Special Tools, Repair Requirements, Parts List, Spare Parts List, and Operating Instructions.
 - e. Construction progress photographs
 - f. Final project warranty documents reflecting changes directed by any comments from the Contracting Officer's review of draft documents.
4. Submit a certified copy of the previous Substantial Completion inspection list of items to be completed or corrected. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance, and shall be endorsed and dated by the Contractor.
 5. Submit Pest management Post Construction Survey and Certification.
 6. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications and similar documents.
 7. Submit record documents and similar final record information.
 8. Deliver tools, spare parts, extra stock and similar items.
 9. Complete final clean-up requirements including touch-up painting of marred surfaces.
 10. Submit final meter readings for utilities, a measured record of stored fuel, and similar data as of the date when the City of Rockville took possession of and assumed responsibility for corresponding elements of the work.
- B. Reinspection Procedure: The Project Officer will reinspect the work upon receipt of notice from the Contractor that the project work, including inspection list items from earlier inspections, has been completed, except for items whose completion is delayed under circumstances acceptable to the Contracting Officer.
1. Upon completion of reinspection, the Project Officer will advise the Contracting Officer, who will prepare a Certificate of Final Completion, or the Contracting Officer will advise the Contractor of work that is incomplete or of obligations that have not been fulfilled and are required for Final Completion.
 2. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for any additional the City of Rockville inspection costs in accordance with the Contract Clause entitled "Inspection of Construction."

1.6 RECORD DOCUMENT SUBMITTALS

- A. As work progresses, prepare and maintain record documents as specified herein. Each record document shall be certified by the Contractor. Do not use record documents for construction purposes. Protect record documents from deterioration and loss in a secure, fire-resistant location. Provide access to record documents for the Project Officer during normal working hours. Upon completion of the project, turn all record documents over to the Contracting Officer.
- B. Record Drawings: Maintain a clean, undamaged set of blue or black line white-prints of Contract Drawings, Shop Drawings and Fire Protection System Installation Drawings. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown. Mark the drawing that is most capable of showing conditions fully and accurately. Where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date.
1. Mark record sets with red erasable pencil. Use other colors to distinguish between variations in separate categories of the work.
 2. Mark new information not shown on Contract Drawings, Shop Drawings or Fire Protection Installation Drawings.

3. Note related Change Order numbers, alternate numbers, and similar identification numbers where applicable.
4. Organize record drawing sheets into manageable sets. Bind sets with durable paper cover sheets. Include project title and other identification as required on the cover of each set. Include a transmittal letter which contains the date, project title, Contractor's name, address and telephone number, submittal schedule reference number and Contractor's signature.
5. Failure by the Contractor to accurately reflect current information on the Record Drawings may result in a determination by the Contracting Officer that the Contractor has failed to meet his progress schedule. Payment, or a portion of the payment, including final payment, may be withheld until the Record Drawings are current, and accepted by the Contracting Officer.
6. Provide 3 complete sets of Record Drawings to the Contracting Officer.
7. If project drawings were available in electronic media, then Record Drawings shall also be provided in electronic media in AUTOCAD Release 14 or greater.

C. Record Specifications: Maintain one complete copy of the Project Specifications with addenda.

1. Mark these documents to show substantial variations in actual work performed in comparison with the text of the Specifications and modifications.
2. Give particular attention to selection of options, and information about concealed construction that cannot otherwise be readily determined later by direct observation.
3. Note related record drawing information and Product Data.
4. Provide 3 complete sets of Record Specifications to the Contracting Officer.

D. Miscellaneous Record Submittals: Assemble miscellaneous records including construction photographs required by other specification sections for miscellaneous record keeping and submittals in connection with actual performance of the work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

1.7 OPERATION AND MAINTENANCE MANUALS

- A. Provide operation and maintenance manuals for each piece of equipment and other systems and components specified in the technical sections of the specifications. Organize operation and maintenance data in suitable sets of manageable size.
- B. Manuals shall have tables of contents, and be assembled to conform to tables of contents, with tab sheets covering each subject. Manuals shall be organized around the Construction Specification Institute 16-Division Master Format. Instructions shall be legible and easy to read. Bind properly indexed data in individual, heavy-duty, 3-ring, vinyl-covered loose-leaf binders, with pocket folders for folded sheet information (except drawings). Where oversize drawings are required, they shall be folded in. Include the words "Operation and Maintenance Manual," the name of the building and building number, and the project title on the cover and spine of each binder. Manuals shall include, but not be limited to, the following types of information.
1. Detailed description of each system and each of its components, including layout showing piping, valves, controls and other components, and including diagrams and illustrations where applicable.
 2. Wiring and control diagrams with data to explain detailed operation and control of each piece of equipment.
 3. Control sequence describing start-up, operation, and shutdown.
 4. Procedure for starting
 5. Procedure for operating
 6. Shut-down instructions
 7. Installation instructions

8. Maintenance and overhaul instructions
9. Lubricating schedule, including type, grade, temperature range and frequency.
10. Emergency instructions and safety precautions.
11. Corrected shop drawings.
12. Approved product data
13. Copies of approved certifications and laboratory test reports (where applicable).
14. Copies of warranties
15. Test procedures
16. Performance curves and rating data
17. Parts list, including source of supply, recommended spare parts, and service organization convenient to the building site. Listing shall indicate manufacturer's name, part number, nomenclature, and stock level required for maintenance and repair. List those items that may be standard to the normal maintenance of the system.
18. Name, address, and telephone number of each Subcontractor who installed equipment and systems, and local representative for each type of equipment and each system.
19. Troubleshooting data.
20. Other pertinent data applicable to the operation and maintenance of particular systems or equipment and/or other specified in technical sections of the Specification.

- a. Manuals for the system as a whole will not be required for outside water distribution systems or storm and sanitary sewer systems.

21. Preventative Maintenance: Include a recommended schedule showing when each system should be retested. Schedule shall define the anticipated length of each test, test apparatus, number of personnel identified by responsibility, and a testing validation procedure permitting the record operation capability requirements. Each test feature; e.g., gpm, rpm, psi, shall have a sign-off blank for the Contractor and Project Officer. A remarks column of the testing validation procedure shall include references to operating limits of time, pressure, temperature, volume, voltage, current, acceleration, velocity, alignment, calibration, adjustments, cleaning, or special system notes. Procedures for preventative maintenance, inspection, adjustment, lubrication and cleaning necessary to minimize corrective maintenance and repair shall be delineated.

- a. Include load limits, speed of operation, environmental criteria and personnel hazard and safety precautions.
- b. Repair requirements shall inform operators how to check out, troubleshoot, repair, and replace components of the system. Instructions shall include electrical and mechanical schematics and diagrams and diagnostic techniques necessary to enable operation and trouble shooting after acceptance of the system.

22. Special Tools: Include a list of special tools required for maintaining and testing each system.

- C. Provide the Contracting Officer with two draft copies of the manuals 14 calendar days prior to testing any system involved and six final copies incorporating the City of Rockville review comments. Data shall be updated and resubmitted for final approval not later than 10 days prior to the established date for the Pre-Final Inspection.

1.8 WARRANTIES

- A. Standard and special warranties required by the individual sections of the Specifications and coincidental warranties shall provide guarantees in terms of time limits or rights of the City of Rockville in addition to those contained in the Construction Contract clauses.

1. Manufacturer's disclaimers and limitations on product warranties do not relieve the contractor of the warranty on the work that incorporates the products.
 2. Manufacturer's disclaimers and limitations on product warranties do not relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.
 3. Standard product warranties shall be preprinted written warranties published by individual manufacturers for particular products, and shall be specifically endorsed to the City of Rockville by the manufacturer.
 4. Special project warranties shall be specifically written to incorporate particular requirements of the Contract Documents, and shall be endorsed to the City of Rockville by the entities responsible for the work, as stated in the individual section.
 5. Coincidental product warranties shall be provided where available on a product incorporated into the work by virtue of the fact that the manufacturer of the product has published a warranty in connection with purchases and uses of the product without regard for specific applications except as otherwise limited by terms of the warranty.
- B. Reinstatement of Warranty: When work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.
- C. Replacement Cost: Upon determination that work covered by a warranty has failed, replace or rebuild the work to an acceptable condition complying with requirements of the Contract Documents. The contractor is responsible for the cost of replacing or rebuilding defective work regardless of whether the City of Rockville has benefited from the use of the work through a portion of its anticipated useful service life.
- D. Rejection of Warranties: The Contracting Officer reserves the right to reject warranties and to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
- E. Where the Contract Documents require a special warranty, or similar commitment for the work or part of the work, the Contracting Officer reserves the right to refuse to accept the work on behalf of the City of Rockville until the contractor presents evidence that entities required to countersign such commitments are willing to do so.
- F. Where a warranty is not specifically required by the Contract Documents but is available on a product incorporated into the work, by virtue of the fact that the manufacturer of the product has published a warranty in connection with purchases and uses of the product without regard for specific applications except as otherwise limited by terms of the warranty, that warranty shall be provided to the City of Rockville.
- G. Submit written warranties to the Contracting Officer as required by the contract documents.
1. Draft copies of required warranty documents shall be submitted to the Contracting Officer for review in the specified format prior to warranty execution and prior to the date certified for Substantial Completion, unless an earlier time of submission is specified elsewhere in the contract documents or requested by the Contracting Officer.
 - a. Submit three copies of draft warranty documents. All but one copy of the draft submission shall be returned to the Contractor for corrections and resubmission.
 2. Warranties will comply with the requirements included in the technical specification sections.
 3. Unless indicated otherwise warranties are to take effect on the date of Substantial Completion.

4. When the contract documents require the Contractor, or the Contractor and a subcontractor, supplier or manufacturer to execute a special warranty, provide a written document that contains the appropriate terms and identification, executed by the required parties.
 - a. Refer to Division 2 through 16 sections for specific content requirements and particular requirements for submitting special warranties.
 5. Following Contracting Officer review, correct draft warranty documents as required and submit three copies of each final warranty document properly executed by the contractor, subcontractor, supplier, or manufacturer at Final Completion.
 6. Organize the warranty documents into an orderly sequence based on the Specification Divisions and Section Numbers.
 - a. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch (115-by-280-mm) paper.
 - b. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
 - c. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation.
 - d. Provide a typed description of each product or installation being warranted, including the name of the product, and the name, address, and telephone number of the Installer.
 7. When warranted construction requires operation and maintenance manuals, provide additional copies of each required warranty in each required manual. Refer to Division 1 Section "Operation and Maintenance Documentation" for requirements of Operation and Maintenance manuals.
- H. When a designated portion of the work is completed and occupied or used by the City of Rockville, by a separate agreement with the contractor during the construction period, submit properly executed warranties within 14 calendar days after completion of that designated portion of the work.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 INSTRUCTIONS TO the City of Rockville PERSONNEL

- A. Operation and Maintenance Instructions: Provide instructions to designated the City of Rockville Employees without additional expense to the City of Rockville, where required by the technical provisions of Divisions 2 - 16. the City of Rockville shall be given 7 calendar days written notice of scheduled instructional services and shall approve such before they are held. Instructional materials belonging to the manufacturer or vendor; e.g., lists, static exhibits, visual aids, shall be made available to the Project Officer. Instructors shall give full instruction is the care, adjustment, and operation of the systems and equipment specified in other sections of these specifications. Arrange for each installer of equipment that requires regular maintenance to meet with the the City of Rockville personnel to provide instruction in proper operation and maintenance. Provide instruction by manufacturer's representatives if installers are not experienced in operation and maintenance procedures.

- B. Submit a written outline with the written notice which describes the instruction program to include:
1. Equipment being demonstrated or the focus of instructions
 2. Relevant specification section
 3. Duration of the instruction or demonstration
 4. Number of individuals that can be trained or demonstrated to at one time
 5. Level of expertise and background requirements of the City of Rockville employees to be trained
 6. Name of proposed instructor.
 7. Any special conditions required for the demonstration (Power outage, HVAC outage, work stoppage in the Laboratory, etc.)
- C. As part of instruction for operating equipment, demonstrate the following procedures:
1. Startup
 2. Shutdown
 3. Emergency Operations
 4. Noise and Vibration adjustments
 5. Safety procedures
 6. Economy and efficiency adjustments
 7. Effective energy utilization

3.2 POSTED OPERATING INSTRUCTIONS

- A. Operating instructions approved by the Project Officer shall be provided for each system and each principal piece of equipment as indicated in Divisions 2-16 of the specifications for the use of operation and maintenance personnel. Include wiring and control diagrams showing the complete layout of the entire system including equipment, piping, and valves, and control sequence, framed under glass or approved laminated plastic and posted where directed by the Project Officer. Printed or engraved operating instructions for each principal piece of equipment including start-up, proper adjustment, operating, lubrication, shutdown, safety precautions, procedure in the event of equipment failure, and any other necessary items of instruction as recommended by the manufacturer of the unit shall be attached to or posted adjacent to the piece of equipment. Operating instructions exposed to the weather shall be made of weather-resisting materials or shall be suitably enclosed to be weather protected. Operating instructions shall not fade when exposed to sunlight and shall be secured to prevent easy removal or peeling.

3.3 FINAL CLEANING

- A. General cleaning during construction is required by the General Conditions and included in Section H of the Contract.
- B. Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial cleaning and maintenance program. Use only those cleaning materials which will not create hazards to health or property and which will not damage surfaces. Use only those cleaning materials and methods recommended by the manufacturer of the surface material to be cleaned. Use cleaning materials only on surfaces recommended by cleaning material manufacturer. Comply with manufacturer's instructions.
- C. Complete the following cleaning operations before requesting inspection for Final Completion.

1. Remove labels and stickers that are not permanent from fixtures and equipment. Do not remove permanent nameplates, equipment model numbers and ratings.
 2. Polish glossy surfaces to a clear shine.
 3. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 4. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 5. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
 6. Remove tools, construction equipment, machinery, and surplus material from Project site.
 7. Remove snow and ice to provide safe access to building.
 8. Remove grease, mastic, adhesives, dust, dirt, stains, fingerprints, labels, and other foreign materials and substances from sight-exposed interior and exterior surfaces. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
 9. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
 10. Sweep concrete floors broom clean in occupied and unoccupied spaces.
 11. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.
 12. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
 13. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
 - a. Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
 14. Internally clean the entire system of piping and equipment. Open dirt pockets and strainers, completely blowing down as required and clean strainer screens of accumulated debris.
 15. Wipe surfaces of mechanical and electrical equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
 16. Replace parts subject to unusual operating conditions.
 17. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
 18. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
 19. Clean ducts, blowers, and coils if units were operated without filters during construction.
 20. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.
 21. Leave Project clean and ready for occupancy.
- D. Pest Control: Engage an experienced, licensed exterminator to make a final inspection and rid the project of rodents, insects, and other pests.
- E. Dust Control: Handle materials in a controlled manner with as little dust and over spray as possible.
- F. Removal of Protection: Remove temporary protection and facilities installed for the protection of the Work during construction.

- G. Compliance: Comply with the regulations of authorities having jurisdiction and with safety standards for cleaning and disposal operations. Do not burn or bury rubbish, waste, and/or excess materials on the City of Rockville property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from the site and dispose of it lawfully.
- H. Remaining Materials: Where extra materials of value are remaining after completion of associated work, they become the City of Rockville property. Arrange for disposition of these materials as directed by the Project Officer.

END OF SECTION 017700

SECTION 017810 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This section includes administrative and procedural requirements for Project Record Documents. Required Project Record Documents include the following:
 - 1. Marked-up copies of Contract Drawings.
 - 2. Marked-up copies of Shop Drawings.
 - 3. Newly prepared drawings.
 - 4. Marked-up copies of Specifications, addenda, and Change Orders.
 - 5. Marked-up Product Data submittals.
 - 6. Construction Photographs
 - 7. Record Samples.
 - 8. Miscellaneous Record Submittals.
- B. Related Sections: This specification section is related to any and all specification sections with explicit or implicit reference to project record documents. Specific submittal requirements of these related specification sections are not included in this section. Related sections include but are not limited to the following specification sections:
 - 1. Division 1 Section "Summary"
 - 2. Division 1 Section "Project Management and Coordination"
 - 3. Division 1 Section "Submittal Procedures"
 - 4. Division 1 Section "Quality Requirements"
 - 5. Division 1 Section "Construction Quality Control"
 - 6. Division 1 Section "Temporary Facilities and Controls"
 - 7. Division 1 Section "Safety and Health"
 - 8. Division 1 Section "Product Requirements"
 - 9. Division 1 Section "Execution Requirements"
 - 10. Division 1 Section "Closeout Procedures"
 - 11. Division 1 Section "Demonstration and Training"
 - 12. Divisions 2 through 16 sections for project record document requirements for products included in those sections.
- C. Project Record Documents and samples are to be stored by the Contractor in the field office apart from the Contract Documents used for construction. Project Record Documents are not to be used for construction purposes. Record Documents shall be maintained in good order and in a clean, dry, legible condition and available at all times for the Contracting Officer's inspection.

1.3 SUBMITTALS

A. Record Drawings: Comply with the following:

1. Number of Copies: Submit one set of marked-up Record Prints to the Contracting Officer for review and approval prior to final payment.
2. Number of Copies: Submit copies of Record Drawings as follows:
 - a. Initial Submittal: Prior to the Pre-final Acceptance Inspection, submit one set of plots from corrected Record CAD Drawings and one set of marked-up Record Prints to the Contracting Officer. Contracting Officer will initial and date each plot and mark whether general scope of changes, additional information recorded, and quality of drafting are acceptable. The Contracting Officer will return plots and prints for correction and organizing into sets, printing, binding, and final submittal.
 - b. Final Submittal: Prior to final payment, submit one set of marked-up Record Prints, set of record transparencies, and three copies printed from Record Transparencies, one set of Record CAD Drawing files, one set of Record CAD Drawing plots, and three copies printed from record plots. Incorporate all comments provided with return of the initial submission. Plot and print each Drawing, whether or not changes and additional information were recorded.
 - 1) Electronic Media: CD-ROM.

B. Record Specifications: Submit one copy of Record Specifications, including addenda and contract modifications.

C. Record Product Data: Submit one copy of each Product Data submittal.

1. Where Record Product Data is required as part of operation and maintenance manuals, submit marked-up Product Data as an insert in the manual instead of submittal as Record Product Data.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

A. Record Prints: During construction, maintain a set of blue or black-line white prints of Contract Drawings and Shop Drawings for Project Record Document purposes.

1. Mark Project Record Drawings to show the actual installation where the installation varies from the installation shown originally. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later. Items required to be marked include, but are not limited to, the following:
 - a. Dimensional changes to the Drawings.
 - b. Revisions to details shown on the Drawings.
 - c. Depths of foundations below the first floor.
 - d. Locations and depths of underground utilities.
 - e. Revisions to routing of piping and conduits.
 - f. Revisions to electrical circuitry.
 - g. Actual equipment locations.
 - h. Duct size and routing.
 - i. Locations of concealed internal utilities.

- j. Changes made by Change Order or Construction Change Directives.
 - k. Changes made following the Contracting Officer's written orders.
 - l. Details not on original Contract Drawings.
- 2. Mark record prints of Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. Where Shop Drawings are marked, show cross-reference to and mark Contract Drawings location.
- 3. Where Contract Drawings or Shop Drawings cannot be modified to clearly indicate the actual conditions, prepare new drawings as specified in the section.
- 4. Mark record sets with red erasable colored pencil. Use other colors to distinguish between changes for different categories of the work at the same location.
- 5. Mark important additional information that was either shown schematically or omitted from original Drawings.
- 6. Note alternate numbers, Change Order numbers, and similar identifications.
- 7. Responsibility for Markup: The individual, installer, subcontractor or other entity who obtained the record data shall prepare the markup on record drawings.
 - a. Accurately record information in an understandable drawing technique.
 - b. Record data as soon as possible after obtaining it. Record and check the markup prior to enclosing concealed installations.
- B. Record Transparencies: Prior to Final Acceptance, review completed marked-up record prints with the Project Officer. When authorized, prepare a full set of corrected transparencies of the Contract Drawings and Shop Drawings.
 - 1. The Contractor is responsible for printing original Contract Drawings and other drawings as required to produce transparencies. The Project Officer will make original Contract Drawings available to the Contractor's print shop.
 - 2. Review of transparencies: Before copying and distributing copies of the corrected drawings, submit corrected transparencies with the original marked-up prints to the Contracting Officer for review and acceptance of the general scope of changes, additional information recorded and quality of drafting. If acceptable, the Contracting Officer will return transparencies and the original marked-up prints to the Contractor for organizing into sets, printing, binding, and final submittal.
 - 3. Copies and Distribution: After completing the preparation of transparency record drawings, print three blue- or black-line prints of each drawing, whether or not changes and additional information were recorded. Organize the copies into manageable sets. Bind each set with durable-paper cover sheets. Include appropriate identification, including titles, dates, and other information on the cover sheets.
 - a. Organize and bind original marked-up set of prints that were maintained during the construction period in the same manner.
 - b. Organize record transparencies into sets matching the print sets. Place these sets in durable tube-type drawing containers with end caps marked with suitable identification.
 - c. Submit the marked-up record set, transparencies, and the copy sets to the Contracting Officer for the City of Rockville records.
 - d. If project drawings were available in electronic media, then record drawings shall also be provided in electronic media as specified in this section.
- C. Newly Prepared Record Drawings: Prepare new drawings instead of following procedures specified for preparing record drawings where new drawings are required when neither the original Contract Drawings nor Shop Drawings are suitable to show the actual installation. New drawings may be required when a Change Order is issued as a result of accepting an alternate, substitution, or other modification.

1. Provide Drawings in a scale that allows for the scope of detailing and notations required to record the actual physical installation and its relationship to other construction.
 2. When completed and accepted, integrate newly prepared Drawings with the previous procedures specified for organizing, copying, binding and submitting record drawings.
- D. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
1. Record Prints: Organize Record Prints and newly prepared Record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
 2. Record Transparencies: Organize into unbound sets matching Record Prints. Place transparencies in durable tube-type drawing containers with end caps. Mark end cap of each container with identification. If container does not include a complete set, identify Drawings included.
 3. Record CAD Drawings: Organize CAD information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each CAD file.
 4. Identification: As follows:
 - a. Project name.
 - b. Date.
 - c. Designation "PROJECT RECORD DRAWINGS."
 - d. Name of Architect.
 - e. Name of Contractor.
 - f. Name of Project Officer.

2.2 RECORD SPECIFICATIONS

- A. During the construction period, maintain three copies of the Project Specifications, including addenda and other modifications issued, for Project Record Document purposes.
1. Mark the Specifications to indicate the actual installation where the installation varies from that indicated in Specifications. Note related project record drawing information, where applicable. Give particular attention to substitutions, selection of product options, and information on concealed installations that would be difficult to identify or measure and record later.
 - a. In each Specification section where products, materials or units of equipment are specified or scheduled, mark the copy with the proprietary name and model number of the product furnished.
 - b. Record the name of the manufacturer, supplier, installer, and other information necessary to provide a record of selections made and to document coordination with record Product Data submittals and maintenance manuals.
 2. Upon completion of markup, submit Record Specifications to the Project Officer for the City of Rockville records.

2.3 RECORD PRODUCT DATA

- A. During the construction period, maintain one copy of each Product Data submittal for Project Record Document purposes.

1. Mark Product Data to indicate the actual product installation where the installation varies substantially from that indicated in Product Data submitted. Include significant changes in the product delivered to the site and changes in manufacturer's instructions and recommendations for installation.
2. Give particular attention to information about concealed products and installations that cannot be readily identified and recorded later.
3. Note related Change Orders and markup of Record Drawings, where applicable.
4. Upon completion of markup, submit a complete set of record Product Data to the Project Officer.
5. Where record Product Data is required as part of operation and maintenance manuals, submit marked-up Product Data as an insert in the manual instead of submittal as record Product Data.

2.4 RECORD SAMPLE SUBMITTAL

- A. Immediately prior to the date of Substantial Completion, the Contractor shall meet with the Project Officer at the site to determine which of the Samples maintained during the construction period shall be transmitted to the City of Rockville for record purposes.
- B. Comply with the Project Officer's instructions for packaging, identification marking and delivery to the City of Rockville sample storage space. Dispose of other samples in a manner specified for disposing of surplus and waste materials.

2.5 MISCELLANEOUS RECORD SUBMITTALS

- A. Refer to other specification sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Prior to Final Acceptance, assemble completed miscellaneous records and place in good order, properly identified and bound or otherwise organized to allow for use and reference.
- B. Submit to the Project Officer for the City of Rockville records.
- C. Miscellaneous records include, but are not limited to, the following:
 1. Field records on excavations and foundations.
 2. Field records on underground construction and similar work.
 3. Survey showing locations and elevations of underground lines.
 4. Invert elevations of drainage piping.
 5. Surveys establishing building lines and levels.
 6. Authorized measurements utilizing unit prices or allowances.
 7. Records of plant treatment.
 8. Ambient and substrate condition tests.
 9. Certifications received in lieu of labels on bulk products.
 10. Batch mixing and bulk delivery records.
 11. Testing and qualification of tradespersons.
 12. Documented qualification of installation firms.
 13. Load and performance testing.
 14. Inspections and certifications by governing authorities.
 15. Leakage and water-penetration tests.
 16. Fire-resistance and flame-spread test results.
 17. Construction photographs and videotapes.
 18. Certifications of final disposition/treatment /disposal of wastes.
 19. Final inspection and correction procedures.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

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

END OF SECTION 017810

SECTION 017822 - OPERATION AND MAINTENANCE DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This section includes administrative and procedural requirements for operation and maintenance manuals and instruction, including the following.
 - 1. Preparing and submitting instruction manuals covering the care, preservation and maintenance of materials and finishes.
 - 2. Preparing and submitting operation and maintenance manuals for equipment and building operating systems.
 - 3. Instruction of the City of Rockville operating personnel in the operation and maintenance of building systems and equipment.
- B. This specification section is related to any and all specification sections with explicit or implicit reference to operation and maintenance documentation including but not limited to the following Division 1 specification sections:
 - 1. Division 1 Section "Summary"
 - 2. Division 1 Section "Project Management and Coordination"
 - 3. Division 1 Section "Construction Progress Documentation"
 - 4. Division 1 Section "Photographic Documentation"
 - 5. Division 1 Section "Submittal Procedures"
 - 6. Division 1 Section "Quality Requirements"
 - 7. Division 1 Section "Construction Quality Control"
 - 8. Division 1 Section "Safety and Health"
 - 9. Division 1 Section "Product Requirements"
 - 10. Division 1 Section "Closeout Procedures"
 - 11. Division 1 Section "Project Record Documents"
 - 12. Division 1 Section "Demonstration and Training"
- C. Additional Requirements: Refer to the individual Division 2-16 technical specification sections for specific operations and maintenance manual requirements for products and systems in those sections and additional requirements for the care and maintenance of materials and finishes, and for the operation and maintenance of the various pieces of equipment and operating systems.

1.3 QUALIFICATIONS

- A. Operation and Maintenance Manual Preparation: In preparation of manuals, use personnel thoroughly trained and experienced in the maintenance of the material or finish involved, or in the operation and maintenance of the equipment or system involved.

1. Where manuals require written instructions, use the personnel skilled in technical writing where necessary for communication of essential data.
 2. Where manuals require drawings or diagrams, use draftspersons capable of preparing drawings clearly in an understandable format.
- B. Instructions for the City of Rockville Personnel: Use instructors thoroughly trained and experienced in the operation and maintenance of the equipment or system involved to instruct the City of Rockville operation and maintenance personnel.
- 1.4 DEFINITIONS
- A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.
- B. Subsystem: A portion of a system with characteristics similar to a system.
- 1.5 COORDINATION
- A. Where operation and maintenance documentation includes information on installations by more than one factory-authorized service representative, assemble and coordinate information furnished by representatives and prepare manuals.
- 1.6 SUBMITTALS
- A. Initial Submittal: Submit to the Contracting Officer 2 (two) draft copies of each manual at least 14 calendar days before the Pre-final Inspection. Include a complete operation and maintenance directory. The Contracting Officer will return 1 (one) copy of draft with comments for incorporation into the final submission.
1. Should comments be extensive, the Contracting Officer may require the Initial Submission to be repeated prior to scheduling a Final Inspection.
 2. Initial submittal shall occur at the initial occupancy phase
- B. Final Submittal: Submit 2 (two) copies of each manual in final form at least two working days before the final inspection. If comments on the Initial Submittal are extensive, the Contracting Officer may require additional time in advance of the Final Inspection for the Final Submittal. Contracting Officer will provide return a copy with comments within 14 calendar days after final inspection.
1. Correct or modify each manual to comply with the Contracting Officer's comments. Submit 2 (two) copies of each corrected manual within 14 calendar days of receipt of Contracting Officer's comments.

PART 2 - PRODUCTS

2.1 OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY

- A. Provide a comprehensive Operation and Maintenance Documentation Directory which provides a quick reference document for all the manuals provided for the project.

- B. Organization: Include a section in the directory for each of the following:
1. Systems and Subsystems.
 - a. List systems and subsystems alphabetically. Include references to operation and maintenance manuals that contain information about each system and subsystem.
 2. Equipment.
 - a. List equipment for each system and subsystem, organized alphabetically by system. For pieces of equipment not part of system or subsystem, list alphabetically in separate list.
 3. Tables of contents.
 - a. Include a copy of the table of contents for each emergency, operation, and maintenance manual.
- C. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with the same designation used in the contract documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

2.2 MANUALS, GENERAL

- A. Organization and Content: Organize each manual into separate sections for each related product or piece of equipment. To the extent applicable, each manual shall contain a title page, table of contents, general information, copies of Product Data, written text, drawings and copies of each warranty and service contract issued.
1. Title Page: Provide a title page in a transparent, plastic envelope as the first sheet of each manual. As a minimum, provide the following information:
 - a. Subject matter covered by the manual.
 - b. Name and address of the Project.
 - c. Date of submittal.
 - d. Name, address, and telephone number of the Contractor.
 - e. Cross-reference to related products in other operation and maintenance manuals, if applicable.
 2. Table of Contents: After title page, include a typewritten table of contents for each volume, arranged systematically by specification section according to the specifications format. Include a list of each product included, identified by product name or other appropriate identifying symbol and indexed to the content of the volume. Where more than one volume is required to accommodate the data, provide a comprehensive table of contents for all volumes in each volume of the set.
 3. General Information: Provide a general information section immediately following table of contents, listing each product included in the manual, identified by product name. Under each product, list the name, address, and telephone number of the subcontractor or installer and the maintenance contractor. Clearly delineate the extent of responsibility for each of these entities. Include a local source for replacement parts for equipment.
 4. Product Data: Where the manuals include manufacturer's standard printed data, include only those sheets that are pertinent to the part or product installed. Mark each sheet to identify each part or product included in the installation. Where the project includes more

- than one item contained in the product data, identify each item, using appropriate references from the Contract Documents. Identify data that is applicable to the installation, and delete references to information that is not applicable.
5. **Written Text:** Prepare written text to provide necessary information where manufacturer's standard printed data is not available, and the information is necessary for proper maintenance of materials or finishes, or for proper operation and maintenance of equipment or systems. Prepare written text where it is necessary to provide additional information or to supplement data included elsewhere in the manual. Organize text in a consistent format under separate headings for different procedures. Where necessary, provide a logical sequence of instruction for each operation or maintenance procedure.
 6. **Drawings:** Provide specially prepared drawings where necessary to supplement manufacturer's printed data to illustrate the relationship of component parts of equipment or systems or to provide control or flow diagrams. Coordinate these drawings with information contained in Project Record Drawings to assure correct illustration of the completed installation.
 7. **Warranties, and Service Contracts:** Provide a copy of each warranty or service contract in the appropriate manual for the information of the City of Rockville operating personnel. Provide written data outlining procedures to follow in the event of product failure. List circumstances and conditions that would affect the validity of warranty.
 8. Where required for full understanding, include a copy of applicable Project Record Drawings. Do not use original Project Record Documents as part of operation and maintenance manuals.
- B. **Format:** Prepare operation and maintenance manuals in the form of an instructional manual for use by operating and maintenance personnel. Organize into suitable sets of manageable size. Where possible, assemble instructions for similar products into a single binder.
1. **Binders:** For each manual, provide heavy-duty, commercial-quality, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to receive 8-1/2-by-11-inch (115-by-280-mm) paper. Provide a clear plastic sleeve on the spine to hold labels describing contents. Provide pockets in the covers to receive folded sheets.
 - a. Where 2 or more binders are necessary to accommodate data, correlate data in each binder into related groupings according to the Specifications table of contents. Cross-reference other binders where necessary to provide essential information for proper operation or maintenance of the product.
 - b. Identify each binder on front and spine, with the printed type of manual (OPERATION MANUAL, MAINTENANCE MANUAL, EMERGENCY MANUAL, etc.), Project title or name, and subject matter covered. Indicate volume number for multiple volume sets of manuals.
 2. **Dividers:** Provide heavy paper dividers with celluloid-covered tabs for each separate section. Mark each tab to indicate contents. Provide a typed description of the product or major parts of equipment included in the section on each divider.
 3. **Protective Plastic Jackets:** Provide protective, transparent, plastic jackets designed to enclose diagnostic software for computerized electronic equipment.
 4. **Text Material:** Where maintenance manuals require written material, use the manufacturer's standard printed materials, where available. If manufacturer's standard printed materials are not available, provide specially prepared data, neatly typewritten, on 8-1/2-by-11-inch (115-by-280-mm), 20-lb/sq. ft. (75-g/sq. m) white bond paper.
 5. **Drawings:** Where manuals require drawings or diagrams, provide reinforced, punched binder tabs on drawings and bind in with text.
 - a. Where oversize drawings are necessary, fold drawings to the same size as text pages and use as a foldout.

- b. If drawings are too large to be used practically as a foldout, place the drawing, neatly folded, in the front or rear pocket of binder. Insert a typewritten page indicating drawing title, description of contents and reference to the applicable location in the manual.
- C. Optional Format of Final Manuals: If specifically approved by the Contracting Officer, written and graphic portions of final manuals may be submitted in a CD ROM electronic format acceptable to the City of Rockville. Manual content and specific information to be included in each type of manual shall comply as specified for bound manuals. Content that is not included in CD ROM electronic format shall be assembled into binders with dividers and other requirements specified for bound manuals. CD ROM disks and binders shall be fully and clearly labeled, with disks and associated binders for each manual boxed or otherwise packaged for accessible storage together.

2.3 EMERGENCY MANUALS

- A. Content: Organize manual into a separate section for each type of emergency with subordinate sections including Emergency Instructions and Emergency Procedures.
 - 1. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:
 - a. Fire.
 - b. Flood.
 - c. Gas leak.
 - d. Water leak.
 - e. Power failure.
 - f. Water outage.
 - g. System, subsystem, or equipment failure.
 - h. Chemical release or spill.
 - 2. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of the City of Rockville operating personnel for notification of installer, supplier, and manufacturer to maintain warranties.
 - 3. Emergency Procedures: Include the following, as applicable:
 - a. Instructions on stopping.
 - b. Shutdown instructions for each type of emergency.
 - c. Operating instructions for conditions outside normal operating limits.
 - d. Required sequences for electric or electronic systems.
 - e. Special operating instructions and procedures.

2.4 OPERATION MANUALS

- A. Content: Provide information needed for daily operations and management of systems and equipment. In addition to requirements in this section, include operation data required in individual Division 2-16 technical specification sections and the following information:
 - 1. System, subsystem, and equipment descriptions.
 - a. Product name and model number.

- b. Manufacturer's name.
 - c. Equipment identification with serial number of each component.
 - d. Equipment function.
 - e. Operating characteristics.
 - f. Limiting conditions.
 - g. Performance curves.
 - h. Engineering data and tests.
 - i. Complete nomenclature and number of replacement parts.
2. Performance and design criteria if contractor is delegated design responsibility.
3. Operating standards.
4. Operating procedures.
 - a. Emergency Shutdown procedures
 - b. Startup procedures.
 - c. Equipment or system break-in procedures.
 - d. Routine and normal operating instructions.
 - e. Regulation and control procedures.
 - f. Instructions on stopping.
 - g. Normal shutdown instructions.
 - h. Seasonal and weekend operating instructions.
 - i. Required sequences for electric or electronic systems.
 - j. Special operating instructions and procedures.
5. Operating logs.
6. Wiring diagrams.
7. Circuit Directories: For electric and electronic systems, provide complete circuit directories of panel boards, including the following, as applicable:
 - a. Electric service.
 - b. Controls.
 - c. Communication.
8. Systems and Equipment Controls. Describe the sequence of operation, and diagram controls as installed
9. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification. Provide charts of valve-tag numbers, with the location and function of each valve.
10. Precautions against improper use.
11. License requirements including inspection and renewal dates.

2.5 PRODUCT MAINTENANCE MANUAL

- A. Content and Organization: Organize manual into a separate section for each product, material, and finish. Order manual by specification section of the applicable product. Include the following for each product:
 1. Source information. List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list :
 - a. Name, Address, Telephone number of Installer or supplier and maintenance service agent.
 - b. Cross-reference to Specification Section number and title in Project Manual.

2. Product information, Include the following, as applicable:
 - a. Product name and model number.
 - b. Manufacturer's name.
 - c. Color, pattern, and texture.
 - d. Material and chemical composition.
 - e. Reordering information for specially manufactured products.
3. Maintenance procedures: Include manufacturer's written recommendations and the following:
 - a. Inspection procedures.
 - b. Types of cleaning agents to be used and methods of cleaning.
 - c. List of cleaning agents and methods of cleaning detrimental to product.
 - d. Schedule for routine cleaning and maintenance.
 - e. Repair instructions.
4. Repair materials and sources: Include lists of materials and local sources of materials and related services.
5. Warranties and bonds, Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
 - a. Include procedures to follow and required notifications for warranty claims.

2.6 SYSTEMS AND EQUIPMENT MAINTENANCE MANUAL

- A. Content and Organization: Organize manual into a separate section for each system, subsystem, and piece of equipment not part of a system ordered by specification section. Include the following information in each section:
 1. Source information. List each system, subsystem, and piece of equipment included in the manual identified by product name and arranged to match manual's table of contents. For each item provide:
 - a. Name, address, and telephone number of Installer or supplier and maintenance service agent
 - b. Cross-reference Specification Section number and title in Project Manual.
 2. Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:
 - a. Standard printed maintenance instructions and bulletins.
 - b. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
 - c. Identification and nomenclature of parts and components.
 - d. List of items recommended to be stocked as spare parts.
 3. Maintenance procedures: Include the following information and items that detail essential maintenance procedures:
 - a. Test and inspection instructions.
 - b. Troubleshooting guide.
 - c. Precautions against improper maintenance.

- d. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 - e. Aligning, adjusting, and checking instructions.
 - f. Demonstration and training videotape, if available.
4. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
 - a. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
 - b. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.
5. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
6. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.
7. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds. This requirement is in addition to the requirement for Warranty Manuals included in Division 1 Section "Product Requirements and Warranties."

2.7 INSTRUCTIONS FOR the City of Rockville PERSONNEL

- A. Prior to the Substantial Completion inspection, instruct the City of Rockville personnel in operation, adjustment, and maintenance of products, equipment, and systems. Provide instruction at mutually agreed times.
- B. Use operation and maintenance manuals for each product, piece of equipment or system as the basis of instruction. Review contents in detail to explain all aspects of operation and maintenance.
- C. Posted Logs and Instructions: Place operating logs and instructions in see-through vinyl or other weather protective sleeves or framed enclosures, and post for use by the City of Rockville personnel in locations approved by the Project Officer.
 1. Post operating log sheets with spares at or near the applicable equipment.
 2. Post flow schematics, wiring diagrams, valve lists, control sequences, start-up and shut-down instructions, and similar information and instructions in the appropriate equipment rooms.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

- A. Operation and Maintenance Documentation Directory: Prepare a separate manual that provides an organized reference to emergency, operation, and maintenance manuals.

- B. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.
- C. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- D. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
 - 1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
 - 2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.
- E. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
 - 1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.
- F. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in Record Drawings to ensure correct illustration of completed installation.
 - 1. Do not use original Project Record Documents as part of operation and maintenance manuals. If Record drawings must be used, copies are to be included in the manuals.
 - 2. Comply with requirements of newly prepared Record Drawings in Division 1 Section "Project Record Documents."
- G. Comply with Division 1 Section "Closeout Procedures" for the schedule for submitting operation and maintenance documentation.

END OF SECTION 017822

SECTION 018200 - DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for instructing the City of Rockville operation and maintenance personnel, including the following:
 - 1. Demonstration of operation of systems, subsystems, and equipment.
 - 2. Training in operation and maintenance of systems, subsystems, and equipment.
- B. This specification section is related to any and all specification sections with explicit or implicit reference to demonstration and training including but not limited to the following Division 1 specification sections:
 - 1. Division 1 Section "Summary"
 - 2. Division 1 Section "Project Management and Coordination"
 - 3. Division 1 Section "Construction Progress Documentation"
 - 4. Division 1 Section "Project Management and Coordination"
 - 5. Division 1 Section "Photographic Documentation"
 - 6. Division 1 Section "Quality Requirements"
 - 7. Division 1 Section "Construction Quality Control"
 - 8. Division 1 Section "Safety and Health"
 - 9. Division 1 Section "Closeout Procedures"
 - 10. Division 1 Section "Project Record Documents"
 - 11. Division 1 Section "Operation and Maintenance Documents"

1.3 SUBMITTALS

- A. Instruction Program: Prior to the Pre-final Inspection, submit 2 copies of the outline of the proposed instructional program for demonstration and training to the Project Officer. Including training modules to be included, a schedule of proposed dates, times, length of instruction time, instructors' names for each training module, and learning objective and outline for each training module.
 - 1. At completion of training, submit 2 complete training manuals for the City of Rockville use.
- B. Qualification Data: For facilitator and instructors, to demonstrate their capabilities and experience, include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- C. Attendance Record: For each training module, submit list of participants and length of instruction time.

- D. Evaluations: For each participant and for each training module, submit results and documentation of performance-based test.
- E. Demonstration and Training Videotape: Submit 2 copies at end of each training module to the Contracting Officer for approval.

1.4 QUALIFICATIONS

- A. Facilitator Qualifications: A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that required for this project, and whose work has resulted in training or education with a record of successful learning performance.
- B. Instructor Qualifications: A factory-authorized service representative, experienced in operation and maintenance procedures and training.
 - 1. Instructor shall meet or exceed any specific qualifications or experience requirements indicated in the Division 2-16 technical specification sections for the specific system, subsystem, or equipment that is the subject of the training or demonstration.

1.5 COORDINATION

- A. Coordinate instruction schedule with the Project Officer. Be prepared to adjust schedule as required to minimize disrupting the City of Rockville operations.
- B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.
- C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program module until operation and maintenance data or manual(s) as required for the equipment in the module have been reviewed and approved by the Contracting Officer.

PART 2 - PRODUCTS

2.1 INSTRUCTION PROGRAM

- A. Program Structure: Develop an instruction program that includes individual training modules for each system and for equipment not part of a system, as required by individual Division 2-16 technical specification sections and as follows:
 - 1. Motorized doors
 - 2. Fire-protection Systems
 - 3. Intrusion Detection Systems
 - 4. Conveying systems
 - 5. Laboratory equipment
 - 6. HVAC Equipment and controls
 - 7. Lighting systems

- B. Training Modules: Develop and submit written learning objective and teaching outlines for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following:
1. Basis of System Design, Operational Requirements, and Criteria: Include the following:
 - a. System, subsystem, and equipment descriptions.
 - b. Performance and design criteria if Contractor is delegated design responsibility.
 - c. Operating standards.
 - d. Regulatory requirements.
 - e. Equipment function.
 - f. Operating characteristics.
 - g. Limiting conditions.
 - h. Performance curves.
 2. Documentation: Review the following items in detail:
 - a. Emergency manuals.
 - b. Operations manuals.
 - c. Maintenance manuals.
 - d. Project Record Documents.
 - e. Identification systems.
 - f. Warranties and bonds.
 - g. Maintenance service agreements and similar continuing commitments.
 3. Emergencies: Include the following, as applicable:
 - a. Instructions on meaning of warnings, trouble indications, and error messages.
 - b. Instructions on stopping.
 - c. Shutdown instructions for each type of emergency.
 - d. Operating instructions for conditions outside of normal operating limits.
 - e. Sequences for electric or electronic systems.
 - f. Special operating instructions and procedures.
 4. Operations: Include the following, as applicable:
 - a. Startup procedures.
 - b. Equipment or system break-in procedures.
 - c. Routine and normal operating instructions.
 - d. Regulation and control procedures.
 - e. Control sequences.
 - f. Safety procedures.
 - g. Instructions on stopping.
 - h. Normal shutdown instructions.
 - i. Operating procedures for emergencies.
 - j. Operating procedures for system, subsystem, or equipment failure.
 - k. Seasonal and weekend operating instructions.
 - l. Required sequences for electric or electronic systems.
 - m. Special operating instructions and procedures.
 5. Adjustments: Include the following:
 - a. Alignments.
 - b. Checking adjustments.
 - c. Noise and vibration adjustments.

- d. Economy and efficiency adjustments.
- 6. Troubleshooting: Include the following:
 - a. Diagnostic instructions.
 - b. Test and inspection procedures.
- 7. Maintenance: Include the following:
 - a. Inspection procedures.
 - b. Types of cleaning agents to be used and methods of cleaning.
 - c. List of cleaning agents and methods of cleaning detrimental to product.
 - d. Procedures for routine cleaning
 - e. Procedures for preventive maintenance.
 - f. Procedures for routine maintenance.
 - g. Instruction on use of special tools.
- 8. Repairs: Include the following:
 - a. Diagnosis instructions.
 - b. Repair instructions.
 - c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 - d. Instructions for identifying parts and components.
 - e. Review of spare parts needed for operation and maintenance.
- C. Training modules can be developed and submitted separately however they must be designed to be compiled into a comprehensive training program. The training program submission will not be complete until the final module has been submitted, reviewed, and approved.

2.2 VIDEO TAPES

- A. Video Format: High quality VHS color videotape in full-size cassettes.
- B. Video Identification: Each copy shall be labeled with an applied label containing the following information:
 - 1. Project name.
 - 2. Name, address and telephone number of photographer.
 - 3. Name of Contractor.
 - 4. Date video was recorded.
 - 5. Subject of demonstration or Training
 - 6. Model Number and building location of Equipment being demonstrated

PART 3 - EXECUTION

3.1 PREPARATION

- A. Assemble educational materials necessary for instruction, including documentation and training. Assemble training modules into a combined training manual.
- B. Set up instructional equipment at instruction location.

3.2 INSTRUCTION

- A. Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and the City of Rockville for number of participants, instruction times, and location.
- B. Contractor provided Instruction: Engage qualified instructors to instruct the City of Rockville personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
- C. The City of Rockville Provided Instruction:
 - 1. The City of Rockville will furnish an instructor to describe basis of system design, operational requirements, criteria, and regulatory requirements.
 - 2. The City of Rockville will furnish an instructor to describe operational philosophy.
- D. The Contracting Officer will furnish the Contractor with the names and positions of the City of Rockville participants.
- E. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
 - 1. Schedule training with the Project Officer at least 7 days' in advance.
- F. Evaluation: At conclusion of each training module, assess and document each participant's mastery of the module by use of an oral, written or demonstration performance-based test.
- G. Demonstration and Training Videotape: Record each training module separately. Include classroom instructions and demonstrations, board diagrams, and other visual aids, but not student practice.
 - 1. At beginning of each training module, record each chart containing learning objective and lesson outline.
 - 2. All videos must be close captioned.
- H. Cleanup: Collect and remove used and leftover educational materials. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

END OF SECTION 018200

SECTION 033000 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Design Mixtures: For each concrete mixture.

1.3 INFORMATIONAL SUBMITTALS

- A. Material certificates.
- B. Material test reports.
- C. Floor surface flatness and levelness measurements.

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
 - 1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."
- B. Testing Agency Qualifications: An independent agency, acceptable to authorities having jurisdiction, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.
- C. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
 - 1. ACI 301, "Specifications for Structural Concrete,"
 - 2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."
- D. Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.
- E. Preinstallation Conference: Conduct conference at Project site.

PART 2 - PRODUCTS

2.1 STEEL REINFORCEMENT

- A. Plain-Steel Welded Wire Reinforcement: ASTM A 185/A 185M, plain, fabricated from as-drawn steel wire into flat sheets.
- B. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening welded wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice."

2.2 CONCRETE MATERIALS

- A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:
 - 1. Portland Cement: ASTM C 150, Type I/II
 - a. Fly Ash: ASTM C 618, Class F.
 - b. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.
- B. Normal-Weight Aggregates: ASTM C 33, graded.
 - 1. Maximum Coarse-Aggregate Size: 1 inch (25 mm).
 - 2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
- C. Lightweight Aggregate: ASTM C 330, 1-inch (25-mm) nominal maximum aggregate size.
- D. Water: ASTM C 94/C 94M and potable.

2.3 ADMIXTURES

- A. Air-Entraining Admixture: ASTM C 260.
- B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
 - 1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
 - 2. Retarding Admixture: ASTM C 494/C 494M, Type B.
 - 3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
 - 4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
 - 5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
 - 6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

2.4 VAPOR RETARDERS

- A. Sheet Vapor Retarder: ASTM E 1745, Class A. Include manufacturer's recommended adhesive or pressure-sensitive tape.
- B. Sheet Vapor Retarder: Polyethylene sheet, ASTM D 4397, not less than 10 mils (0.25 mm) thick.

2.5 CURING MATERIALS

- A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.
- B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. (305 g/sq. m) when dry.
- C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- D. Water: Potable.

2.6 RELATED MATERIALS

- A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber.

2.7 CONCRETE MIXTURES

- A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.
- B. Cementitious Materials: Use fly ash, pozzolan, ground granulated blast-furnace slag, and silica fume as needed to reduce the total amount of portland cement, which would otherwise be used, by not less than 40 percent.
- C. Admixtures: Use admixtures according to manufacturer's written instructions.
 - 1. Use water-reducing [igh-range water-reducing or plasticizing admixture in concrete, as required, for placement and workability.
 - 2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
 - 3. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.50.
- D. Proportion normal-weight concrete mixture as follows:
 - 1. Minimum Compressive Strength: 4000 psi (27.6 MPa) at 28 days.
 - 2. Maximum Water-Cementitious Materials Ratio: 0.55.
 - 3. Slump Limit: 8 inches (200 mm) for concrete with verified slump of 2 to 4 inches (50 to 100 mm) before adding high-range water-reducing admixture or plasticizing admixture, plus or minus 1 inch (25 mm).
 - 4. Air Content: 6.0% plus or minus 1.5% for exposed exterior slabs on grade at point of delivery for 1-inch (38-mm) nominal maximum aggregate size, otherwise 2.0%, plus or minus 1.5%.

2.8 FABRICATING REINFORCEMENT

- A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

2.9 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M, and furnish batch ticket information.
 - 1. When air temperature is between 85 and 90 deg F (30 and 32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 FORMWORK

- A. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.

3.2 EMBEDDED ITEMS

- A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

3.3 VAPOR RETARDERS

- A. Sheet Vapor Retarders: Place, protect, and repair sheet vapor retarder according to ASTM E 1643 and manufacturer's written instructions.
 - 1. Lap joints 6 inches (150 mm) and seal with manufacturer's recommended tape.

3.4 STEEL REINFORCEMENT

3.5 JOINTS

- A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.
- C. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of concrete thickness as follows:
 - 1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch (3.2 mm). Repeat grooving of contraction joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.
 - 2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch (3.2-mm-) wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.

- D. Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.
- E. Waterstops: Install in construction joints and at other joints indicated according to manufacturer's written instructions.

3.6 CONCRETE PLACEMENT

- A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.
- B. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.
 - 1. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
- C. Cold-Weather Placement: Comply with ACI 306.1.
- D. Hot-Weather Placement: Comply with ACI 301.

3.7 FINISHING FORMED SURFACES

- A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
 - 1. Apply to concrete surfaces not exposed to public view.

3.8 FINISHING FLOORS AND SLABS

- A. General: Comply with ACI 302.1R recommendations for screeding, restraighening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.
- B. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraighening until surface is left with a uniform, smooth, granular texture.
 - 1. Apply float finish to surfaces to receive trowel finish
- C. Trowel Finish: After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.
 - 1. Apply a trowel finish to surfaces exposed to view or to be covered with resilient flooring, carpet, ceramic or quarry tile set over a cleavage membrane, paint, or another thin-film-finish coating system.

2. Finish and measure surface so gap at any point between concrete surface and an unlevelled, freestanding, 10-ft.- (3.05-m-) long straightedge resting on two high spots and placed anywhere on the surface does not exceed 3/16 inch (4.8 mm).

3.9 CONCRETE PROTECTING AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.
- B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h (1 kg/sq. m x h) before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- C. Cure concrete according to ACI 308.1, by one or a combination of the following methods:
 1. Moisture Curing: Keep surfaces continuously moist for not less than seven days.
 2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches (300 mm), and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
 3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.
 - a. Removal: After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer unless manufacturer certifies curing compound will not interfere with bonding of floor covering used on Project.
 4. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

3.10 CONCRETE SURFACE REPAIRS

- A. Defective Concrete: Repair and patch defective areas when approved by Architect. Remove and replace concrete that cannot be repaired and patched to Architect's approval.

3.11 FIELD QUALITY CONTROL

- A. Testing and Inspecting: Owner will engage a qualified testing and inspecting agency to perform field tests and inspections and prepare test reports.

END OF SECTION 033000

SECTION 042000 - UNIT MASONRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Concrete masonry units.
 - 2. Concrete building brick.
 - 3. Building (common) brick.
 - 4. Mortar and grout.
 - 5. Steel reinforcing bars.
 - 6. Masonry-joint reinforcement.
 - 7. Ties and anchors.
 - 8. Embedded flashing.
 - 9. Miscellaneous masonry accessories.

1.3 DEFINITIONS

- A. CMU(s): Concrete masonry unit(s).
- B. Reinforced Masonry: Masonry containing reinforcing steel in grouted cells.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples for Verification: Brick and mortar shall match those used on existing building:
 - 1. Clay face brick, in the form of straps of five or more bricks.

1.5 INFORMATIONAL SUBMITTALS

- A. Mix Designs: For each type of mortar and grout. Include description of type and proportions of ingredients.
 - 1. Include test reports for mortar mixes required to comply with property specification. Test according to ASTM C 109/C 109M for compressive strength, ASTM C 1506 for water retention, and ASTM C 91/C 91M for air content.
 - 2. Include test reports, according to ASTM C 1019, for grout mixes required to comply with compressive strength requirement.

- B. Cold-Weather and Hot-Weather Procedures: Detailed description of methods, materials, and equipment to be used to comply with requirements.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry.
- B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.
- C. Store aggregates where grading and other required characteristics can be maintained, and contamination avoided.
- D. Deliver preblended, dry mortar mix in moisture-resistant containers. Store preblended, dry mortar mix in delivery containers on elevated platforms in a dry location or in covered weatherproof dispensing silos.
- E. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

1.7 FIELD CONDITIONS

- A. Protection of Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.
 - 1. Extend cover a minimum of 24 inches (600 mm) down both sides of walls, and hold cover securely in place.
 - 2. Where one wythe of multiwythe masonry walls is completed in advance of other wythes, secure cover a minimum of 24 inches (600 mm) down face next to unconstructed wythe, and hold cover in place.
- B. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and soil that come in contact with such masonry.
 - 1. Protect base of walls from rain-splashed mud and from mortar splatter by spreading coverings on ground and over wall surface.
 - 2. Protect projections from mortar droppings.
 - 3. Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar and dirt onto completed masonry.
- C. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in TMS 602/ACI 530.1/ASCE 6.
 - 1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F (4 deg C) and higher and will remain so until masonry has dried, but not less than seven days after completing cleaning.

- D. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in TMS 602/ACI 530.1/ASCE 6.

1.8 COORDINATION

- A. Advise installers of adjacent Work about specific requirements for placement of reinforcement, veneer anchors, flashing, and similar items to be built into stone masonry.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Source Limitations for Masonry Units: Obtain exposed masonry units of a uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, from single source from single manufacturer for each product required.
- B. Source Limitations for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from single manufacturer for each cementitious component and from single source or producer for each aggregate.

2.2 UNIT MASONRY, GENERAL

- A. Masonry Standard: Comply with TMS 602/ACI 530.1/ASCE 6, except as modified by requirements in the Contract Documents.
- B. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to contain chips, cracks, or other defects exceeding limits stated. Do not use units where such defects are exposed in the completed Work and will be within 20 feet (6 m) vertically and horizontally of a walking surface.

2.3 CONCRETE MASONRY UNITS

- A. Regional Materials: CMUs shall be manufactured within 100 miles (160 km) of Project site from aggregates and cement that have been extracted, harvested, or recovered, as well as manufactured, within 100 miles (160 km) of Project site.
- B. Shapes: Provide shapes indicated and as follows, with exposed surfaces matching exposed faces of adjacent units unless otherwise indicated.
 - 1. Provide special shapes for lintels, corners, jambs, sashes, movement joints, headers, bonding, and other special conditions.
 - 2. Provide square-edged units for outside corners unless otherwise indicated.
- C. CMUs: ASTM C 90.
 - 1. Density Classification: Normal weight unless otherwise indicated.
 - 2. Size (Width): Manufactured to dimensions 3/8 inch (10 mm) less than nominal dimensions.
 - 3. Exposed Faces: Provide color and texture matching the range represented by Architect's sample.

D. Concrete Building Brick: ASTM C 55.

1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 2800 psi (19.3 MPa).
2. Density Classification: Normal weight.
3. Size (Actual Dimensions): 3-5/8 inches (92 mm) wide by 2-1/4 inches (57 mm) high by 7-5/8 inches (194 mm) long.

2.4 BRICK

A. Regional Materials: Brick shall be manufactured within 100 miles (160 km) of Project site from materials that have been extracted, harvested, or recovered, as well as manufactured, within 100 miles (160 km) of Project site.

B. General: Provide shapes indicated and as follows, with exposed surfaces matching finish and color of exposed faces of adjacent units:

1. For ends of sills and caps and for similar applications that would otherwise expose unfinished brick surfaces, provide units without cores or frogs and with exposed surfaces finished.
2. Provide special shapes for applications where stretcher units cannot accommodate special conditions, including those at corners, movement joints, bond beams, sashes, and lintels.
3. Provide special shapes for applications requiring brick of size, form, color, and texture on exposed surfaces that cannot be produced by sawing.
4. Provide special shapes for applications where shapes produced by sawing would result in sawed surfaces being exposed to view.

C. Clay Face Brick: Facing brick complying with ASTM C 216.

1. Grade: SW.
2. Type: FBS.
3. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 3350 psi (23.10 MPa).
4. Initial Rate of Absorption: Less than 30 g/30 sq. in. (30 g/194 sq. cm) per minute when tested according to ASTM C 67.
5. Efflorescence: Provide brick that has been tested according to ASTM C 67 and is rated "not effloresced."
6. Size (Actual Dimensions): [3-5/8 inches (92 mm) wide by 2-1/4 inches (57 mm) high by 7-5/8 inches (194 mm) long].
7. Application: Use where brick is exposed unless otherwise indicated.
8. Where shown to "match existing," provide face brick matching color range, texture, and size of existing adjacent brickwork.

D. Building (Common) Brick: ASTM C 62, Grade SW.

1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 3350 psi (23.10 MPa).
2. Size: Match size of face brick.
3. Application: Use where brick is indicated for concealed locations. Face brick complying with requirements for grade, compressive strength, and size indicated for building brick may be substituted for building brick.

2.5 MORTAR AND GROUT MATERIALS FOR BRICK AND CMU

- A. Regional Materials: Aggregate for mortar and grout, cement, and lime shall be manufactured within 100 miles (160 km) of Project site from materials that have been extracted, harvested, or recovered, as well as manufactured, within 100 miles (160 km) of Project site.
- B. Portland Cement: ASTM C 150/C 150M, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.
 - 1. Alkali content shall not be more than 0.1 percent when tested according to ASTM C 114.
- C. Hydrated Lime: ASTM C 207, Type S.
- D. Portland Cement-Lime Mix: Packaged blend of portland cement and hydrated lime containing no other ingredients.
- E. Mortar Cement: ASTM C 1329/C 1329M.
- F. Mortar Pigments: Natural and synthetic iron oxides and chromium oxides, compounded for use in mortar mixes and complying with ASTM C 979/C 979M. Use only pigments with a record of satisfactory performance in masonry mortar.
- G. Colored Cement Products: Packaged blend made from portland cement and hydrated lime and mortar pigments, all complying with specified requirements, and containing no other ingredients.
 - 1. Colored Portland Cement-Lime Mix:
 - a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - 1) Essroc.
 - 2) Holcim (US) Inc.
 - 3) Lafarge North America Inc.
 - 4) Lehigh Hanson; HeidelbergCement Group.
 - 2. Formulate blend as required to produce color indicated or, if not indicated, as selected from manufacturer's standard colors.
 - 3. Pigments shall not exceed 10 percent of portland cement by weight.
 - 4. Pigments shall not exceed 5 percent of mortar cement by weight.
- H. Aggregate for Mortar: ASTM C 144.
 - 1. For mortar that is exposed to view, use washed aggregate consisting of natural sand or crushed stone.
 - 2. For joints less than 1/4 inch (6 mm) thick, use aggregate graded with 100 percent passing the No. 16 (1.18-mm) sieve.
 - 3. White-Mortar Aggregates: Natural white sand or crushed white stone.
 - 4. Colored-Mortar Aggregates: Natural sand or crushed stone of color necessary to produce required mortar color.
- I. Aggregate for Grout: ASTM C 404.

- J. Cold-Weather Admixture: Nonchloride, noncorrosive, accelerating admixture complying with ASTM C 494/C 494M, Type C, and recommended by manufacturer for use in masonry mortar of composition indicated.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. BASF Corp. - Construction Chemicals.
 - b. Euclid Chemical Company (The); an RPM company.
 - c. GCP Applied Technologies Inc. (formerly Grace Construction Products).
- K. Water: Potable.

2.6 REINFORCEMENT

- A. Uncoated-Steel Reinforcing Bars: ASTM A 615/A 615M or ASTM A 996/A 996M, Grade 60 (Grade 420).
- B. Reinforcing Bar Positioners: Wire units designed to fit into mortar bed joints spanning masonry unit cells and to hold reinforcing bars in center of cells. Units are formed from 0.148-inch (3.77-mm) steel wire, hot-dip galvanized after fabrication. Provide units designed for number of bars indicated.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Dur-O-Wal; a Hohmann & Barnard company.
 - b. Heckmann Building Products, Inc.
 - c. Hohmann & Barnard, Inc.
 - d. Lock Rite.
 - e. Wire-Bond.
- C. Masonry-Joint Reinforcement, General: ASTM A 951/A 951M.
1. Exterior Walls: Hot-dip galvanized carbon or Stainless steel.
 2. Wire Size for Side Rods: 0.187-inch (4.76-mm) diameter.
 3. Wire Size for Cross Rods: 0.187-inch (4.76-mm) diameter.
 4. Wire Size for Veneer Ties: 0.187-inch (4.76-mm) diameter.
 5. Spacing of Cross Rods, Tabs, and Cross Ties: Not more than 16 inches (407 mm) o.c.
- D. Masonry-Joint Reinforcement for Multiwythe Masonry:
1. Ladder type with one side rod at each face shell of hollow masonry units more than 4 inches (100 mm) wide, plus one side rod at each wythe of masonry 4 inches (100 mm) wide or less.
 2. Tab type, either ladder or truss design, with one side rod at each face shell of backing wythe and with rectangular tabs sized to extend at least halfway through facing wythe, but with at least 5/8-inch (16-mm) cover on outside face.
 3. Adjustable (two-piece) type, either ladder or truss design, with one side rod at each face shell of backing wythe and with separate adjustable ties with pintle-and-eye connections having a maximum horizontal play of 1/16 inch (1.5 mm) and maximum vertical adjustment of 1-1/4 inches (32 mm). Size ties to extend at least halfway through facing wythe but with at least 5/8-inch (16-mm) cover on outside face.

2.7 TIES AND ANCHORS FOR BRICK AND CMU

- A. General: Ties and anchors shall extend at least 1-1/2 inches (38 mm) into veneer but with at least a 5/8-inch (16-mm) cover on outside face.
- B. Materials: Provide ties and anchors specified in this article that are made from materials that comply with the following unless otherwise indicated:
 - 1. Hot-Dip Galvanized, Carbon-Steel Wire: ASTM A 82/A 82M, with ASTM A 153/A 153M, Class B-2 coating.
 - 2. Stainless-Steel Wire: ASTM A 580/A 580M, Type 304.
 - 3. Stainless-Steel Sheet: ASTM A 240/A 240M or ASTM A 666, Type 304.
- C. Partition Top Anchors: 0.105-inch- (2.66-mm-) thick metal plate with a 3/8-inch- (9.5-mm-) diameter metal rod 6 inches (152 mm) long welded to plate and with closed-end plastic tube fitted over rod that allows rod to move in and out of tube. Fabricate from steel, hot-dip galvanized after fabrication.
- D. Rigid Anchors: Fabricate from steel bars 1-1/2 inches (38 mm) wide by 1/4 inch (6.35 mm) thick by 24 inches (610 mm) long, with ends turned up 2 inches (51 mm) or with cross pins unless otherwise indicated.
 - 1. Corrosion Protection: Hot-dip galvanized to comply with ASTM A 153/A 153M or Epoxy coating 0.020 inch (0.51 mm) thick.

2.8 EMBEDDED FLASHING MATERIALS

- A. Flexible Flashing: Use one of the following unless otherwise indicated:
 - 1. Copper-Laminated Flashing: 7-oz./sq. ft. (2-kg/sq. m) copper sheet bonded between two layers of glass-fiber cloth. Use only where flashing is fully concealed in masonry.
 - a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - 1) Hohmann & Barnard, Inc.
 - 2) Wire-Bond.
 - 3) York Manufacturing, Inc.
 - 2. Asphalt-Coated Copper Flashing: 7-oz./sq. ft. (2-kg/sq. m) copper sheet coated with flexible asphalt. Use only where flashing is fully concealed in masonry.
 - a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1) Advanced Building Products Inc.
 - 2) Hohmann & Barnard, Inc.
 - 3) Wire-Bond.
- B. Application: Unless otherwise indicated, use the following:
 - 1. Where flashing is indicated to receive counterflashing, use metal flashing.
 - 2. Where flashing is indicated to be turned down at or beyond the wall face, use metal flashing.

3. Where flashing is partly exposed and is indicated to terminate at the wall face, use metal flashing with a drip edge.
 4. Where flashing is fully concealed, use flexible flashing.
- C. Solder and Sealants for Sheet Metal Flashings:
1. Solder for Copper: ASTM B 32, Grade Sn50 with maximum lead content of 0.2 percent.
- D. Adhesives, Primers, and Seam Tapes for Flashings: Flashing manufacturer's standard products or products recommended by flashing manufacturer for bonding flashing sheets to each other and to substrates.
- E. Termination Bars for Flexible Flashing: Stainless steel bars 0.075 inch by 1 inch (1.90 mm by 25 mm).

2.9 MISCELLANEOUS MASONRY ACCESSORIES

- A. Compressible Filler: Premolded filler strips complying with ASTM D 1056, Grade 2A1; compressible up to 35 percent; of width and thickness indicated; formulated from neoprene.
- B. Preformed Control-Joint Gaskets: Made from styrene-butadiene-rubber compound, complying with ASTM D 2000, Designation M2AA-805 and designed to fit standard sash block and to maintain lateral stability in masonry wall; size and configuration as indicated.
- C. Bond-Breaker Strips: Asphalt-saturated felt complying with ASTM D 226/D 226M, Type I (No. 15 asphalt felt).
- D. Weep/Cavity Vent Products: Use one of the following unless otherwise indicated:
1. Wicking Material: Absorbent rope, made from cotton or UV-resistant synthetic fiber, 1/4 to 3/8 inch (6 to 10 mm) in diameter, in length required to produce 2-inch (50-mm) exposure on exterior and 18 inches (450 mm) in cavity. Use only for weeps.
 2. Round Plastic Weep/Vent Tubing: Medium-density polyethylene, 3/8-inch (9-mm) OD by 4 inches (100 mm) long.
 3. Mesh Weep/Vent: Free-draining mesh; made from polyethylene strands, full height and width of head joint and depth 1/8 inch (3 mm) less than depth of outer wythe; in color selected from manufacturer's standard.
 - a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - 1) Advanced Building Products Inc.
 - 2) CavClear/Archovations, Inc.
 - 3) Keene Building Products.
 - 4) Mortar Net Solutions.
- E. Cavity Drainage Material: Free-draining mesh, made from polymer strands that will not degrade within the wall cavity.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Advanced Building Products Inc.

- b. CavClear/Archovations, Inc.
 - c. Heckmann Building Products, Inc.
 - d. Hohmann & Barnard, Inc.
 - e. Mortar Net Solutions.
 - f. Wire-Bond.
2. Configuration: Provide one of the following:
- a. Strips, full depth of cavity and 10 inches (250 mm) high, with dovetail-shaped notches 7 inches (175 mm) deep that prevent clogging with mortar droppings.
 - b. Strips, not less than [3/4 inch (19 mm)] [1-1/2 inches (38 mm)] thick and 10 inches (250 mm) high, with dimpled surface designed to catch mortar droppings and prevent weep holes from clogging with mortar.
 - c. Sheets or strips, full depth of cavity and installed to full height of cavity.
 - d. Sheets or strips not less than [3/4 inch (19 mm)] [1 inch (25 mm)] <Insert thickness> thick and installed to full height of cavity, with additional strips 4 inches (100 mm) high at weep holes and thick enough to fill entire depth of cavity and prevent weep holes from clogging with mortar.

2.10 MASONRY-CELL FILL

- A. Loose-Fill Insulation: Perlite complying with ASTM C 549, Type II (surface treated for water repellency and limited moisture absorption) or Type IV (surface treated for water repellency and to limit dust generation).
- B. Lightweight-Aggregate Fill: ASTM C 331/C 331M.

2.11 MASONRY CLEANERS

- A. Proprietary Acidic Cleaner: Manufacturer's standard-strength cleaner designed for removing mortar/grout stains, efflorescence, and other new construction stains from new masonry without discoloring or damaging masonry surfaces. Use product expressly approved for intended use by cleaner manufacturer and manufacturer of masonry units being cleaned.

2.12 MORTAR AND GROUT MIXES

- A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures unless otherwise indicated.
 - 1. Do not use calcium chloride in mortar or grout.
 - 2. Use portland cement-lime or masonry cement mortar unless otherwise indicated.
 - 3. Add cold-weather admixture (if used) at same rate for all mortar that will be exposed to view, regardless of weather conditions, to ensure that mortar color is consistent.
- B. Preblended, Dry Mortar Mix: Furnish dry mortar ingredients in form of a preblended mix. Measure quantities by weight to ensure accurate proportions, and thoroughly blend ingredients before delivering to Project site.
- C. Mortar for Unit Masonry: Comply with ASTM C 270, Proportion Specification. Provide the following types of mortar for applications stated unless another type is indicated or needed to provide required compressive strength of masonry.

1. For masonry below grade or in contact with earth, use Type M.
 2. For reinforced masonry, use Type N.
 3. For mortar parge coats, use Type S or Type N.
 4. For exterior, above-grade, load-bearing and nonload-bearing walls and parapet walls; for interior load-bearing walls; for interior nonload-bearing partitions; and for other applications where another type is not indicated, use Type N.
 5. For interior nonload-bearing partitions, Type O may be used instead of Type N.
- D. Pigmented Mortar: Use colored cement product or select and proportion pigments with other ingredients to produce color required. Do not add pigments to colored cement products.
1. Pigments shall not exceed 10 percent of portland cement by weight.
 2. Pigments shall not exceed 5 percent of mortar cement by weight.
 3. Mix to match Architect's sample (existing building mortar).
 4. Application: Use pigmented mortar for exposed mortar joints with the following units:
 - a. Clay face brick.

PART 3 - EXECUTION

3.1 GENERAL

- A. Execution requirements in Articles 3.2 – 3.15 below refer to brick and CMU construction.

3.2 EXAMINATION

- A. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
1. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
 2. Verify that foundations are within tolerances specified.
 3. Verify that reinforcing dowels are properly placed.
 4. Verify that substrates are free of substances that impair mortar bond.
- B. Before installation, examine rough-in and built-in construction for piping systems to verify actual locations of piping connections.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.3 INSTALLATION, GENERAL

- A. Thickness: Build cavity and composite walls and other masonry construction to full thickness shown. Build single-wythe walls to actual widths of masonry units, using units of widths indicated.
- B. Build chases and recesses to accommodate items specified in this and other Sections.
- C. Leave openings for equipment to be installed before completing masonry. After installing equipment, complete masonry to match construction immediately adjacent to opening.

- D. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.
- E. Select and arrange units for exposed unit masonry to produce a uniform blend of colors and textures. Mix units from several pallets or cubes as they are placed.
- F. Matching Existing Masonry: Match coursing, bonding, color, and texture of existing masonry.
- G. Wetting of Brick: Wet brick before laying if initial rate of absorption exceeds 30 g/30 sq. in. (30 g/194 sq. cm) per minute when tested according to ASTM C 67. Allow units to absorb water so they are damp but not wet at time of laying.

3.4 TOLERANCES

A. Dimensions and Locations of Elements:

- 1. For dimensions in cross section or elevation, do not vary by more than plus 1/2 inch (12 mm) or minus 1/4 inch (6 mm).
- 2. For location of elements in plan, do not vary from that indicated by more than plus or minus 1/2 inch (12 mm).
- 3. For location of elements in elevation, do not vary from that indicated by more than plus or minus 1/4 inch (6 mm) in a story height or 1/2 inch (12 mm) total.

B. Lines and Levels:

- 1. For bed joints and top surfaces of bearing walls, do not vary from level by more than 1/4 inch in 10 feet (6 mm in 3 m), or 1/2-inch (12-mm) maximum.
- 2. For conspicuous horizontal lines, such as lintels, sills, parapets, and reveals, do not vary from level by more than 1/8 inch in 10 feet (3 mm in 3 m), 1/4 inch in 20 feet (6 mm in 6 m), or 1/2-inch (12-mm) maximum.
- 3. For vertical lines and surfaces, do not vary from plumb by more than 1/4 inch in 10 feet (6 mm in 3 m), 3/8 inch in 20 feet (9 mm in 6 m), or 1/2-inch (12-mm) maximum.
- 4. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/8 inch in 10 feet (3 mm in 3 m), 1/4 inch in 20 feet (6 mm in 6 m), or 1/2-inch (12-mm) maximum.
- 5. For lines and surfaces, do not vary from straight by more than 1/4 inch in 10 feet (6 mm in 3 m), 3/8 inch in 20 feet (9 mm in 6 m), or 1/2-inch (12-mm) maximum.
- 6. For vertical alignment of exposed head joints, do not vary from plumb by more than 1/4 inch in 10 feet (6 mm in 3 m), or 1/2-inch (12-mm) maximum.
- 7. For faces of adjacent exposed masonry units, do not vary from flush alignment by more than 1/16 inch (1.5 mm) except due to warpage of masonry units within tolerances specified for warpage of units.

C. Joints:

- 1. For bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch (3 mm), with a maximum thickness limited to 1/2 inch (12 mm).
- 2. For exposed bed joints, do not vary from bed-joint thickness of adjacent courses by more than 1/8 inch (3 mm).
- 3. For head and collar joints, do not vary from thickness indicated by more than plus 3/8 inch (9 mm) or minus 1/4 inch (6 mm).

4. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch (3 mm). Do not vary from adjacent bed-joint and head-joint thicknesses by more than 1/8 inch (3 mm).
5. For exposed bed joints and head joints of stacked bond, do not vary from a straight line by more than 1/16 inch (1.5 mm) from one masonry unit to the next.

3.5 LAYING MASONRY WALLS

- A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.
- B. Bond Pattern for Exposed Masonry: Unless otherwise indicated, lay exposed masonry using same bond pattern as existing building; do not use units with less-than-nominal 4-inch (100-mm) horizontal face dimensions at corners or jambs.
- C. Lay concealed masonry with all units in a wythe in running bond or bonded by lapping not less than 2 inches (50 mm). Bond and interlock each course of each wythe at corners. Do not use units with less-than-nominal 4-inch (100-mm) horizontal face dimensions at corners or jambs.
- D. Stopping and Resuming Work: Stop work by stepping back units in each course from those in course below; do not tooth. When resuming work, clean masonry surfaces that are to receive mortar, remove loose masonry units and mortar, and wet brick if required before laying fresh masonry.
- E. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.
- F. Fill space between steel frames and masonry solidly with mortar unless otherwise indicated.
- G. Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath, wire mesh, or plastic mesh in the joint below, and rod mortar or grout into core.
- H. Fill cores in hollow CMUs with grout 24 inches (600 mm) under bearing plates, beams, lintels, posts, and similar items unless otherwise indicated.
- I. Build nonload-bearing interior partitions full height of story to underside of solid floor or roof structure above unless otherwise indicated.
 1. Install compressible filler in joint between top of partition and underside of structure above.
 2. Fasten partition top anchors to structure above and build into top of partition. Grout cells of CMUs solidly around plastic tubes of anchors and push tubes down into grout to provide 1/2-inch (13-mm) clearance between end of anchor rod and end of tube. Space anchors 48 inches (1200 mm) o.c. unless otherwise indicated.
 3. Wedge nonload-bearing partitions against structure above with small pieces of tile, slate, or metal. Fill joint with mortar after dead-load deflection of structure above approaches final position.

3.6 MORTAR BEDDING AND JOINTING

- A. Lay CMUs as follows:

1. Bed face shells in mortar and make head joints of depth equal to bed joints.
 2. Bed webs in mortar in all courses of piers, columns, and pilasters.
 3. Bed webs in mortar in grouted masonry, including starting course on footings.
 4. Fully bed entire units, including areas under cells, at starting course on footings where cells are not grouted.
 5. Fully bed units and fill cells with mortar at anchors and ties as needed to fully embed anchors and ties in mortar.
- B. Lay solid masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.
- C. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness unless otherwise indicated. Shape of joint shall match that of existing building.

3.7 COMPOSITE MASONRY

- A. Bond wythes of composite masonry together as follows:
1. Masonry-Joint Reinforcement: Installed in horizontal mortar joints.
 - a. Where bed joints of both wythes align, use ladder-type reinforcement extending across both wythes.
 - b. Where bed joints of wythes do not align, use adjustable-type (two-piece-type) reinforcement with continuous horizontal wire in facing wythe attached to ties.
 2. Header Bonding: Provide masonry unit headers extending not less than 3 inches (76 mm) into each wythe. Space headers not more than 8 inches (203 mm) clear horizontally and 16 inches (406 mm) clear vertically.
- B. Bond wythes of composite masonry together using bonding system indicated on Drawings.
- C. Collar Joints: Solidly fill collar joints by parging face of first wythe that is laid and shoving units of other wythe into place.
- D. Corners: Provide interlocking masonry unit bond in each wythe and course at corners unless otherwise indicated.
1. Provide continuity with masonry-joint reinforcement at corners by using prefabricated L-shaped units as well as masonry bonding.
- E. Intersecting and Abutting Walls: Unless vertical expansion or control joints are shown at juncture, bond walls together as follows:
1. Provide continuity with masonry-joint reinforcement by using prefabricated T-shaped units.

3.8 MASONRY-CELL FILL

- A. Pour lightweight-aggregate fill into cavities to fill void spaces. Maintain inspection ports to show presence of fill at extremities of each pour area. Close the ports after filling has been confirmed. Limit the fall of fill to one story high, but not more than 20 feet (6 m).
- B. Install molded-polystyrene insulation units into masonry unit cells before laying units.

3.9 MASONRY-JOINT REINFORCEMENT

- A. General: Install entire length of longitudinal side rods in mortar with a minimum cover of 5/8 inch (16 mm) on exterior side of walls, 1/2 inch (13 mm) elsewhere. Lap reinforcement a minimum of 6 inches (150 mm).
 - 1. Space reinforcement not more than 16 inches (406 mm) o.c.
 - 2. Space reinforcement not more than 8 inches (203 mm) o.c. in foundation walls and parapet walls.
 - 3. Provide reinforcement not more than 8 inches (203 mm) above and below wall openings and extending 12 inches (305 mm) beyond openings in addition to continuous reinforcement.
- B. Interrupt joint reinforcement at control and expansion joints unless otherwise indicated.
- C. Provide continuity at wall intersections by using prefabricated T-shaped units.
- D. Provide continuity at corners by using prefabricated L-shaped units.
- E. Cut and bend reinforcing units as directed by manufacturer for continuity at corners, returns, offsets, column fireproofing, pipe enclosures, and other special conditions.

3.10 CONTROL AND EXPANSION JOINTS

- A. General: Install control- and expansion-joint materials in unit masonry as masonry progresses. Do not allow materials to span control and expansion joints without provision to allow for in-plane wall or partition movement.
- B. Form control joints in concrete masonry using one of the following methods:
 - 1. Fit bond-breaker strips into hollow contour in ends of CMUs on one side of control joint. Fill resultant core with grout, and rake out joints in exposed faces for application of sealant.
 - 2. Install preformed control-joint gaskets designed to fit standard sash block.
 - 3. Install interlocking units designed for control joints. Install bond-breaker strips at joint. Keep head joints free and clear of mortar, or rake out joint for application of sealant.
 - 4. Install temporary foam-plastic filler in head joints, and remove filler when unit masonry is complete for application of sealant.

3.11 FLASHING, WEEP HOLES, AND CAVITY VENTS

- A. General: Install embedded flashing and weep holes in masonry at shelf angles, lintels, ledges, other obstructions to downward flow of water in wall, and where indicated.
- B. Install flashing as follows unless otherwise indicated:
 - 1. Prepare masonry surfaces so they are smooth and free from projections that could puncture flashing. Where flashing is within mortar joint, place through-wall flashing on sloping bed of mortar and cover with mortar. Before covering with mortar, seal penetrations in flashing with adhesive, sealant, or tape as recommended by flashing manufacturer.

2. At multiwythe masonry walls, including cavity walls, extend flashing through outer wythe, turned up a minimum of 4 inches (100 mm), and 1-1/2 inches (38 mm) into the inner wythe. Form 1/4-inch (6-mm) hook in edge of flashing embedded in inner wythe.
 3. Interlock end joints of ribbed sheet metal flashing by overlapping ribs not less than 1-1/2 inches (38 mm) or as recommended by flashing manufacturer, and seal lap with elastomeric sealant complying with requirements in Section 079200 "Joint Sealants" for application indicated.
 4. Install metal drip edges and sealant stops with ribbed sheet metal flashing by interlocking hemmed edges to form hooked seam. Seal seam with elastomeric sealant complying with requirements in Section 079200 "Joint Sealants" for application indicated.
 5. Cut flexible flashing off flush with face of wall after masonry wall construction is completed.
- C. Install single-wythe CMU flashing system in bed joints of CMU walls where indicated to comply with manufacturer's written instructions. Install CMU cell pans with upturned edges located below face shells and webs of CMUs above and with weep spouts aligned with face of wall. Install CMU web covers so that they cover upturned edges of CMU cell pans at CMU webs and extend from face shell to face shell.
- D. Install reglets and nailers for flashing and other related construction where they are shown to be built into masonry.
- E. Install weep holes in exterior wythes and veneers in head joints of first course of masonry immediately above embedded flashing.
1. Use specified weep/cavity vent products to form weep holes.
 2. Use wicking material to form weep holes above flashing under brick sills. Turn wicking down at lip of sill to be as inconspicuous as possible.
 3. Space weep holes formed from plastic tubing or wicking material 16 inches (400 mm) o.c.
 4. Cover cavity side of weep holes with plastic insect screening at cavities insulated with loose-fill insulation.
 5. Trim wicking material flush with outside face of wall after mortar has set.
- F. Place pea gravel in cavities as soon as practical to a height equal to height of first course above top of flashing, but not less than 2 inches (50 mm), to maintain drainage.
- G. Place cavity drainage material in airspace behind veneers to comply with configuration requirements for cavity drainage material in "Miscellaneous Masonry Accessories" Article.
- 3.12 FIELD QUALITY CONTROL
- A. Prism Test: For each type of construction provided, according to ASTM C 1314 at 7 days and at 28 days.
- 3.13 PARGING
- A. Parge exterior faces of below-grade masonry walls, where indicated, in two uniform coats to a total thickness of 3/4 inch (19 mm). Dampen wall before applying first coat, and scarify first coat to ensure full bond to subsequent coat.
- B. Use a steel-trowel finish to produce a smooth, flat, dense surface with a maximum surface variation of 1/8 inch per foot (3 mm per 300 mm). Form a wash at top of parging and a cove at bottom.

- C. Damp-cure parging for at least 24 hours and protect parging until cured.

3.14 REPAIRING, POINTING, AND CLEANING

- A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.
- B. Pointing: During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for sealant application, where indicated.
- C. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.
- D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:
 - 1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
 - 2. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain approval of sample cleaning from the Contracting Officer's Representative (COR) before proceeding with cleaning of masonry.
 - 3. Protect adjacent stone and nonmasonry surfaces from contact with cleaner by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape.
 - 4. Wet wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing surfaces thoroughly with clear water.
 - 5. Clean brick by bucket-and-brush hand-cleaning method described in BIA Technical Notes 20.
 - 6. Clean concrete masonry by applicable cleaning methods indicated in NCMA TEK 8-4A.

3.15 MASONRY WASTE DISPOSAL

- A. Salvageable Materials: Unless otherwise indicated, excess masonry materials are Contractor's property. At completion of unit masonry work, remove from Project site.
- B. Waste Disposal as Fill Material: Dispose of clean masonry waste, including excess or soil-contaminated sand, waste mortar, and broken masonry units, by crushing and mixing with fill material as fill is placed.
 - 1. Crush masonry waste to less than 4 inches (100 mm) in each dimension.
 - 2. Mix masonry waste with at least two parts of specified fill material for each part of masonry waste. Fill material is specified in Section 312000 "Earth Moving."
 - 3. Do not dispose of masonry waste as fill within 18 inches (450 mm) of finished grade.
- C. Masonry Waste Recycling: Return broken CMUs not used as fill to manufacturer for recycling.
- D. Excess Masonry Waste: Remove excess clean masonry waste that cannot be used as fill, as described above or recycled, and other masonry waste, and legally dispose of off Owner's property.
- E. CONSTRUCTION TOLERANCES

1. Variation from Plumb: For vertical lines and surfaces, do not exceed 1/4 inch in 10 feet (6 mm in 3 m), 3/8 inch in 20 feet (10 mm in 6 m), or 1/2 inch in 40 feet (13 mm in 12 m) or more. For external corners and other conspicuous lines, do not exceed 1/4 inch in 20 feet (6 mm in 6 m) or 1/2 inch in 40 feet (13 mm in 12 m) or more.
2. Variation from Level: For conspicuous lines, do not exceed 1/4 inch in 20 feet (6 mm in 6 m) or 1/2 inch in 40 feet (13 mm in 12 m) or more.
3. Measure variation from level, plumb and position shown in plan as a variation of the average plane of each stone face from level, plumb, or dimensional plane.
4. Variation in Mortar Joint Thickness: Do not vary from joint size indicated.
5. Variation in Plane between Adjacent Stones: Do not exceed one-half of the tolerance specified for the thickness of stone.
6. Space anchors not more than 16 inches (400 mm) o.c. horizontally. Install additional anchors within 12 inches (300 mm) of openings, sealant joints, and perimeter at intervals not exceeding 12 inches (300 mm).

F. POINTING

1. Prepare stone-joint surfaces for pointing with mortar by removing dust and mortar particles. Where setting mortar was removed to depths greater than surrounding areas, apply pointing mortar in layers not more than 3/8 inch (10 mm) deep until a uniform depth is formed.
2. Point stone joints by placing and compacting pointing mortar in layers of not more than 3/8 inch (10 mm) deep. Compact each layer thoroughly and allow to it become thumbprint hard before applying next layer.
3. Tool joints, when pointing mortar is thumbprint hard, with a smooth jointing tool to produce a joint profile that matches existing installation.

G. EXCESS MATERIALS AND WASTE

1. Disposal as Fill Material: Dispose of clean masonry waste, including mortar and excess or soil-contaminated sand, by crushing and mixing with fill material as fill is placed.
 - a. Crush masonry waste to less than 4 inches (100 mm) in greatest dimension.
 - b. Do not dispose of masonry waste as fill within 18 inches (450 mm) of finished grade.
2. Excess Masonry Waste: Remove excess clean masonry waste that cannot be used as fill, as described above, and other waste, and legally dispose of off Owner's property.

END OF SECTION 042000

SECTION 061000 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Wood blocking, cants, and nailers.
 - 2. Wood furring.
 - 3. Plywood backing panels.
- B. Related Requirements:
 - 1. Section 064116 "Architectural Casework."
 - 2. Section 102800 "Toilet and Bath Accessories."

1.3 DEFINITIONS

- A. Boards or Strips: Lumber of less than 2 inches nominal (38 mm actual) size in least dimension.
- B. Dimension Lumber: Lumber of 2 inches nominal (38 mm actual) size or greater but less than 5 inches nominal (114 mm actual) size in least dimension.
- C. OSB: Oriented strand board.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.
 - 1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.
 - 2. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Include physical properties of treated materials based on testing by a qualified independent testing agency.
 - 3. For fire-retardant treatments, include physical properties of treated lumber both before and after exposure to elevated temperatures, based on testing by a qualified independent testing agency according to ASTM D 5664.
 - 4. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.

1.5 INFORMATIONAL SUBMITTALS

- A. Material Certificates: For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the ALSC Board of Review.
- B. Evaluation Reports: For the following, from ICC-ES:
 - 1. Wood-preservative-treated wood.
 - 2. Fire-retardant-treated wood.

1.6 QUALITY ASSURANCE

- A. Testing Agency Qualifications: For testing agency providing classification marking for fire-retardant treated material, an inspection agency acceptable to authorities having jurisdiction that periodically performs inspections to verify that the material bearing the classification marking is representative of the material tested.
- B. Manufacturer Qualifications: A qualified manufacturer that is certified for chain of custody by an FSC-accredited certification body.
- C. Vendor Qualifications: A vendor that is certified for chain of custody by an FSC-accredited certification body.

1.7 DELIVERY, STORAGE, AND HANDLING

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

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

- A. Regional Materials: The following wood products shall be manufactured within 100 miles (160 km) of Project site from materials that have been extracted, harvested, or recovered, as well as manufactured, within 100 miles (160 km) of Project site.
 - 1. Dimension lumber.
 - 2. Laminated-veneer lumber.
 - 3. Parallel-strand lumber.
 - 4. Prefabricated wood I-joists.
 - 5. Rim boards.
- B. Certified Wood: The following wood products shall be certified as "FSC Pure" or "FSC Mixed Credit" according to FSC STD-01-001 and FSC STD-40-004.
 - 1. Dimension lumber.
 - 2. Laminated-veneer lumber.
 - 3. Parallel-strand lumber.
 - 4. Prefabricated wood I-joists.

5. Rim boards.

- C. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, comply with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Grade lumber by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
1. Factory mark each piece of lumber with grade stamp of grading agency.
 2. Dress lumber, S4S, unless otherwise indicated.
- D. Maximum Moisture Content of Lumber: 19 percent unless otherwise indicated.

2.2 WOOD-PRESERVATIVE-TREATED LUMBER

- A. Preservative Treatment by Pressure Process: AWP A U1; Use Category UC2 for interior construction not in contact with ground.
1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
- B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or that does not comply with requirements for untreated material.
- C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.
- D. Application: Treat all rough carpentry that is in contact with concrete or masonry or is located where it is exposed to high levels of moisture unless it is required to be fire-retardant-treated.
1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
 2. Wood blocking, furring, and similar concealed members in contact with masonry or concrete.

2.3 FIRE-RETARDANT-TREATED MATERIALS

1. General: Where fire-retardant-treated materials are indicated, materials shall comply with requirements in this article, that are acceptable to authorities having jurisdiction, and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.
- B. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Products with a flame-spread index of 25 or less when tested according to ASTM E 84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet (3.2 m) beyond the centerline of the burners at any time during the test.
1. Treatment shall not promote corrosion of metal fasteners.
 2. Exterior Type: Treated materials shall comply with requirements specified above for fire-retardant-treated lumber and plywood by pressure process after being subjected to accelerated weathering according to ASTM D 2898. Use for all locations requiring fire-retardant-treated lumber.
- C. Kiln-dry lumber after treatment to maximum moisture content of 19 percent.

- D. Identify fire-retardant-treated wood with appropriate classification marking of qualified testing agency.
 - 1. For exposed lumber indicated to receive a stained or natural finish, mark end or back of each piece or omit marking and provide certificates of treatment compliance issued by testing agency.
- E. Application: Treat all rough carpentry unless otherwise indicated.

2.4 DIMENSION LUMBER FRAMING

- A. Non-Load-Bearing Interior Partitions: Construction or No. 2 grade.
 - 1. Application: Blocking, furring and similar installations.
 - 2. Species:
 - a. Hem-fir (north); NLGA.
 - b. Southern pine or mixed southern pine; SPIB.
 - c. Spruce-pine-fir; NLGA.
 - d. Hem-fir; WCLIB, or WWPA.
 - e. Spruce-pine-fir (south); NeLMA, WCLIB, or WWPA.
- B. Composite Wood Products: Products shall be made using ultra-low-emitting formaldehyde resins as defined in the California Air Resources Board's "Airborne Toxic Control Measure to Reduce Formaldehyde Emissions from Composite Wood Products" or shall be made with no added formaldehyde.

2.5 MISCELLANEOUS LUMBER

- A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
 - 1. Blocking.
 - 2. Nailers.
 - 3. Rooftop equipment bases and support curbs.
 - 4. Cants.
 - 5. Furring.
- B. Dimension Lumber Items: Construction or No. 2 grade lumber of any of the following species:
 - 1. Hem-fir (north); NLGA.
 - 2. Mixed southern pine or southern pine; SPIB.
 - 3. Spruce-pine-fir; NLGA.
 - 4. Hem-fir; WCLIB or WWPA.
 - 5. Spruce-pine-fir (south); NeLMA, WCLIB, or WWPA.
- C. Concealed Boards: 19 percent maximum moisture content and any of the following species and grades:
 - 1. Mixed southern pine or southern pine; No. 2 grade; SPIB.
 - 2. Hem-fir or hem-fir (north); Construction or No. 2 Common grade; NLGA, WCLIB, or WWPA.

3. Spruce-pine-fir (south) or spruce-pine-fir; Construction or No. 2 Common grade; NeLMA, NLGA, WCLIB, or WWPA.
 4. Western woods; Construction or No. 2 Common grade; WCLIB or WWPA.
- D. For blocking not used for attachment of other construction, Utility, Stud, or No. 3 grade lumber of any species may be used provided that it is cut and selected to eliminate defects that will interfere with its attachment and purpose.
- E. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.
- F. For furring strips for installing plywood or hardboard paneling, select boards with no knots capable of producing bent-over nails and damage to paneling.

2.6 PLYWOOD BACKING PANELS

- A. Equipment Backing Panels: Plywood, DOC PS 1, Exterior, A-C, in thickness indicated or, if not indicated, not less than 3/4-inch (19-mm) nominal thickness.

2.7 FASTENERS

- A. General: Fasteners shall be of size and type indicated and shall comply with requirements specified in this article for material and manufacture.
1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M or of Type 304 stainless steel.
- B. Nails, Brads, and Staples: ASTM F 1667.
- C. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.
- D. Post-Installed Anchors: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC01 or ICC-ES AC58 as appropriate for the substrate.
1. Material: Carbon-steel components, zinc plated to comply with ASTM B 633, Class Fe/Zn 5.
 2. Material: Stainless steel with bolts and nuts complying with ASTM F 593 and ASTM F 594, Alloy Group 1 or 2 (ASTM F 738M and ASTM F 836M, Grade A1 or A4).

2.8 MISCELLANEOUS MATERIALS

- A. Flexible Flashing: Composite, self-adhesive, flashing product consisting of a pliable, butyl rubber or rubberized-asphalt compound, bonded to a high-density polyethylene film, aluminum foil, or spunbonded polyolefin to produce an overall thickness of not less than 0.025 inch (0.6 mm).
- B. Adhesives for Gluing Furring to Concrete or Masonry: Formulation complying with ASTM D 3498 that is approved for use indicated by adhesive manufacturer.
1. Adhesives shall have a VOC content of 70 g/L or less.

2. Adhesive shall comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
- C. Water-Repellent Preservative: NWWDA-tested and -accepted formulation containing 3-iodo-2-propynyl butyl carbamate, combined with an insecticide containing chlorpyrifos as its active ingredient.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- B. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry accurately to other construction. Locate furring, nailers, blocking, and similar supports to comply with requirements for attaching other construction.
- C. Install plywood backing panels by fastening to studs or other suitable supporting structure; coordinate locations with utilities requiring backing panels. Install fire-retardant-treated plywood backing panels with classification marking of testing agency exposed to view.
- D. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.
 1. Provide metal clips for fastening gypsum board or lath at corners and intersections where framing or blocking does not provide a surface for fastening edges of panels. Space clips not more than 16 inches (406 mm) o.c.
- E. Sort and select lumber so that natural characteristics do not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- F. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.
 1. Use inorganic boron for items that are continuously protected from liquid water.
 2. Use copper naphthenate for items not continuously protected from liquid water.
- G. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.
- H. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
 1. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code (IBC).
 2. ICC-ES evaluation report for fastener.
- I. Use steel common nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood. Drive nails snug but do not countersink nail heads unless otherwise indicated.

- J. For exposed work, arrange fasteners in straight rows parallel with edges of members, with fasteners evenly spaced, and with adjacent rows staggered.
 - 1. Use finishing nails unless otherwise indicated. Countersink nail heads and fill holes with wood filler.

3.2 WOOD BLOCKING, AND NAILER INSTALLATION

- A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.
- B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces unless otherwise indicated.

3.3 WOOD FURRING INSTALLATION

- A. Install level and plumb with closure strips at edges and openings. Shim with wood as required for tolerance of finish work.
- B. Furring to Receive Plywood or Hardboard Paneling: Install 1-by-3-inch nominal- (19-by-63-mm actual-) size furring horizontally or vertically at not more than 24 inches (610 mm) 600 mm o.c.
- C. Furring to Receive Gypsum Board: Install 1-by-2-inch nominal- (19-by-38-mm actual-) size furring vertically at 16 inches (406 mm) o.c.

3.4 PROTECTION

- A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.
- B. Protect rough carpentry from weather. If, despite protection, rough carpentry becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION 061000

SECTION 07920 - JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes joint sealants for the applications indicated in the Joint-Sealant Schedule at the end of Part 3.
- B. Related Sections include the following:
 - 1. Section 07841, "Through-Penetration Fire Stop Assemblies".
 - 2. Section 084413 "Glazed Aluminum Curtain Walls And Windows"
 - 3. Section 088000, "Glazing"
 - 4. Section 092900, "Gypsum Board Assemblies".
 - 5. Section 093013, "Ceramic Tile".
 - 6. Section 099123 "Painting"
 - 7. Division 15, "Mechanical".

1.3 PERFORMANCE REQUIREMENTS

- A. Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.
- B. Provide joint sealants for interior applications that establish and maintain airtight and water-resistant continuous joint seals without staining or deteriorating joint substrates.

1.4 SUBMITTALS

- A. Product Data: For each joint-sealant product indicated.
- B. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's authorized Installer who is approved or licensed for installation of elastomeric sealants required for this Project.
- B. Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.

1.6 PROJECT CONDITIONS

- A. Do not proceed with installation of joint sealants under the following conditions:

1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F (5 deg C).
2. When joint substrates are wet.
3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
4. Contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products listed in other Part 2 articles.

2.2 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer, based on testing and field experience.
- B. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

2.3 ELASTOMERIC JOINT SEALANTS

- A. Elastomeric Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied chemically curing sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.
- B. Stain-Test-Response Characteristics: Where elastomeric sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.
- C. Multicomponent Nonsag Polysulfide Sealant ES-#1:
 1. Available Products:
 - a. Pacific Polymers, Inc.; Elasto-Seal 227 Type II (Gun Grade).
 - b. Pecora Corporation; Synthacalk GC-2+.
 - c. Polymeric Systems Inc.; PSI-350.
 - d. PolySpec Corp.; T-2235-M.
 - e. PolySpec Corp.; T-2282.
 - f. PolySpec Corp.; Thiokol 2P.
 - g. Sonneborn, Division of ChemRex Inc.; Sonolastic Polysulfide Sealant.
 2. Type and Grade: M (multicomponent) and NS (nonsag).
 3. Class: 25.
 4. Uses Related to Exposure: T (traffic) and NT (nontraffic).
 5. Uses Related to Joint Substrates: M, G, A, and, as applicable to joint substrates indicated, O.

- a. Use O Joint Substrates: Aluminum coated with a high-performance coating, galvanized steel brick and ceramic tile.
- D. Single-Component Neutral- and Basic-Curing Silicone Sealant ES-#2:
 1. Available Products:
 - a. ChemRex; Sonneborn OmniPlus.
 - b. Dow Corning; 790.
 - c. Tremco; Spectrem (Basic).
 2. Type and Grade: S (single component) and NS (nonsag).
 3. Class: 100/50.
 4. Use Related to Exposure: NT (nontraffic).
 5. Uses Related to Joint Substrates: M, G, A, and, as applicable to joint substrates indicated, O.
 - a. Use O Joint Substrates: Aluminum coated with a high-performance coating, galvanized steel, brick and ceramic tile.
 6. Stain-Test-Response Characteristics: Nonstaining to porous substrates per ASTM C 1248.
- E. Single-Component Mildew-Resistant Neutral-Curing Silicone Sealant ES-#3:
 1. Available Products:
 - a. ChemRex; Sonneborn Omniseal.
 - b. Pecora Corporation; 898.
 - c. Tremco; Tremsil 600 White.
 2. Type and Grade: S (single component) and NS (nonsag).
 3. Class: 25.
 4. Use Related to Exposure: NT (nontraffic).
 5. Uses Related to Joint Substrates: M, G, A, and, as applicable to joint substrates indicated, O.
 - a. Use O Joint Substrates: Aluminum coated with a high-performance coating, galvanized steel, brick and ceramic tile.
- F. Multicomponent Nonsag Urethane Sealant ES-#4:
 1. Available Products:
 - a. Pecora Corporation; Dynatrol II.
 - b. Tremco; Dymeric 511.
 - c. Tremco; Vulkem 922.
 2. Type and Grade: M (multicomponent) and NS (nonsag).
 3. Class: 50.
 4. Uses Related to Exposure: NT (nontraffic) and T (traffic).
 5. Uses Related to Joint Substrates: M, A, and, as applicable to joint substrates indicated, O.
 - a. Use O Joint Substrates: Aluminum coated with a high-performance coating, galvanized steel, brick and ceramic tile.

G. Multicomponent Nonsag Urethane Sealant ES-#5:

1. Available Products:

- a. Schnee-Morehead, Inc.; Permthane SM 7200.
- b. Sika Corporation, Inc.; Sikaflex - 2c NS TG.
- c. Sonneborn, Division of ChemRex Inc.; NP 2.
- d. Tremco; Vulkem 227.
- e. Tremco; Vulkem 322 DS.

2. Type and Grade: M (multicomponent) and NS (nonsag).

3. Class: 25.

4. Uses Related to Exposure: T (traffic) and NT (nontraffic).

5. Uses Related to Joint Substrates: M, G, A, and, as applicable to joint substrates indicated, O.

- a. Use O Joint Substrates: Aluminum coated with a high-performance coating, galvanized steel, brick and ceramic tile.

H. For sealants exposed to clean room environments, including plenum areas, comply with Section 13030, Clean Room Construction General Requirements.

2.4 LATEX JOINT SEALANTS

A. Latex Sealant LS-#1: Comply with ASTM C 834, Type P, Grade NF.

B. Available Products:

1. Bostik Findley; Chem-Calk 600.
2. Pecora Corporation; AC-20+.
3. Schnee-Morehead, Inc.; SM 8200.
4. Sonneborn, Division of ChemRex Inc.; Sonolac.
5. Tremco; Tremflex 834.

2.5 BUTYL JOINT SEALANTS

A. Butyl Sealant BS-#1: Comply with ASTM C1085.

B. Available Products:

1. Bostik Findley; Chem-Calk 300.
2. Pecora Corporation; BC158.
3. Polymeric Systems, Inc. PSI-301.

2.6 JOINT-SEALANT BACKING

A. General: Provide sealant backings of material and type that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

B. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin), O (open-cell material), B (bicellular material with a surface skin), or any of the preceding types, as

approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance:

- C. Elastomeric Tubing Sealant Backings: Neoprene, butyl, EPDM, or silicone tubing complying with ASTM D 1056, nonabsorbent to water and gas, and capable of remaining resilient at temperatures down to minus 26 deg F (minus 32 deg C). Provide products with low compression set and of size and shape to provide a secondary seal, to control sealant depth, and to otherwise contribute to optimum sealant performance.
- D. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

2.7 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
- C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
 - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
 - 2. Clean porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after

cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:

- a. Concrete.
 - b. Masonry.
 - c. Unglazed surfaces of ceramic tile.
3. Remove laitance and form-release agents from concrete.
 4. Clean nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:
 - a. Metal.
 - b. Glass.
 - c. Porcelain enamel.
 - d. Glazed surfaces of ceramic tile.
- B. Joint Priming: Prime joint substrates, where recommended in writing by joint-sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
1. Do not leave gaps between ends of sealant backings.
 2. Do not stretch, twist, puncture, or tear sealant backings.
 3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.
- D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
1. Place sealants so they directly contact and fully wet joint substrates.
 2. Completely fill recesses in each joint configuration.
 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

- F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
1. Remove excess sealant from surfaces adjacent to joints.
 2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
 3. Provide concave joint configuration per Figure 5A in ASTM C 1193, unless otherwise indicated.

3.4 CLEANING

- A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.5 PROTECTION

- A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

3.6 JOINT-SEALANT SCHEDULE

- A. Joint-Sealant Application JS-#1: Exterior vertical and horizontal nontraffic construction joints in cast-in-place concrete.
1. Joint Sealant: Multicomponent nonsag polysulfide sealant, single-component neutral- and basic-curing silicone sealant, multi-component nonsag urethane sealant or single-component nonsag urethane sealant (ES-#1, ES-#2, ES-#4 or ES-#5).
 2. Joint-Sealant Color: As selected by Architect from manufacturer's full range. More than one color may be selected.
- B. Joint-Sealant Application JS-#2: Exterior vertical control and expansion joints in unit masonry.
1. Joint Sealant Multicomponent nonsag polysulfide sealant, multicomponent nonsag urethane sealant or single-component nonsag urethane sealant (ES-#1, ES-#4 or ES-#5).
 2. Joint-Sealant Color: As selected by Architect from manufacturer's full range. More than one color may be selected.
- C. Joint-Sealant Application JS-#3: Exterior perimeter joints between masonry and frames of doors, curtainwall and metal wall panels.
1. Joint Sealant: Multicomponent or single-component nonsag urethane sealant. (ES-#4).
 2. Joint-Sealant Color: As selected by Architect from manufacturer's full range. More than one color may be selected.
- D. Joint-Sealant Application JS-#4: Exterior control and expansion joints in horizontal traffic surfaces of concrete, brick pavers and concrete pavers.

1. Joint Sealant: Multicomponent nonsag polysulfide sealant (ES-#1).
 2. Joint-Sealant Color: As selected by Architect from manufacturer's full range. More than one color may be selected.
- E. Joint-Sealant Application JS-#5: Interior joints between plumbing fixtures and adjoining walls, floors, and counters.
1. Joint Sealant: Single-component mildew-resistant neutral-curing silicone sealant (ES-#3).
 2. Joint-Sealant Color: White.
- F. Joint-Sealant Application JS-#6: Vertical joints on exposed surfaces of interior unit masonry and concrete walls and partitions.
1. Joint Sealant: Multicomponent nonsag polysulfide sealant, single-component neutral- and basic-curing silicone sealant, multicomponent nonsag urethane sealant or single-component nonsag urethane sealant (ES-#1, ES-#2, ES-#4 or ES-#5).
 2. Joint-Sealant Color: As selected by Architect from manufacturer's full range. More than one color may be selected.
- G. Joint-Sealant Application JS-#7: Perimeter joints between interior wall surfaces and frames of interior doors, windows and elevator entrances.
1. Joint Sealant: Latex sealant (LS-#1).
 2. Joint-Sealant Color: As selected by Architect from manufacturer's full range. More than one color may be selected.
- H. Joint Sealant Application JS#8: Joints between exterior aluminum expansion joint retainers and adjacent masonry or metal panel construction where sealant will not be exposed to view.
1. Joint Sealant: Butyl sealant (BS#1).
 2. Color: Manufacturer's standard.

END OF SECTION 07920

SECTION 081113 - HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes:
 - 1. Interior standard steel doors and frames.
 - 2. Privacy file for windows.
- B. Related Requirements:
 - 1. Section 087100 "Door Hardware"

1.3 DEFINITIONS

- A. Minimum Thickness: Minimum thickness of base metal without coatings according to NAAMM-HMMA 803 or SDI A250.8.

1.4 COORDINATION

- A. Coordinate anchorage installation for hollow-metal frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.
- B. Coordinate requirements for installation of door hardware, electrified door hardware, and access control and security systems.

1.5 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.6 ACTION SUBMITTALS

- A. Hollow metal door and frame submittals will be reviewed concurrently with wood sound control door assemblies, door hardware, automatic door operator, and other related submittals. Review will not begin until all submittals have been received and are determined to be complete.
- B. Product Data: For each type of product.
 - 1. Include construction details, material descriptions, core descriptions, fire-resistance ratings, and finishes.

- C. Product Schedule: For hollow-metal doors and frames, prepared by or under the supervision of supplier, using same reference numbers for details and openings as those on Drawings. Coordinate with final door hardware schedule. Indicate opening number/location, size, thickness, profile, rating, installation and anchorage details, glazing, swing, and hardware set.

1.7 INFORMATIONAL SUBMITTALS

- A. Product Test Reports: For each type of fire rated hollow-metal door and frame assembly, for tests performed by a qualified testing agency.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver hollow-metal doors and frames palletized, packaged, or crated to provide protection during transit and Project-site storage. Do not use nonvented plastic.
 - 1. Provide additional protection to prevent damage to factory-finished units.
- B. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.
- C. Store hollow-metal doors and frames vertically under cover at Project site with head up. Place on minimum 4-inch- (102-mm-) high wood blocking. Provide minimum 1/4-inch (6-mm) space between each stacked door to permit air circulation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Hollow metal doors and frames shall be from a single manufacturer. Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - 1. Ceco Door; ASSA ABLOY.
 - 2. Curries Company; ASSA ABLOY.
 - 3. Custom Metal Products.
 - 4. Premier Products, Inc.
 - 5. Republic Doors and Frames.
 - 6. Steelcraft; an Allegion brand.

2.2 PERFORMANCE REQUIREMENTS

2.3 EXTERIOR STANDARD STEEL DOORS AND FRAMES

- A. Construct hollow-metal doors and frames to comply with standards indicated for materials, fabrication, hardware locations, hardware reinforcement, tolerances, and clearances, and as specified.

- B. Extra-Heavy-Duty Doors and Frames: SDI A250.8, Level 3; SDI A250.4, Level A. At all locations.

1. Doors:

- a. Type: As indicated in the Door and Frame Schedule.
- b. Thickness: 1-3/4 inches (44.5 mm).
- c. Edge Construction: Model 2, Seamless.
- d. Edge Bevel: Bevel lock edge 1/8 inch in 2 inches (3.2 mm in 51 mm).
- e. Core: Vertical steel stiffener.

2. Frames:

- a. Materials: Metallic-coated steel sheet, minimum thickness of 0.053 inch (1.3 mm) and, where indicated, stainless steel sheet, minimum thickness of 0.053 inch (1.3 mm).
- b. Construction: Full profile welded.

3. Exposed Finish: Factory prime for field painting.

2.4 FRAME ANCHORS

A. Jamb Anchors:

1. Type: Anchors of minimum size and type required by applicable door and frame standard, and suitable for performance level indicated.
2. Quantity: Minimum of three anchors per jamb, with one additional anchor for frames with no floor anchor. Provide one additional anchor for each 24 inches (610 mm) of frame height above 7 feet (2.1 m).
3. Postinstalled Expansion Anchor: Minimum 3/8-inch- (9.5-mm-) diameter bolts with expansion shields or inserts, with manufacturer's standard pipe spacer.

B. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor.

C. Material: ASTM A 879/A 879M, Commercial Steel (CS), 04Z (12G) coating designation; mill phosphatized.

1. For anchors built into exterior walls, steel sheet complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M; hot-dip galvanized according to ASTM A 153/A 153M, Class B.

2.5 MATERIALS

- A. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.
- B. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.
- C. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B.
- D. Stainless-Steel Sheet: ASTM A 240/A 240M or ASTM A 666, Type 304 or Type 316L.

- E. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.
- F. Power-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hollow-metal frames of type indicated.
- G. Mineral-Fiber Insulation: ASTM C 665, Type I (blankets without membrane facing); consisting of fibers manufactured from slag or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively; passing ASTM E 136 for combustion characteristics.
- H. Glazing: Comply with requirements in Section 088000 "Glazing."

2.6 FABRICATION

- A. Door Astragals: Provide overlapping astragal on one leaf of pairs of doors where required by NFPA 80 for fire-performance rating or where indicated. Extend minimum 3/4 inch (19 mm) beyond edge of door on which astragal is mounted or as required to comply with published listing of qualified testing agency.
- B. Hollow-Metal Frames: Fabricate in one piece except where handling and shipping limitations require multiple sections. Where frames are fabricated in sections, provide alignment plates or angles at each joint, fabricated of metal of same or greater thickness as frames.
 - 1. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
 - 2. Door Silencers: Except on weather-stripped frames, drill stops to receive door silencers as follows. Keep holes clear during construction.
 - a. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.
 - b. Double-Door Frames: Drill stop in head jamb to receive two door silencers.
- C. Hardware Preparation: Factory prepare hollow-metal doors and frames to receive templated mortised hardware, and electrical wiring; include cutouts, reinforcement, mortising, drilling, and tapping according to SDI A250.6, the Door Hardware Schedule, and templates.
 - 1. Reinforce doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.
 - 2. Comply with BHMA A156.115 for preparing hollow-metal doors and frames for hardware.

2.7 STEEL FINISHES

- A. Prime Finish: Clean, pretreat, and apply manufacturer's standard primer.
 - 1. Shop Primer: Manufacturer's standard, fast-curing, lead- and chromate-free primer complying with SDI A250.10; recommended by primer manufacturer for substrate; compatible with substrate and field-applied coatings despite prolonged exposure.

2.8 PRIVACY FILM FOR WINDOWS

- A. As manufactured by 3M or approved equal, matte translucent finish privacy film.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Remove welded-in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces. Touch up factory-applied finishes where spreaders are removed.
- B. Drill and tap doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.

3.2 INSTALLATION

- A. General: Install hollow-metal doors and frames plumb, rigid, properly aligned, and securely fastened in place. Comply with approved Shop Drawings and with manufacturer's written instructions.
- B. Hollow-Metal Frames: Comply with SDI A250.11.
 - 1. Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces without damage to completed Work.
 - a. Where frames are fabricated in sections, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces. Touch-up finishes.
 - b. Install frames with removable stops located on secure side of opening.
 - 2. Fire-Rated Openings: Install frames according to NFPA 80.
 - 3. Floor Anchors: Secure with postinstalled expansion anchors.
 - 4. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with grout or mortar.
 - 5. In-Place Concrete or Masonry Construction: Secure frames in place with postinstalled expansion anchors. Countersink anchors, and fill and make smooth, flush, and invisible on exposed faces.
 - 6. Installation Tolerances: Adjust hollow-metal frames to the following tolerances:
 - a. Squareness: Plus or minus 1/16 inch (1.6 mm), measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
 - b. Alignment: Plus or minus 1/16 inch (1.6 mm), measured at jambs on a horizontal line parallel to plane of wall.
 - c. Twist: Plus or minus 1/16 inch (1.6 mm), measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
 - d. Plumbness: Plus or minus 1/16 inch (1.6 mm), measured at jambs at floor.
- C. Hollow-Metal Doors: Fit and adjust hollow-metal doors accurately in frames, within clearances specified below.
 - 1. Non-Fire-Rated Steel Doors: Comply with SDI A250.8.

3.3 CLEANING AND TOUCHUP

- A. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying, rust-inhibitive primer.
- B. Metallic-Coated Surface Touchup: Clean abraded areas and repair with galvanizing repair paint according to manufacturer's written instructions.
- C. Touchup Painting: Cleaning and touchup painting of abraded areas of paint are specified in painting Sections.

END OF SECTION 081113

SECTION 081416 - FLUSH WOOD DOORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Seven-ply flush wood veneer-faced doors for transparent finish.
 - 2. Lite Frames
 - 3. Factory finishing flush wood doors.
 - 4. Factory fitting flush wood doors to frames and factory machining for hardware.
- B. Related Requirements:
 - 1. Section 064116 "Plastic Laminate Faced Architectural Cabinets".
 - 2. Section 088000 "Glazing" for glass view panels in flush wood doors.

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product, including the following:
 - 1. Door core materials and construction.
 - 2. Door edge construction
 - 3. Door face type and characteristics.
 - 4. Factory- finishing specifications.
- B. Shop Drawings: Indicate location, size, and hand of each door; elevation of each type of door; construction details not covered in Product Data; and the following:
 - 1. Door schedule indicating door and frame location, type, size, fire protection rating, and swing.
 - 2. Door elevations, dimension and locations of hardware, lite and louver cutouts, and glazing thicknesses.
 - 3. Details of electrical raceway and preparation for electrified hardware, access control systems, and security systems.
 - 4. Dimensions and locations of blocking for hardware attachment.
 - 5. Dimensions and locations of mortises and holes for hardware.
 - 6. Clearances and undercuts.
 - 7. Doors to be factory finished and application requirements.
 - 8. Apply AWI Quality Certification Program label to Shop Drawings.

C. Samples for Verification:

1. Factory finishes applied to actual door face materials, approximately 8 by 10 inches (200 by 250 mm), for each material and finish. For each wood species and transparent finish, provide set of three Samples showing typical range of color and grain to be expected in finished Work.
2. Corner sections of doors, approximately 8 by 10 inches (200 by 250 mm), with door faces and edges representing actual materials to be used.
3. Frames for light openings, 6 inches (150 mm) long, for each material, type, and finish required.
4. Glazing for doors with glass inserts, 12" X 12"

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For door inspector.

1. Fire-Rated Door Inspector: Submit documentation of compliance with NFPA 80, Section 5.2.3.1.
2. Egress Door Inspector: Submit documentation of compliance with NFPA 101, Section 7.2.1.15.4.
3. Submit copy of DHI's Fire and Egress Door Assembly Inspector (FDAI) certificate.

B. Field quality-control reports.

C. Sample Warranty: For special warranty.

1.6 CLOSEOUT SUBMITTALS

A. Special warranties.

B. Quality Standard Compliance Certificates: AWI Quality Certification Program certificates.

C. Record Documents: For fire-rated doors, list of door numbers and applicable room name and number to which door accesses.

1.7 QUALITY ASSURANCE

A. Manufacturer's Certification: Licensed participant in AWI's Quality Certification Program.

B. Fire-Rated Door Inspector Qualifications: Inspector for field quality-control inspections of fire-rated door assemblies shall comply with qualifications set forth in NFPA 80, Section 5.2.3.1 and the following:

1. DHI's Fire and Egress Door Assembly Inspector (FDAI) certification.

C. Egress Door Inspector Qualifications: Inspector for field quality-control inspections of egress door assemblies shall comply with qualifications set forth in NFPA 101, Section 7.2.1.15.4 and the following:

1. DHI's Fire and Egress Door Assembly Inspector (FDAI) certification.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Comply with requirements of referenced standard and manufacturer's written instructions.
- B. Package doors individually in cardboard cartons, and wrap bundles of doors in plastic sheeting.
- C. Mark each door on top and bottom rail with opening number used on Shop Drawings.

1.9 FIELD CONDITIONS

- A. Environmental Limitations: Do not deliver or install doors until spaces are enclosed and weathertight, wet-work in spaces is complete and dry, and HVAC system is operating and maintaining temperature and relative humidity at levels designed for building occupants for the remainder of construction period.
- B. Environmental Limitations: Do not deliver or install doors until building is enclosed and weathertight, wet work is complete, and HVAC system is operating and maintaining temperature between 60 and 90 deg F (16 and 32 deg C) and relative humidity between 43 and 70 percent during remainder of construction period.

1.10 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace doors that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Delamination of veneer.
 - b. Warping (bow, cup, or twist) more than 1/4 inch (6.4 mm) in a 42-by-84-inch (1067-by-2134-mm) section.
 - c. Telegraphing of core construction in face veneers exceeding 0.01 inch in a 3-inch (0.25 mm in a 76.2-mm) span.
 - 2. Warranty shall also include installation and finishing that may be required due to repair or replacement of defective doors.
 - 3. Warranty Period for Interior Doors: Life of installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Source Limitations: Obtain flush wood doors from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

- A. Fire-Rated Wood Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency acceptable to authorities having jurisdiction, for fire-protection ratings and temperature-rise limits indicated on Drawings, based on testing at positive pressure in accordance with or NFPA 252.

1. Temperature-Rise Limit: For rated doors, provide doors that have a maximum transmitted temperature end point of not more than 450 deg F (250 deg C) above ambient after 30 minutes of standard fire-test exposure.
- B. Smoke- and Draft-Control Door Assemblies: Listed and labeled for smoke and draft control by a qualified testing agency acceptable to authorities having jurisdiction, based on testing in accordance with UL 1784 and installed in compliance with NFPA 105.

2.3 FLUSH WOOD DOORS, GENERAL

- A. Quality Standard: In addition to requirements specified, comply with AWI/AWMAC/WI's "Architectural Woodwork Standards."
 1. Provide labels and certificates from AWI certification program indicating that doors comply with requirements of grades specified.
 - a. Contractor shall register the Work under this Section with the AWI Quality Certification Program at www.awiqcp.org or by calling 855-345-0991.
 2. The Contract Documents contain requirements that are more stringent than the referenced quality standard. Comply with the Contract Documents in addition to those of the referenced quality standard.

2.4 SEVEN-PLY FLUSH WOOD VENEER-FACED DOORS FOR TRANSPARENT FINISH

- A. Interior Doors:
 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. ABS-American Building Supply, Inc.
 - b. General Veneer Manufacturing Co.
 - c. Haley Brothers, Inc.
 - d. Lambton Doors.
 - e. Oregon Door.
 - f. Vancouver Door Company.
 2. Performance Grade: ANSI/WDMA I.S. 1A Heavy Duty.
 3. Performance Grade:
 - a. ANSI/WDMA I.S. 1A Heavy Duty unless otherwise indicated on Drawings.
 4. Architectural Woodwork Standards Grade: Premium.
 5. Faces: two-ply wood panel with wood veneer not less than 1/50 inch (0.508 mm) thick.
 - a. Species: Select white birch.
 - b. Cut: Rift cut.
 - c. Match between Veneer Leaves: Book match.
 - d. Assembly of Veneer Leaves on Door Faces: Center-balance match.
 - e. Pair and Set Match: Provide for doors hung in same opening.
 - f. Room Match: Provide door faces of compatible color and grain within each separate room or area of building.

6. Exposed Vertical and Top Edges: Same species as faces or a compatible species - Architectural Woodwork Standards edge Type A.
 - a. Fire-Rated Single Doors: Provide edge construction with intumescent seals concealed by outer stile. Comply with specified requirements for exposed vertical edges.
 - b. Fire-Rated Pairs of Doors: Provide fire-retardant stiles that are listed and labeled for applications indicated without formed-steel edges and astragals. Provide stiles with concealed intumescent seals. Comply with specified requirements for exposed edges.
 - c. Fire-Rated Pairs of Doors: Provide formed-steel edges and astragals with intumescent seals.
 - 1) Finish steel edges and astragals with baked enamel same color as doors.
 - 2) Finish steel edges and astragals to match door hardware (locksets or exit devices).
 - d. Mineral-Core Doors: At hinge stiles, provide laminated-edge construction with improved screw-holding capability and split resistance. Comply with specified requirements for exposed edges.
 - 1) Screw-Holding Capability: 550 lbf (2440 N) in accordance with WDMA T.M. 10.
7. Core for Non-Fire-Rated Doors: Either glued wood stave or WDMA I.S. 10 structural composite lumber.
8. Core for Fire-Rated Doors: As required to achieve fire-protection rating indicated on Drawings.
 - a. Blocking for Mineral-Core Doors: Provide composite blocking with improved screw-holding capability approved for use in doors of fire-protection ratings indicated on Drawings as needed to eliminate through-bolting hardware.
9. Construction: Seven plies, hot-pressed or cold-pressed, bonded or unbonded.

2.5 FABRICATION

- A. Factory fit doors to suit frame-opening sizes indicated.
 1. Comply with clearance requirements of referenced quality standard for fitting unless otherwise indicated.
 2. Comply with NFPA 80 requirements for fire-rated doors.
- B. Factory machine doors for hardware that is not surface applied.
 1. Locate hardware to comply with DHI-WDHS-3.
 2. Comply with final hardware schedules, door frame Shop Drawings, ANSI/BHMA-156.115-W, and hardware templates.
 3. Coordinate with hardware mortises in metal frames, to verify dimensions and alignment before factory machining.
 4. For doors scheduled to receive electrified locksets, provide factory-installed raceway and wiring to accommodate specified hardware.
 5. Metal Astragals: Factory machine astragals and formed-steel edges for hardware for pairs of fire-rated doors.

- C. Openings: Factory cut and trim openings through doors.
 - 1. Light Openings: Trim openings with moldings of material and profile indicated.
 - 2. Glazing: Factory install glazing in doors indicated to be factory finished. Comply with applicable requirements in Section 088000 "Glazing."

2.6 FACTORY FINISHING

- A. Comply with referenced quality standard for factory finishing.
 - 1. Complete fabrication, including fitting doors for openings and machining for hardware that is not surface applied, before finishing.
 - 2. Finish faces, all four edges, edges of cutouts, and mortises.
 - 3. Stains and fillers may be omitted on top and bottom edges, edges of cutouts, and mortises.
- B. Factory finish doors.
- C. Transparent Finish:
 - 1. Architectural Woodwork Standards Grade: Premium.
 - 2. Finish: Architectural Woodwork Standards System-11, Polyurethane, Catalyzed.
 - 3. Staining: As selected by Architect from manufacturer's full range, to match existing in the same facility's adjacent areas.
 - 4. Effect: Filled finish.
 - 5. Sheen: Satin.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine doors and installed door frames, with Installer present, before hanging doors.
 - 1. Verify that installed frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with level heads and plumb jambs.
 - 2. Reject doors with defects.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Hardware: For installation, see Section 087100 "Door Hardware."
- B. Install doors to comply with manufacturer's written instructions and referenced quality standard, and as indicated.
- C. Install frames level, plumb, true, and straight.
 - 1. Shim as required with concealed shims. Install level and plumb to a tolerance of 1/8 inch in 96 inches (3.2 mm in 2400 mm).
 - 2. Anchor frames to anchors or blocking built in or directly attached to substrates.

- a. Secure with countersunk, concealed fasteners and blind nailing.
 - b. Use fine finishing nails for exposed fastening, countersunk and filled flush with woodwork.
 - 1) For factory-finished items, use filler matching finish of items being installed.
 - 3. Install fire-rated doors and frames in accordance with NFPA 80.
 - 4. Install smoke- and draft-control doors in accordance with NFPA 105.
- D. Job-Fitted Doors:
- 1. Align and fit doors in frames with uniform clearances and bevels as indicated below.
 - a. Do not trim stiles and rails in excess of limits set by manufacturer or permitted for fire-rated doors.
 - 2. Machine doors for hardware.
 - 3. Seal edges of doors, edges of cutouts, and mortises after fitting and machining.
 - 4. Clearances:
 - a. Provide 1/8 inch (3.2 mm) at heads, jambs, and between pairs of doors.
 - b. Provide 1/8 inch (3.2 mm) from bottom of door to top of decorative floor finish or covering unless otherwise indicated on Drawings.
 - c. Where threshold is shown or scheduled, provide 1/4 inch (6.4 mm) from bottom of door to top of threshold unless otherwise indicated.
 - d. Comply with NFPA 80 for fire-rated doors.
 - 5. Bevel non-fire-rated doors 1/8 inch in 2 inches (3-1/2 degrees) at lock and hinge edges.
 - 6. Bevel fire-rated doors 1/8 inch in 2 inches (3-1/2 degrees) at lock edge; trim stiles and rails only to extent permitted by labeling agency.
- E. Factory-Fitted Doors: Align in frames for uniform clearance at each edge.
- F. Factory-Finished Doors: Restore finish before installation if fitting or machining is required at Project site.

3.3 FIELD QUALITY CONTROL

- A. Inspections:
- 1. Provide inspection of installed Work through AWI's Quality Certification Program, certifying that wood doors and frames, including installation, comply with requirements of AWI/AWMCA/WI's "Architectural Woodwork Standards" for the specified grade.
 - 2. Fire-Rated Door Inspections: Inspect each fire-rated door in accordance with NFPA 80, Section 5.2.
 - 3. Egress Door Inspections: Inspect each door equipped with panic hardware, each door equipped with fire exit hardware, each door located in an exit enclosure, each electrically controlled egress door, and each door equipped with special locking arrangements in accordance with NFPA 101, Section 7.2.1.15.
- B. Repair or remove and replace installations where inspections indicate that they do not comply with specified requirements.

- C. Reinspect repaired or replaced installations to determine if replaced or repaired door assembly installations comply with specified requirements.
- D. Prepare and submit separate inspection report for each fire-rated door assembly indicating compliance with each item listed in NFPA 80 and NFPA 101.

3.4 ADJUSTING

- A. Operation: Rehang or replace doors that do not swing or operate freely.
- B. Finished Doors: Replace doors that are damaged or that do not comply with requirements. Doors may be repaired or refinished if Work complies with requirements and shows no evidence of repair or refinishing.

END OF SECTION 081416

SECTION 087100 - DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Mechanical door hardware for the following:
 - a. Swinging doors.
 - 2. Cylinders for door hardware specified in other Sections.
- B. Related Requirements:
 - 1. Section 081113 "Hollow Metal Doors and Frames".

1.3 COORDINATION

- A. Installation Templates: Distribute for doors, frames, and other work specified to be factory prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.
- B. Security: Coordinate installation of door hardware, keying, and access control with Owner's security consultant.
- C. Electrical System Roughing-In: Coordinate layout and installation of electrified door hardware with connections to power supplies and building safety and security systems.
- D. Existing Openings: Where hardware components are scheduled for application to existing construction or where modifications to existing door hardware are required, field verify existing conditions and coordinate installation of door hardware to suit opening conditions and to provide proper door operation.

1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.
 - 1. Conference participants shall include Installer's Architectural Hardware Consultant.
- B. Keying Conference: Conduct conference at Project site.
 - 1. Conference participants shall include Installer's Architectural Hardware Consultant and the Owner's lock and hardware manager.

2. Incorporate conference decisions into keying schedule after reviewing door hardware keying system including, but not limited to, the following:
 - a. Preliminary key system schematic diagram.
 - b. Requirements for key control system.
 - c. Requirements for access control.
 - d. Address for delivery of keys.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Door Hardware Schedule: Prepared by or under the supervision of Installer's Architectural Hardware Consultant. Coordinate door hardware schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
 1. Submittal Sequence:
 - a. Door hardware submittals will be reviewed concurrently with hollow metal door and frame, wood sound control door assemblies, aluminum entrance and storefront, automatic door operator, and other related submittals. Review will not begin until all submittals have been received and are determined to be complete.
 - b. Submit door hardware schedule concurrent with submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate the fabrication of other work that is critical in Project construction schedule.
 2. Format: Use same scheduling sequence and format and use same door numbers as in door hardware schedule in the Contract Documents.
 3. Content: Include the following information:
 - a. Identification number, location, hand, fire rating, size, and material of each door and frame.
 - b. Locations of each door hardware set, cross-referenced to Drawings on floor plans and to door and frame schedule.
 - c. Complete designations, including name and manufacturer, type, style, function, size, quantity, function, and finish of each door hardware product.
 - d. Description of electrified door hardware interfaces with other building control systems.
 - e. Fastenings and other installation information.
 - f. Explanation of abbreviations, symbols, and designations contained in door hardware schedule.
 - g. Mounting locations for door hardware.
 - h. List of related door devices specified in other Sections for each door and frame.
- C. Keying Schedule: Prepared by or under the supervision of Installer's Architectural Hardware Consultant, detailing Owner's final keying instructions for locks. Include door designations that are coordinated with the Contract Documents and the Owner's final door number designations.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer and Architectural Hardware Consultant.
- B. Product Certificates: For each type of electrified door hardware.

1. Certify that door hardware for use on each type and size of labeled fire-rated doors complies with listed fire-rated door assemblies.
- C. Product Test Reports: For compliance with accessibility requirements, for tests performed by manufacturer and witnessed by a qualified testing agency, for door hardware on doors located in accessible routes.
- D. Field quality-control reports.
- E. Sample Warranty: For special warranty.

1.7 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For each type of door hardware to include in maintenance manuals.
- B. Schedules: Final keying schedule.

1.8 QUALITY ASSURANCE

- A. Installer Qualifications: Supplier of products and an employer of workers trained and approved by product manufacturers and of an Architectural Hardware Consultant who is available during the course of the Work to consult Contractor, Architect, and Owner about door hardware and keying.
 1. Warehousing Facilities: In Project's vicinity.
 2. Scheduling Responsibility: Preparation of door hardware and keying schedule.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up for door hardware delivered to Project site.
- B. Tag each item or package separately with identification coordinated with the final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package.
- C. Deliver keys to manufacturer of key control system for subsequent delivery to Owner.
- D. Deliver keys and permanent cores to Owner by registered mail or overnight package service.

1.10 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.
 1. Failures include, but are not limited to, the following:
 - a. Structural failures including excessive deflection, cracking, or breakage.
 - b. Faulty operation of doors and door hardware.
 - c. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use.

2. Warranty Period: Three years from date of Substantial Completion unless otherwise indicated below:
 - a. Manual Closers: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Source Limitations: Obtain each type of door hardware from single manufacturer.
 1. Provide electrified door hardware from same manufacturer as mechanical door hardware unless otherwise indicated. Manufacturers that perform electrical modifications and that are listed by a testing and inspecting agency acceptable to authorities having jurisdiction are acceptable.

2.2 PERFORMANCE REQUIREMENTS

- A. Accessibility Requirements: For door hardware on doors in an accessible route, comply with the DOJ's "2010 ADA Standards for Accessible Design", the ABA standards of the Federal agency having jurisdiction, ICC A117.1 and the Maryland Accessibility Code.
 1. Provide operating devices that do not require tight grasping, pinching, or twisting of the wrist and that operate with a force of not more than 5 lbf (22.2 N).
 2. Comply with the following maximum opening-force requirements:
 - a. Interior, Non-Fire-Rated Hinged Doors: 5 lbf (22.2 N) applied perpendicular to door.
 - b. Fire Doors: Minimum opening force allowable by authorities having jurisdiction.
 3. Bevel raised thresholds with a slope of not more than 1:2. Provide thresholds not more than 1/2 inch (13 mm) high.
 4. Adjust door closer sweep periods so that, from an open position of 90 degrees, the door will take at least 5 seconds to move to a position of 12 degrees from the latch.
 5. Adjust spring hinges so that, from an open position of 70 degrees, the door will take at least 1.5 seconds to move to the closed position.

2.3 SCHEDULED DOOR HARDWARE

- A. Provide products for each door that comply with requirements indicated in Part 2 and door hardware schedule.
 1. Door hardware is scheduled in Part 3.

2.4 HINGES

- A. Hinges: BHMA A156.1. Provide template-produced hinges for hinges installed on hollow-metal doors and hollow-metal frames.
 1. Ball bearing, 5 knuckle hinges.

2. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Allegion plc.
 - b. Baldwin Hardware Corporation.
 - c. Bommer Industries, Inc.
 - d. Hager Companies.
 - e. Lawrence Hardware Inc.
 - f. McKinney Products Company; an ASSA ABLOY Group company.
 - g. Stanley Commercial Hardware; a division of Stanley Security Solutions.

2.5 MECHANICAL LOCKS AND LATCHES

- A. Lock Functions: As indicated in door hardware schedule.
- B. Lock Throw: Comply with testing requirements for length of bolts required for labeled fire doors, and as follows:
 1. Bored Locks: Minimum 1/2-inch (13-mm) latchbolt throw.
 2. Mortise Locks: Minimum 3/4-inch (19-mm) latchbolt throw.
 3. Deadbolts: Minimum 1-inch (25-mm) bolt throw.
- C. Lock Backset: 2-3/4 inches (70 mm) unless otherwise indicated.
- D. Strikes: Provide manufacturer's standard strike for each lock bolt or latchbolt complying with requirements indicated for applicable lock or latch and with strike box and curved lip extended to protect frame; finished to match lock or latch.
 1. Aluminum-Frame Strike Box: Manufacturer's special strike box fabricated for aluminum framing.

2.6 LOCK CYLINDERS

- A. Lock Cylinders: Tumbler type, constructed from brass or bronze, stainless steel, or nickel silver. Provide cylinder from same manufacturer of locking devices.
 1. Manufacturers: Provide the following:
 - a. Schlage Primus (I.C.) cores, 6 pin Schlage/Challenger/Yale
- B. High-Security Lock Cylinders: BHMA A156.30; Grade 1 permanent cores that are removable; face finished to match lockset.
 1. Type: M, mechanical.
- C. Construction Master Keys: Provide cylinders with feature that permits voiding of construction keys without cylinder removal. Provide 10 construction master keys.
- D. Construction Cores: Provide construction cores that are replaceable by permanent cores. Provide 10 construction master keys.

2.7 KEYING

- A. Keying System: Factory registered, complying with guidelines in BHMA A156.28, appendix. Provide one extra key blank for each lock. Incorporate decisions made in keying conference.
 - 1. Existing System:
 - a. Master key or grand master key locks to Owner's existing system.
 - b. Re-key Owner's existing master key system into new keying system.
- B. Keys: Brass.
 - 1. Stamping: Permanently inscribe each key with a visual key control number and include the following notation:
 - a. Notation: Information to be furnished by Owner.

2.8 KEY CONTROL SYSTEM

- A. Key Control System Software: Multiple-index system for recording and reporting key-holder listings, tracking keys and lock and key history, and printing receipts for transactions. Include instruction manual.

2.9 OPERATING TRIM

- A. Operating Trim: BHMA A156.6; stainless steel unless otherwise indicated.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Allegion plc.
 - b. Forms+Surfaces.
 - c. Hager Companies.
 - d. Hiawatha, Inc; a division of the Activar Construction Products Group.
 - e. INOX by Unison Hardware, Inc.
 - f. Rockwood Manufacturing Company; an ASSA ABLOY Group company.
 - g. Trimco.

2.10 SURFACE CLOSERS

- A. Surface Closers: BHMA A156.4; rack-and-pinion hydraulic type with adjustable sweep and latch speeds controlled by key-operated valves and forged-steel main arm. Comply with manufacturer's written instructions for size of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Provide factory-sized closers, adjustable to meet field conditions and requirements for opening force.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include:
 - a. LCN Allegion plc.

2.11 DOOR GASKETING

- A. Door Gasketing: BHMA A156.22; with resilient or flexible seal strips that are easily replaceable and readily available from stocks maintained by manufacturer.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Hager Companies.
 - b. National Guard Products, Inc.
 - c. Pemko Manufacturing Co.
 - d. Reese Enterprises, Inc.
 - e. Zero International, Inc.
- B. Maximum Air Leakage: When tested according to ASTM E 283 with tested pressure differential of 0.3-inch wg (75 Pa), as follows:
 - 1. Gasketing on Single Doors: 0.3 cfm/sq. ft. (3 cu. m per minute/sq. m) of door opening.
 - 2. Gasketing on Double Doors: 0.50 cfm per foot (0.000774 cu. m/s per m) of door opening.

2.12 THRESHOLDS

- A. Thresholds: White Marble, tapered for ADA access.

2.13 FABRICATION

- A. Manufacturer's Nameplate: Do not provide products that have manufacturer's name or trade name displayed in a visible location except in conjunction with required fire-rating labels and as otherwise approved by Architect.
 - 1. Manufacturer's identification is permitted on rim of lock cylinders only.
- B. Base Metals: Produce door hardware units of base metal indicated, fabricated by forming method indicated, using manufacturer's standard metal alloy, composition, temper, and hardness. Furnish metals of a quality equal to or greater than that of specified door hardware units and BHMA A156.18.
- C. Fasteners: Provide door hardware manufactured to comply with published templates prepared for machine, wood, and sheet metal screws. Provide screws that comply with commercially recognized industry standards for application intended, except aluminum fasteners are not permitted. Provide Phillips flat-head screws with finished heads to match surface of door hardware unless otherwise indicated.
 - 1. Concealed Fasteners: For door hardware units that are exposed when door is closed, except for units already specified with concealed fasteners. Do not use through bolts for installation where bolt head or nut on opposite face is exposed unless it is the only means of securely attaching the door hardware. Where through bolts are used on hollow door and frame construction, provide sleeves for each through bolt.
 - 2. Fire-Rated Applications:
 - a. Wood or Machine Screws: For the following:

- 1) Hinges mortised to doors or frames; use threaded-to-the-head wood screws for wood doors and frames.
 - 2) Strike plates to frames.
 - 3) Closers to doors and frames.
- b. Steel Through Bolts: For the following unless door blocking is provided:
- 1) Closers to doors and frames.
 - 2) Surface-mounted exit devices.
3. Spacers or Sex Bolts: For through bolting of hollow-metal doors.
4. Gasketing Fasteners: Provide noncorrosive fasteners for exterior applications and elsewhere as indicated.

2.14 FINISHES

- A. Provide finishes complying with BHMA A156.18 as indicated in door hardware schedule.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance of the Work.
- B. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Mounting Heights: Mount door hardware units at heights to comply with the following unless otherwise indicated or required to comply with governing regulations.
 1. Standard Steel Doors and Frames: ANSI/SDI A250.8.
 2. Custom Steel Doors and Frames: HMMA 831.
- B. Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface

protective trim units with finishing work. Do not install surface-mounted items until finishes have been completed on substrates involved.

1. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
 2. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.
- C. Hinges: Install types and in quantities indicated in door hardware schedule, but not fewer than the number recommended by manufacturer for application indicated or one hinge for every 30 inches (750 mm) of door height, whichever is more stringent, unless other equivalent means of support for door, such as spring hinges or pivots, are provided.
- D. Lock Cylinders: Install construction cores to secure building and areas during construction period.
1. Replace construction cores with permanent cores as directed by Owner.
 2. Furnish permanent cores to Owner for installation.
- E. Key Control System:
1. Tag keys and place them on markers and hooks in key control system cabinet, as determined by final keying schedule.
 2. Key Control System Software: Provide Owner with information needed to update existing key control software based on new doors, hardware and final keying schedule.
- F. Thresholds: Set thresholds for exterior doors and other doors indicated in full bed of sealant complying with requirements specified in Section 079200 "Joint Sealants."
- G. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they will impede traffic.
- H. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.
1. Do not notch perimeter gasketing to install other surface-applied hardware.
- I. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.
- J. Door Bottoms: Apply to bottom of door, forming seal with threshold when door is closed.

3.3 FIELD QUALITY CONTROL

- A. Independent Architectural Hardware Consultant: Engage a qualified independent Architectural Hardware Consultant to perform inspections and to prepare inspection reports.
1. Independent Architectural Hardware Consultant will inspect door hardware and state in each report whether installed work complies with or deviates from requirements, including whether door hardware is properly installed and adjusted.

3.4 ADJUSTING

- A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to

operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

1. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.

- B. Occupancy Adjustment: Approximately six months after date of Substantial Completion, Installer's Architectural Hardware Consultant shall examine and readjust each item of door hardware, including adjusting operating forces, as necessary to ensure function of doors, door hardware, and electrified door hardware.

3.5 CLEANING AND PROTECTION

- A. Clean adjacent surfaces soiled by door hardware installation.
- B. Clean operating items as necessary to restore proper function and finish.
- C. Provide final protection and maintain conditions that ensure that door hardware is without damage or deterioration at time of Substantial Completion.

3.6 MAINTENANCE SERVICE

- A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

3.7 DOOR HARDWARE SCHEDULE

- A. Following sets of hardware correspond to those shown on drawings.

Hardware Set 1 (Restroom Doors)

3 pair butt hinges	FBB199	Stanley
1 privacy cylinder lockset	7KC-3-0-L-15-D-S3-626	BEST
1 closer	DC8000 BHMA 626 (US26D)	Corbin Russwin
1 threshold	White marble	

END OF SECTION 087100

SECTION 092216 - NON-STRUCTURAL METAL FRAMING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Non-load-bearing steel framing systems for interior partitions.
 - 2. Suspension systems for interior ceilings and soffits.
 - 3. Grid suspension systems for gypsum board ceilings.
- B. Related Requirements:
 - 1. Section 054000 "Cold-Formed Metal Framing" for exterior and interior load-bearing and exterior non-load-bearing wall studs; floor joists; and roof rafters and ceiling joists.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1.4 INFORMATIONAL SUBMITTALS

- A. Product Certificates: For each type of code-compliance certification for studs and tracks.
- B. Evaluation Reports: For embossed, high-strength steel studs and tracks, firestop tracks, post-installed anchors, and power-actuated fasteners, from ICC-ES or other qualified testing agency acceptable to authorities having jurisdiction.

1.5 QUALITY ASSURANCE

- A. Code-Compliance Certification of Studs and Tracks: Provide documentation that framing members are certified according to the product-certification program of the Certified Steel Stud Association, the Steel Framing Industry Association, or the Steel Stud Manufacturers Association.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Fire-Test-Response Characteristics: For fire-resistance-rated assemblies that incorporate non-load-bearing steel framing, provide materials and construction identical to those tested in assembly indicated, according to ASTM E119 by an independent testing agency.
- B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated on Drawings, according to ASTM E90 and classified according to ASTM E413 by an independent testing agency.
- C. Horizontal Deflection: For composite wall assemblies, limited to 1/360 of the wall height based on horizontal loading of 5 lbf/sq. ft. (239 Pa).

2.2 FRAMING SYSTEMS

- A. Framing Members, General: Comply with ASTM C754 for conditions indicated.
 - 1. Steel Sheet Components: Comply with ASTM C645 requirements for steel unless otherwise indicated.
 - 2. Protective Coating: ASTM A653/A653M, G40 (Z120), hot-dip galvanized unless otherwise indicated.
- B. Studs and Tracks: ASTM C645. Use either conventional steel studs and tracks or embossed, high-strength steel studs and tracks.
 - 1. Steel Studs and Tracks:
 - a. Minimum Base-Steel Thickness: 0.0179 inch (0.455 mm).
 - b. Depth: As indicated on Drawings.
 - 2. Embossed, High Strength Steel Studs and Tracks: Roll-formed and embossed with surface deformations to stiffen the framing members so that they are structurally comparable to conventional ASTM C645 steel studs and tracks.
 - a. Minimum Base-Steel Thickness: As required by horizontal deflection performance requirements.
 - b. Depth: As indicated on Drawings.
- C. Slip-Type Head Joints: Where indicated, provide **one of** the following:
 - 1. Clip System: Clips designed for use in head-of-wall deflection conditions that provide a positive attachment of studs to tracks while allowing 1-1/2-inch (38-mm) minimum vertical movement.
 - 2. Single Long-Leg Track System: ASTM C645 top track with 2-inch- (51-mm-) deep flanges in thickness not less than indicated for studs, installed with studs friction fit into top track and with continuous bridging located within 12 inches (305 mm) of the top of studs to provide lateral bracing.
 - 3. Double-Track System: ASTM C645 top outer tracks, inside track with 2-inch- (51-mm-) deep flanges in thickness not less than indicated for studs and fastened to studs, and outer track sized to friction-fit over inner track.

4. Deflection Track: Steel sheet top track manufactured to prevent cracking of finishes applied to interior partition framing resulting from deflection of structure above; in thickness not less than indicated for studs and in width to accommodate depth of studs.
- D. Firestop Tracks: Top track manufactured to allow partition heads to expand and contract with movement of structure while maintaining continuity of fire-resistance-rated assembly indicated; in thickness not less than indicated for studs and in width to accommodate depth of studs.
- E. Flat Strap and Backing Plate: Steel sheet for blocking and bracing in length and width indicated.
 1. Minimum Base-Steel Thickness: 0.0179 inch (0.455 mm).
- F. Cold-Rolled Channel Bridging: Steel, 0.0538-inch (1.367-mm) minimum base-steel thickness, with minimum 1/2-inch- (13-mm-) wide flanges.
 1. Depth: 1-1/2 inches (38 mm).
 2. Clip Angle: Not less than 1-1/2 by 1-1/2 inches (38 by 38 mm), 0.068-inch- (1.72-mm-) thick, galvanized steel.
- G. Hat-Shaped, Rigid Furring Channels: ASTM C645.
 1. Minimum Base-Steel Thickness: 0.0179 inch (0.455 mm).
 2. Depth: 7/8 inch (22.2 mm).
- H. Resilient Furring Channels: 1/2-inch- (13-mm-) deep, steel sheet members designed to reduce sound transmission.
 1. Configuration: hat shaped.
- I. Cold-Rolled Furring Channels: 0.053-inch (1.34-mm) uncoated-steel thickness, with minimum 1/2-inch- (13-mm-) wide flanges.
 1. Depth: 3/4 inch (19 mm).
 2. Furring Brackets: Adjustable, corrugated-edge-type steel sheet with minimum uncoated-steel thickness of 0.0329 inch (0.8 mm).
 3. Tie Wire: ASTM A641/A641M, Class 1 zinc coating, soft temper, 0.062-inch- (1.59-mm-) diameter wire, or double strand of 0.048-inch- (1.21-mm-) diameter wire.
- J. Z-Shaped Furring: With slotted or nonslotted web, face flange of 1-1/4 inches (32 mm), wall attachment flange of 7/8 inch (22 mm), minimum uncoated-steel thickness of 0.0179 inch (0.455 mm), and depth required to fit insulation thickness indicated.

2.3 SUSPENSION SYSTEMS

- A. Tie Wire: ASTM A641/A641M, Class 1 zinc coating, soft temper, 0.062-inch- (1.59-mm-) diameter wire, or double strand of 0.048-inch- (1.21-mm-) diameter wire.
- B. Hanger Attachments to Concrete:
 1. Post-Installed Anchors: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC01 as appropriate for the substrate.
 - a. Uses: Securing hangers to structure.
 - b. Type: Torque-controlled, expansion anchor.
 - c. Material for Interior Locations: Carbon-steel components zinc-plated to comply with ASTM B633 or ASTM F1941 (ASTM F1941M), Class Fe/Zn 5, unless otherwise indicated.

- d. Material for Exterior or Interior Locations and Where Stainless Steel Is Indicated: Alloy Group 1 (A1) stainless-steel bolts, ASTM F593 (ASTM F738M), and nuts, ASTM F594 (ASTM F836M).
- 2. Power-Actuated Anchors: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.
- C. Wire Hangers: ASTM A641/A641M, Class 1 zinc coating, soft temper, 0.16 inch (4.12 mm) in diameter.
- D. Flat Hangers: Steel sheet, 1 by 3/16 inch (25 by 5 mm) by length indicated.
- E. Carrying Channels (Main Runners): Cold-rolled, commercial-steel sheet with a base-steel thickness of 0.0538 inch (1.367 mm) and minimum 1/2-inch- (13-mm-) wide flanges.
 - 1. Depth: 2 inches (51 mm).
- F. Furring Channels (Furring Members):
 - 1. Cold-Rolled Channels: 0.0538-inch (1.367-mm) uncoated-steel thickness, with minimum 1/2-inch- (13-mm-) wide flanges, 3/4 inch (19 mm) deep.
 - 2. Steel Studs and Tracks: ASTM C645.
 - a. Minimum Base-Steel Thickness: 0.0179 inch (0.455 mm).
 - b. Depth: 1-5/8 inches (41 mm).
 - 3. Embossed, High-Strength Steel Studs and Tracks: ASTM C645.
 - a. Minimum Base-Steel Thickness: 0.0147 inch (0.373 mm).
 - b. Depth: As indicated on Drawings.
 - 4. Hat-Shaped, Rigid Furring Channels: ASTM C645, 7/8 inch (22 mm) deep.
 - a. Minimum Base-Steel Thickness: 0.0179 inch (0.455 mm).
 - 5. Resilient Furring Channels: 1/2-inch- (13-mm-) deep members designed to reduce sound transmission.
 - a. Configuration: hat shaped.
- G. Grid Suspension System for Gypsum Board Ceilings: ASTM C645, direct-hung system composed of main beams and cross-furring members that interlock.

2.4 AUXILIARY MATERIALS

- A. General: Provide auxiliary materials that comply with referenced installation standards.
 - 1. Fasteners for Steel Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.
- B. Isolation Strip at Exterior Walls: Provide one of the following:
 - 1. Asphalt-Saturated Organic Felt: ASTM D226/D226M, Type I (No. 15 asphalt felt), nonperforated.

2. Foam Gasket: Adhesive-backed, closed-cell vinyl foam strips that allow fastener penetration without foam displacement, 1/8 inch (3.2 mm) thick, in width to suit steel stud size.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames, cast-in anchors, and structural framing, for compliance with requirements and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Suspended Assemblies: Coordinate installation of suspension systems with installation of overhead structure to ensure that inserts and other provisions for anchorages to building structure have been installed to receive hangers at spacing required to support the Work and that hangers will develop their full strength.
 1. Furnish concrete inserts and other devices indicated to other trades for installation in advance of time needed for coordination and construction.
- B. Coordination with Sprayed Fire-Resistive Materials:
 1. Before sprayed fire-resistive materials are applied, attach offset anchor plates or ceiling tracks to surfaces indicated to receive sprayed fire-resistive materials. Where offset anchor plates are required, provide continuous plates fastened to building structure not more than 24 inches (610 mm) o.c.
 2. After sprayed fire-resistive materials are applied, remove them only to extent necessary for installation of non-load-bearing steel framing. Do not reduce thickness of fire-resistive materials below that are required for fire-resistance ratings indicated. Protect adjacent fire-resistive materials from damage.

3.3 INSTALLATION, GENERAL

- A. Installation Standard: ASTM C754.
 1. Gypsum Plaster Assemblies: Also comply with requirements in ASTM C841 that apply to framing installation.
 2. Portland Cement Plaster Assemblies: Also comply with requirements in ASTM C1063 that apply to framing installation.
 3. Gypsum Veneer Plaster Assemblies: Also comply with requirements in ASTM C844 that apply to framing installation.
 4. Gypsum Board Assemblies: Also comply with requirements in ASTM C840 that apply to framing installation.
- B. Install framing and accessories plumb, square, and true to line, with connections securely fastened.

- C. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.
- D. Install bracing at terminations in assemblies.
- E. Do not bridge building control and expansion joints with non-load-bearing steel framing members. Frame both sides of joints independently.

3.4 INSTALLING FRAMED ASSEMBLIES

- A. Install framing system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.
 - 1. Single-Layer Application: As required by horizontal deflection performance requirements unless otherwise indicated.
 - 2. Multilayer Application: As required by horizontal deflection performance requirements unless otherwise indicated.
 - 3. Tile Backing Panels: As required by horizontal deflection performance requirements unless otherwise indicated.
- B. Where studs are installed directly against exterior masonry walls or dissimilar metals at exterior walls, install isolation strip between studs and exterior wall.
- C. Install studs so flanges within framing system point in same direction.
- D. Install tracks at floors and overhead supports. Extend framing full height to structural supports or substrates above suspended ceilings except where partitions are indicated to terminate at suspended ceilings. Continue framing around ducts that penetrate partitions above ceiling.
 - 1. Slip-Type Head Joints: Where framing extends to overhead structural supports, install to produce joints at tops of framing systems that prevent axial loading of finished assemblies.
 - 2. Door Openings: Screw vertical studs at jambs to jamb anchor clips on door frames; install track section (for cripple studs) at head and secure to jamb studs.
 - a. Install two studs at each jamb unless otherwise indicated.
 - b. Install cripple studs at head adjacent to each jamb stud, with a minimum **1/2-inch (13-mm)** clearance from jamb stud to allow for installation of control joint in finished assembly.
 - c. Extend jamb studs through suspended ceilings and attach to underside of overhead structure.
 - 3. Other Framed Openings: Frame openings other than door openings the same as required for door openings unless otherwise indicated. Install framing below sills of openings to match framing required above door heads.
 - 4. Fire-Resistance-Rated Partitions: Install framing to comply with fire-resistance-rated assembly indicated and support closures and to make partitions continuous from floor to underside of solid structure.
 - a. Firestop Track: Where indicated, install to maintain continuity of fire-resistance-rated assembly indicated.
 - 5. Sound-Rated Partitions: Install framing to comply with sound-rated assembly indicated.
 - 6. Curved Partitions:

- a. Bend track to uniform curve and locate straight lengths so they are tangent to arcs.
 - b. Begin and end each arc with a stud, and space intermediate studs equally along arcs. On straight lengths of no fewer than two studs at ends of arcs, place studs **6 inches (150 mm)** o.c.
- E. Direct Furring:
 1. Screw to wood framing.
 2. Attach to concrete or masonry with stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced **24 inches (610 mm)** o.c.
- F. Z-Shaped Furring Members:
 1. Erect insulation, specified in Section 072100 "Thermal Insulation," vertically and hold in place with Z-shaped furring members spaced **24 inches (610 mm)** o.c.
 2. Except at exterior corners, securely attach narrow flanges of furring members to wall with concrete stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced **24 inches (610 mm)** o.c.
 3. At exterior corners, attach wide flange of furring members to wall with short flange extending beyond corner; on adjacent wall surface, screw-attach short flange of furring channel to web of attached channel. At interior corners, space second member no more than **12 inches (305 mm)** from corner and cut insulation to fit.
- G. Installation Tolerance: Install each framing member so fastening surfaces vary not more than **1/8 inch (3 mm)** from the plane formed by faces of adjacent framing.

3.5 INSTALLING CEILING SUSPENSION SYSTEMS

- A. Install suspension system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.
 1. Hangers: **48 inches (1219 mm)** o.c.
 2. Carrying Channels (Main Runners): **48 inches (1219 mm)** o.c.
 3. Furring Channels (Furring Members): **16 inches (406 mm)** o.c.
- B. Isolate suspension systems from building structure where they abut or are penetrated by building structure to prevent transfer of loading imposed by structural movement.
- C. Suspend hangers from building structure as follows:
 1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structural or suspension system.
 - a. Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
 2. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with locations of hangers required to support standard suspension system members, install supplemental suspension members and hangers in the form of trapezes or equivalent devices.
 - a. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced installation standards.

3. Wire Hangers: Secure by looping and wire tying, either directly to structures or to inserts, eye screws, or other devices and fasteners that are secure and appropriate for substrate, and in a manner that will not cause hangers to deteriorate or otherwise fail.
 4. Flat Hangers: Secure to structure, including intermediate framing members, by attaching to inserts, eye screws, or other devices and fasteners that are secure and appropriate for structure and hanger, and in a manner that will not cause hangers to deteriorate or otherwise fail.
 5. Do not attach hangers to steel roof deck.
 6. Do not attach hangers to permanent metal forms. Furnish cast-in-place hanger inserts that extend through forms.
 7. Do not attach hangers to rolled-in hanger tabs of composite steel floor deck.
 8. Do not connect or suspend steel framing from ducts, pipes, or conduit.
- D. Fire-Resistance-Rated Assemblies: Wire tie furring channels to supports.
- E. Seismic Bracing: Sway-brace suspension systems with hangers used for support.
- F. Grid Suspension Systems: Attach perimeter wall track or angle where grid suspension systems meet vertical surfaces. Mechanically join main beam and cross-furring members to each other and butt-cut to fit into wall track.
- G. Installation Tolerances: Install suspension systems that are level to within **1/8 inch in 12 feet (3 mm in 3.6 m)** measured lengthwise on each member that will receive finishes and transversely between parallel members that will receive finishes.

END OF SECTION 092216

SECTION 092900 - GYPSUM BOARD

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Interior gypsum board.
2. Texture finishes.

B. Related Requirements:

1. Section 061600 "Sheathing" for gypsum sheathing for exterior walls.
2. Section 092116.23 "Gypsum Board Shaft Wall Assemblies" for metal shaft-wall framing, gypsum shaft liners, and other components of shaft-wall assemblies.
3. Section 092216 "Non-Structural Metal Framing" for non-structural steel framing and suspension systems that support gypsum board panels.
4. Section 093013 "Ceramic Tiling" for cementitious backer units installed as substrates for ceramic tile.

1.2 ACTION SUBMITTALS

A. Product Data: For the following:

1. Gypsum wallboard.
2. Gypsum board, Type X.
3. Gypsum ceiling board.
4. Mold-resistant gypsum board.

B. Samples: For the following products:

1. Trim Accessories: Full-size Sample in 12-inch- (300-mm-) long length for each trim accessory indicated.

1.3 DELIVERY, STORAGE AND HANDLING

- A. Store materials inside under cover and keep them dry and protected against weather, condensation, direct sunlight, construction traffic, and other potential causes of damage. Stack panels flat and supported on risers on a flat platform to prevent sagging.

1.4 FIELD CONDITIONS

- A. Environmental Limitations: Comply with ASTM C840 requirements or gypsum board manufacturer's written instructions, whichever are more stringent.

- B. Do not install paper-faced gypsum panels until installation areas are enclosed and conditioned.
- C. Do not install panels that are wet, moisture damaged, and mold damaged.
 - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E119 by an independent testing agency.
- B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E90 and classified according to ASTM E413 by an independent testing agency.

2.2 GYPSUM BOARD, GENERAL

- A. Size: Provide maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

2.3 INTERIOR GYPSUM BOARD

- A. Gypsum Wallboard: ASTM C1396/C1396M.
 - 1. Thickness: 1/2 inch (12.7 mm).
 - 2. Long Edges: Tapered.
- B. Gypsum Board, Type X: ASTM C1396/C1396M.
 - 1. Thickness: 5/8 inch (15.9 mm).
 - 2. Long Edges: Tapered.
- C. Gypsum Ceiling Board: ASTM C1396/C1396M.
 - 1. Thickness: 1/2 inch (12.7 mm).
 - 2. Long Edges: Tapered.
- D. Mold-Resistant Gypsum Board: ASTM C1396/C1396M. With moisture- and mold-resistant core and paper surfaces.
 - 1. Core: 5/8 inch (15.9 mm), Type X.
 - 2. Long Edges: Tapered.
 - 3. Mold Resistance: ASTM D3273, score of 10 as rated according to ASTM D3274.

2.4 TRIM ACCESSORIES

A. Interior Trim: ASTM C1047.

1. Material: Galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized-steel sheet.
2. Shapes:
 - a. Cornerbead.
 - b. Bullnose bead.
 - c. LC-Bead: J-shaped; exposed long flange receives joint compound.
 - d. L-Bead: L-shaped; exposed long flange receives joint compound.
 - e. U-Bead: J-shaped; exposed short flange does not receive joint compound.
 - f. Expansion (control) joint.
 - g. Curved-Edge Cornerbead: With notched or flexible flanges.
 - h. Base-of-Wall Galvanized Moisture Barrier Trim: Galvanized-steel sheet, 2 inches (50 mm) high.

B. Aluminum Trim: Extruded accessories of profiles and dimensions indicated.

1. Aluminum: Alloy and temper with not less than the strength and durability properties of ASTM B221 (ASTM B221M), Alloy 6063-T5.
2. Finish: Corrosion-resistant primer compatible with joint compound and finish materials specified.

2.5 JOINT TREATMENT MATERIALS

A. General: Comply with ASTM C475/C475M.

B. Joint Tape:

1. Interior Gypsum Board: Paper.
2. Exterior Gypsum Soffit Board: Paper.
3. Glass-Mat Gypsum Sheathing Board: 10-by-10 glass mesh.
4. Tile Backing Panels: As recommended by panel manufacturer.

C. Joint Compound for Interior Gypsum Board: For each coat, use formulation that is compatible with other compounds applied on previous or for successive coats.

1. Prefilling: At open joints, rounded or beveled panel edges, and damaged surface areas, use setting-type taping compound.
2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use setting-type taping compound.
 - a. Use setting-type compound for installing paper-faced metal trim accessories.
3. Fill Coat: For second coat, use drying-type, all-purpose compound.
4. Finish Coat: For third coat, use drying-type, all-purpose compound.
5. Skim Coat: For final coat of Level 5 finish, use setting-type, sandable topping compound.

2.6 AUXILIARY MATERIALS

- A. Provide auxiliary materials that comply with referenced installation standards and manufacturer's written instructions.
- B. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.
- C. Steel Drill Screws: ASTM C1002 unless otherwise indicated.
 - 1. Use screws complying with ASTM C954 for fastening panels to steel members from 0.033 to 0.112 inch (0.84 to 2.84 mm) thick.
- D. Sound-Attenuation Blankets: ASTM C665, Type I (blankets without membrane facing) produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool.
 - 1. Fire-Resistance-Rated Assemblies: Comply with mineral-fiber requirements of assembly.
- E. Acoustical Sealant: As specified in Section 079200 "Joint Sealants."
- F. Thermal Insulation: As specified in Section 072100 "Thermal Insulation."

2.7 TEXTURE FINISHES

- A. Primer: As recommended by textured finish manufacturer.
- B. Non-Aggregate Finish: Premixed, vinyl texture finish for spray application.
 - 1. Texture: Spatter knock-down.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and substrates including welded hollow-metal frames and support framing, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.
- B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION AND FINISHING OF PANELS, GENERAL

- A. Comply with ASTM C840.

- B. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.
- C. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than **1/16 inch (1.5 mm)** of open space between panels. Do not force into place.
- D. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.
- E. Form control and expansion joints with space between edges of adjoining gypsum panels.
- F. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.
 - 1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than **8 sq. ft. (0.7 sq. m)** in area.
 - 2. Fit gypsum panels around ducts, pipes, and conduits.
 - 3. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow **1/4- to 3/8-inch- (6.4- to 9.5-mm-)** wide joints to install sealant.
- G. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments. Provide **1/4- to 1/2-inch- (6.4- to 12.7-mm-)** wide spaces at these locations and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.
- H. Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.
- I. STC-Rated Assemblies: Seal construction at perimeters, behind control joints, and at openings and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions at perimeters and through penetrations. Comply with ASTM C919 and with manufacturer's written instructions for locating edge trim and closing off sound-flanking paths around or through assemblies, including sealing partitions above acoustical ceilings.
- J. Install sound attenuation blankets before installing gypsum panels unless blankets are readily installed after panels have been installed on one side.

3.3 INSTALLATION OF INTERIOR GYPSUM BOARD

- A. Install interior gypsum board in the following locations:
 - 1. Wallboard Type: **As indicated on Drawings.**
 - 2. Type X: **As indicated on Drawings.**
 - 3. Ceiling Type: **Ceiling surfaces.**

B. Single-Layer Application:

1. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing unless otherwise indicated.
2. On partitions/walls, apply gypsum panels vertically (parallel to framing) unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints.
 - a. Stagger abutting end joints not less than one framing member in alternate courses of panels.
 - b. At stairwells and other high walls, install panels horizontally unless otherwise indicated or required by fire-resistance-rated assembly.
3. On Z-shaped furring members, apply gypsum panels vertically (parallel to framing) with no end joints. Locate edge joints over furring members.
4. Fastening Methods: Apply gypsum panels to supports with steel drill screws.

C. Multilayer Application:

1. On ceilings, apply gypsum board indicated for base layers before applying base layers on walls/partitions; apply face layers in same sequence. Apply base layers at right angles to framing members and offset face-layer joints one framing member, **16 inches (400 mm)** minimum, from parallel base-layer joints, unless otherwise indicated or required by fire-resistance-rated assembly.
2. On partitions/walls, apply gypsum board indicated for base layers and face layers vertically (parallel to framing) with joints of base layers located over stud or furring member and face-layer joints offset at least one stud or furring member with base-layer joints unless otherwise indicated or required by fire-resistance-rated assembly. Stagger joints on opposite sides of partitions.
3. On Z-shaped furring members, apply base layer vertically (parallel to framing) and face layer either vertically (parallel to framing) or horizontally (perpendicular to framing) with vertical joints offset at least one furring member. Locate edge joints of base layer over furring members.
4. Fastening Methods: Fasten base layers **[and face layers separately to supports with screws] [with screws; fasten face layers with adhesive and supplementary fasteners]**.

- D. Laminating to Substrate: Where gypsum panels are indicated as directly adhered to a substrate (other than studs, joists, furring members, or base layer of gypsum board), comply with gypsum board manufacturer's written instructions and temporarily brace or fasten gypsum panels until fastening adhesive has set.

3.4 INSTALLATION OF TRIM ACCESSORIES

- A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.
- B. Control Joints: Install control joints according to ASTM C840 and in specific locations approved by Architect for visual effect.
- C. Interior Trim: Install in the following locations:

1. Cornerbead: Use at outside corners unless otherwise indicated.
2. LC-Bead: Use at exposed panel edges.

D. Aluminum Trim: Install in locations indicated on Drawings.

3.5 FINISHING GYPSUM BOARD

- A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.
- B. Prefill open joints, **rounded or beveled edges**, and damaged surface areas.
- C. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.
- D. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C840:
 1. Level 1: Ceiling plenum areas, concealed areas, and where indicated.
 2. Level 2: Panels that are substrate for tile.
 3. Level 3: Where indicated on Drawings.
 4. Level 4: At panel surfaces that will be exposed to view unless otherwise indicated.
 - a. Primer and its application to surfaces are specified in Section 099123 "Interior Painting."
 5. Level 5: Where indicated on Drawings.
 - a. Primer and its application to surfaces are specified in Section 099123 "Interior Painting."

3.6 INSTALLATION OF TEXTURE FINISHES

- A. Surface Preparation and Primer: Prepare and apply primer to gypsum panels and other surfaces receiving texture finishes. Apply primer to surfaces that are clean, dry, and smooth.
- B. Texture Finish Application: Mix and apply finish using powered spray equipment, to produce a uniform texture free of starved spots or other evidence of thin application or of application patterns.
- C. Prevent texture finishes from coming into contact with surfaces not indicated to receive texture finish by covering them with masking agents, polyethylene film, or other means. If, despite these precautions, texture finishes contact these surfaces, immediately remove droppings and overspray to prevent damage according to texture-finish manufacturer's written instructions.

3.7 PROTECTION

- A. Protect adjacent surfaces from drywall compound and promptly remove from floors and other non-drywall surfaces. Repair surfaces stained, marred, or otherwise damaged during drywall application.
- B. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.
- C. Remove and replace panels that are wet, moisture damaged, and mold damaged.
 - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 092900

SECTION 093013 - CERAMIC TILING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Porcelain tile.
 - 2. Tile backing panels.
 - 3. Waterproof membrane for thinset applications.
 - 4. Crack isolation membrane.
 - 5. Metal edge strips.
- B. Related Requirements:
 - 1. Section 079200 "Joint Sealants"
 - 2. Section 092900 "Gypsum Board"

1.3 DEFINITIONS

- A. General: Definitions in the ANSI A108 series of tile installation standards and in ANSI A137.1 apply to Work of this Section unless otherwise specified.
- B. ANSI A108 Series: ANSI A108.01, ANSI A108.02, ANSI A108.1A, ANSI A108.1B, ANSI A108.1C, ANSI A108.4, ANSI A108.5, ANSI A108.6, ANSI A108.8, ANSI A108.9, ANSI A108.10, ANSI A108.11, ANSI A108.12, ANSI A108.13, ANSI A108.14, ANSI A108.15, ANSI A108.16, and ANSI A108.17, which are contained in its "Specifications for Installation of Ceramic Tile."
- C. Face Size: Actual tile size, excluding spacer lugs.
- D. Module Size: Actual tile size plus joint width indicated.

1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.
 - 1. Review requirements in ANSI A108.01 for substrates and for preparation by other trades.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples for Initial Selection: For tile, grout, and accessories involving color selection.

C. Samples for Verification:

1. Full-size units of each type and composition of tile and for each color and finish required.
2. Metal edge strips in 12-inch (150-mm) lengths.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Master Grade Certificates: For each shipment, type, and composition of tile, signed by tile manufacturer and Installer.
- C. Product Certificates: For each type of product.
- D. Product Test Reports: For tile-setting and -grouting products and certified porcelain tile.

1.7 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match and are from same production runs as products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 1. Tile and Trim Units: Furnish quantity of full-size units equal to 5 percent of amount installed for each type, composition, color, pattern, and size indicated.
 2. Grout: Furnish quantity of grout equal to 5 percent of amount installed for each type, composition, and color indicated.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Comply with requirements in ANSI A137.1 for labeling tile packages.
- B. Store tile and cementitious materials on elevated platforms, under cover, and in a dry location.
- C. Store aggregates where grading and other required characteristics can be maintained and contamination can be avoided.
- D. Store liquid materials in unopened containers and protected from freezing.

1.9 FIELD CONDITIONS

- A. Environmental Limitations: Do not install tile until construction in spaces is complete and ambient temperature and humidity conditions are maintained at the levels indicated in referenced standards and manufacturer's written instructions.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Source Limitations for Tile: Obtain tile of each type and color or finish from single source or producer.
 - 1. Obtain tile of each type and color or finish from same production run and of consistent quality in appearance and physical properties for each contiguous area.
- B. Source Limitations for Setting and Grouting Materials: Obtain ingredients of a uniform quality for each mortar, adhesive, and grout component from single manufacturer and each aggregate from single source or producer.
 - 1. Obtain setting and grouting materials, except for unmodified Portland cement and aggregate, from single manufacturer.
 - 2. Obtain waterproof membrane and crack isolation membrane, except for sheet products, from manufacturer of setting and grouting materials.
- C. Source Limitations for Other Products: Obtain each of the following products specified in this Section from a single manufacturer:
 - 1. Crack isolation membrane.
 - 2. Cementitious backer units.
 - 3. Metal edge strips.

2.2 PRODUCTS, GENERAL

- A. ANSI Ceramic Tile Standard: Provide tile that complies with ANSI A137.1 for types, compositions, and other characteristics indicated.
 - 1. Provide tile complying with Standard grade requirements.
- B. ANSI Standards for Tile Installation Materials: Provide materials complying with ANSI A108.02, ANSI standards referenced in other Part 2 articles, ANSI standards referenced by TCNA installation methods specified in tile installation schedules, and other requirements specified.
- C. Factory Blending: For tile exhibiting color variations within ranges, blend tile in factory and package so tile units taken from one package show same range in colors as those taken from other packages and match approved Samples.

2.3 TILE PRODUCTS

- A. Ceramic Tile Type CT-1: Factory-mounted ceramic mosaic tile.
 - 1. Manufacturer: Daltile
 - 2. Composition: Porcelain.
 - 3. Certification: Porcelain tile certified by the Porcelain Tile Certification Agency.
 - 4. Module Size: 12 inches/ 24 inches.
 - 5. Thickness: 3/8 inch (9.6 mm) nominal.
 - 6. Dynamic Coefficient of Friction: Not less than 0.42.
 - 7. Finish: Textured
 - 8. Tile Color and Pattern: Daltile Model "Notable Beige" Model #DR09, 24x24

9. Grout Color: As selected by Architect from manufacturer's full range.
- B. Ceramic Tile Type CT-1A: Factory-mounted ceramic mosaic tile.
1. Manufacturer: Daltile
 2. Composition: Porcelain.
 3. Certification: Porcelain tile certified by the Porcelain Tile Certification Agency.
 4. Module Size: Style moonshine penny rounds
 5. Thickness: 3/8 inch (9.6 mm) nominal.
 6. Dynamic Coefficient of Friction: Not less than 0.42.
 7. Finish: Textured
 8. Tile Color and Pattern: Daltile Model "Moonshine", color code D117
 9. Grout Color: As selected by Architect from manufacturer's full range.
 10. Trim Units: Coordinated with sizes and coursing of adjoining flat tile where applicable and matching characteristics of adjoining flat tile. Provide shapes as follows, selected from manufacturer's standard shapes:
 11. For installation in shower area, room REC-1, up to edge of trench drain.
- C. Ceramic Tile Type CT-2: Factory-mounted ceramic mosaic tile.
1. Manufacturer: Daltile
 2. Composition: Porcelain.
 3. Certification: Porcelain tile certified by the Porcelain Tile Certification Agency.
 4. Module Size: 12 inches/ 24 inches.
 5. Thickness: 3/8 inch (9.6 mm) nominal.
 6. Dynamic Coefficient of Friction: Not less than 0.42.
 7. Finish: Textured
 8. Tile Color and Pattern: Daltile Model "Notable Beige" Model #DR09, 12x24
 9. Grout Color: As selected by Architect from manufacturer's full range.
 10. For installation in shower area, room REC-1, up to edge of trench drain.
- D. Ceramic Tile Type CT-3: Factory-mounted ceramic tile.
1. Manufacturer: Daltile
 2. Composition: Ceramic Tile
 1. Certification: Tile certified by the Ceramic Tile Certification Agency.
 2. Module Size: 8 inches/ 24 inches
 3. Thickness: 3/8 inch (9.6 mm) nominal.
 4. Finish: Smooth
 5. Tile Color and Pattern: Daltile Linear "Color Wheel" Collection, Color: Biscuit K175
 6. Grout Color: Taupe, as selected by Architect from manufacturer's full range.
 7. For installation in rooms ANX-1, ANX-3. And ANX-4 walls as part of Alternate #1.
- E. Ceramic Tile Type CT-3a: Factory-mounted ceramic tile.
1. Manufacturer: Daltile
 2. Composition: Ceramic Tile
 3. Certification: Tile certified by the Ceramic Tile Certification Agency.
 4. Module Size: 12 inches/ 24 inches
 5. Thickness: 3/8 inch (9.6 mm) nominal.
 6. Finish: Smooth
 7. Tile Color and Pattern: Daltile Linear "Core Fundamental" Collection, Color, Vitality White
 8. Grout Color: Taupe, as selected by Architect from manufacturer's full range.

9. For installation in rooms ANX-1, ANX-3. And ANX-4 floors as part of Alternate #1.

F. Ceramic Tile Type CT-4: Factory-mounted ceramic mosaic tile.

1. Manufacturer: Daltile
2. Composition: Ceramic Tile
3. Certification: Tile certified by the Ceramic Tile Certification Agency.
4. Module Size: 4 inches/ 16 inches, cove base tile.
5. Thickness: 3/8 inch (9.6 mm) nominal.
6. Finish: Smooth
7. Tile Color and Pattern: Daltile Linear "Color Wheel" Collection, Color: Biscuit K175
8. Grout Color: Taupe, as selected by Architect from manufacturer's full range.
9. For installation in rooms ANX-1, ANX-3. And ANX-4 as wall base as part of Alternate #1.

G. Accessories: Provide Stainless Steel accessories of type indicated,

1. One soap holder for each shower.

2.4 TILE BACKING PANELS

A. Cementitious Backer Units: ANSI A118.9 or ASTM C1325, Type A, in maximum lengths available to minimize end-to-end butt joints.

1. Subject to compliance with requirements, manufacturers with products that may be incorporated into the work include, but need not be limited to:
 - a. Custom Building Products
 - b. USG Corporation
2. Thickness: 1/2 inch (12.7 mm).

B. Fiber-Cement Backer Board: ASTM C1288, in maximum lengths available to minimize end-to-end butt joints.

1. Subject to compliance with requirements, manufacturers with products that may be incorporated into the work include, but need not be limited to:
 - a. Custom Building Products
 - b. USG Corporation
2. Thickness: 1/2 inch (12.7 mm).

2.5 WATERPROOF MEMBRANE

A. General: Manufacturer's standard product, selected from the following, that complies with ANSI A118.10 and is recommended by the manufacturer for the application indicated. Include reinforcement and accessories recommended by manufacturer.

B. PVC Sheet: PVC heat-fused on both sides to facings of nonwoven polyester.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Compotite Corporation.
 - b. Noble Company (The).

2. Nominal Thickness: 0.025 inch (0.6 mm).
3. Nominal Thickness: 0.040 inch (1 mm).

C. Fluid-Applied Membrane: Liquid-latex rubber or elastomeric polymer.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. ARDEX Americas.
 - b. Bostik; Arkema.
 - c. C-Cure.
 - d. Laticrete International, Inc.
 - e. MAPEI Corporation.

Waterproofing and Tile-Setting Adhesive: One-part, fluid-applied product intended for use as both waterproofing and tile-setting adhesive in a two-step process.

2. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Boiardi Products Corporation; a QEP company.
 - b. Bostik; Arkema.

2.6 CRACK ISOLATION MEMBRANE

- A. General: Manufacturer's standard product that complies with ANSI A118.12 for high performance and is recommended by the manufacturer for the application indicated. Include reinforcement and accessories recommended by manufacturer.
- B. PVC Sheet: PVC heat-fused on both sides to facings of nonwoven polyester; 0.040-inch (1-mm) nominal thickness.
 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Compotite Corporation.
- C. Fabric-Reinforced, Fluid-Applied Membrane: System consisting of liquid-latex rubber or elastomeric polymer and fabric reinforcement.
 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Boiardi Products Corporation; a QEP company.
 - b. Bostik; Arkema.
 - c. Laticrete International, Inc.
 - d. MAPEI Corporation.
 - e. Southern Grouts & Mortars, Inc.

2.7 SETTING MATERIALS

A. Portland Cement Mortar (Thickset) Installation Materials: ANSI A108.02.

1. Cleavage Membrane: Asphalt felt, ASTM D226/D226M, Type I (No. 15); or polyethylene sheeting, ASTM D4397, 4.0 mils (0.1 mm) thick.
2. Reinforcing Wire Fabric: Galvanized, welded-wire fabric, 2 by 2 inches (50.8 by 50.8 mm) by 0.062-inch (1.57-mm) diameter; comply with ASTM A185/A185M and ASTM A82/A82M, except for minimum wire size.
3. Expanded Metal Lath: Diamond-mesh lath complying with ASTM C847.
 - a. Base Metal and Finish for Interior Applications: Uncoated or zinc-coated (galvanized) steel sheet, with uncoated steel sheet painted after fabrication into lath.
 - b. Base Metal and Finish for Exterior Applications: Zinc-coated (galvanized) steel sheet.
 - c. Configuration over Studs and Furring: Flat.
 - d. Configuration over Solid Surfaces: Self-furring.
 - e. Weight: 2.5 lb/sq. yd. (1.4 kg/sq. m).
4. Latex Additive: Manufacturer's standard water emulsion, serving as replacement for part or all of gaging water, of type specifically recommended by latex-additive manufacturer for use with field-mixed portland cement and aggregate mortar bed.

B. Improved Modified Dry-Set Mortar (Thinset): ANSI A118.15.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. ARDEX Americas.
 - b. C-Cure.
 - c. Laticrete International, Inc.
 - d. MAPEI Corporation.
 - e. Siena Tile & Stone Installation Products; Omega Products International.
2. Provide prepackaged, dry-mortar mix containing dry, redispersible, vinyl acetate or acrylic additive to which only water must be added at Project site.
3. Provide prepackaged, dry-mortar mix combined with acrylic resin or styrene-butadiene-rubber liquid-latex additive at Project site.
4. For wall applications, provide mortar that complies with requirements for nonsagging mortar in addition to the other requirements in ANSI A118.15.

2.8 GROUT MATERIALS

A. High-Performance Tile Grout: ANSI A118.7.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. ARDEX Americas.
 - b. C-Cure.
 - c. MAPEI Corporation.
 - d. Sakrete; CRH Americas, Oldcastle APG.

2. Polymer Type: Ethylene vinyl acetate or acrylic additive, in dry, redispersible form, prepackaged with other dry ingredients.
- B. Water-Cleanable Epoxy Grout: ANSI A118.3, with a VOC content of 65 g/L or less.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. ARDEX Americas.
 - b. Boiardi Products Corporation; a QEP company.
 - c. C-Cure.
 - d. Laticrete International, Inc.
 - e. MAPEI Corporation.
 - f. Sakrete; CRH Americas, Oldcastle APG.
 2. Provide product capable of withstanding continuous and intermittent exposure to temperatures of up to 140 and 212 deg F (60 and 100 deg C), respectively, and certified by manufacturer for intended use.

2.9 MISCELLANEOUS MATERIALS

- A. Trowelable Underlayments and Patching Compounds: Latex-modified, portland cement-based formulation provided or approved by manufacturer of tile-setting materials for installations indicated.
- B. Vapor-Retarder Membrane: Polyethylene sheeting, ASTM D4397, 4.0 mils (0.1 mm) thick.
- C. Metal Edge Strips: Angle or L-shaped, height to match tile and setting-bed thickness, metallic, designed specifically for tile applications.
1. Subject to compliance with requirements, manufacturers with products that may be incorporated into the work include, but need not be limited to:
 - a. Shluter
 - Diadec 45 degree bevel edge at outside corners of wall tiles and wainscot caps
 - Schiene for floor transitions
- D. Stair nosings: Angle or L-shaped, height to match tile and setting-bed thickness, metallic, designed specifically for tile applications.
1. Subject to compliance with requirements, manufacturers with products that may be incorporated into the work include:
 - a. Wooster products incorporated: Supergrit safety treads. Supergrit 2- stage stair nosing, model # WP-RN2SG.
- E. Tile Cleaner: A neutral cleaner capable of removing soil and residue without harming tile and grout surfaces, specifically approved for materials and installations indicated by tile and grout manufacturers.
- F. Floor Sealer: Manufacturer's standard product for sealing grout joints and that does not change color or appearance of grout.

2.10 MIXING MORTARS AND GROUT

- A. Mix mortars and grouts to comply with referenced standards and mortar and grout manufacturers' written instructions.
- B. Add materials, water, and additives in accurate proportions.
- C. Obtain and use type of mixing equipment, mixer speeds, mixing containers, mixing time, and other procedures to produce mortars and grouts of uniform quality with optimum performance characteristics for installations indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions where tile will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
 - 1. Verify that substrates for setting tile are firm; dry; clean; free of coatings that are incompatible with tile-setting materials, including curing compounds and other substances that contain soap, wax, oil, or silicone; and comply with flatness tolerances required by ANSI A108.01 for installations indicated.
 - 2. Verify that concrete substrates for tile floors installed with adhesives or thinset mortar comply with surface finish requirements in ANSI A108.01 for installations indicated.
 - a. Verify that surfaces that received a steel trowel finish have been mechanically scarified.
 - b. Verify that protrusions, bumps, and ridges have been removed by sanding or grinding.
 - 3. Verify that installation of grounds, anchors, recessed frames, electrical and mechanical units of work, and similar items located in or behind tile has been completed.
 - 4. Verify that joints and cracks in tile substrates are coordinated with tile joint locations; if not coordinated, adjust joint locations in consultation with Architect.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Fill cracks, holes, and depressions in concrete substrates for tile floors installed with adhesives or thinset mortar with trowelable leveling and patching compound specifically recommended by tile-setting material manufacturer.
- B. Where indicated, prepare substrates to receive waterproof membrane by applying a reinforced mortar bed that complies with ANSI A108.1A and is sloped 1/4 inch per foot (1:50) toward drains.
- C. Blending: For tile exhibiting color variations, verify that tile has been factory blended and packaged so tile units taken from one package show same range of colors as those taken from other packages and match approved Samples. If not factory blended, either return to manufacturer or blend tiles at Project site before installing.

3.3 INSTALLATION OF CERAMIC TILE

- A. Comply with TCNA's "Handbook for Ceramic, Glass, and Stone Tile Installation" for TCNA installation methods specified in tile installation schedules. Comply with parts of the ANSI A108 series "Specifications for Installation of Ceramic Tile" that are referenced in TCNA installation methods, specified in tile installation schedules, and apply to types of setting and grouting materials used.
 - 1. For the following installations, follow procedures in the ANSI A108 series of tile installation standards for providing 95 percent mortar coverage:
 - a. Tile floors in wet areas.
 - b. Tile floors in laundries.
 - c. Tile floors consisting of tiles 8 by 8 inches (200 by 200 mm) or larger.
 - d. Tile floors consisting of rib-backed tiles.
- B. Extend tile work into recesses and under or behind equipment and fixtures to form complete covering without interruptions unless otherwise indicated. Terminate work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.
- C. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.
- D. Provide manufacturer's standard trim shapes where necessary to eliminate exposed tile edges.
- E. Where accent tile differs in thickness from field tile, vary setting-bed thickness so that tiles are flush.
- F. Jointing Pattern: Lay tile in grid pattern unless otherwise indicated. Lay out tile work and center tile fields in both directions in each space or on each wall area. Lay out tile work to minimize the use of pieces that are less than half of a tile. Provide uniform joint widths unless otherwise indicated.
 - 1. For tile mounted in sheets, make joints between tile sheets same width as joints within tile sheets so joints between sheets are not apparent in finished work.
 - 2. Where adjoining tiles on floor, base, walls, or trim are specified or indicated to be same size, align joints.
 - 3. Where tiles are specified or indicated to be whole integer multiples of adjoining tiles on floor, base, walls, or trim, align joints unless otherwise indicated.
- G. Joint Widths: Unless otherwise indicated, install tile with the following joint widths:
 - 1. Porcelain Tile: 3/16 inch (4.5 mm)]
- H. Lay out tile wainscots to dimensions indicated or to next full tile beyond dimensions indicated.
- I. Expansion Joints: Provide expansion joints and other sealant-filled joints, including control, contraction, and isolation joints, where indicated. Form joints during installation of setting materials, mortar beds, and tile. Do not saw-cut joints after installing tiles.
 - 1. Where joints occur in concrete substrates, locate joints in tile surfaces directly above them.
- J. Metal Edge Strips: Install where exposed edge of tile flooring meets carpet or other flooring that finishes flush with top of tile, at exposed outside corner of wall tiles, and at wainscot caps.

- K. Floor Sealer: Apply floor sealer to grout joints in tile floors and walls according to sealer manufacturer's written instructions. As soon as sealer has penetrated grout joints, remove excess sealer and sealer from tile faces by wiping with soft cloth.

3.4 INSTALLATION OF TILE BACKING PANEL

- A. Install panels and treat joints according to ANSI A108.11 and manufacturer's written instructions for type of application indicated. Use modified dry-set mortar for bonding material unless otherwise directed in manufacturer's written instructions.

3.5 INSTALLATION OF WATERPROOF MEMBRANE

- A. Install waterproof membrane to comply with ANSI A108.13 and manufacturer's written instructions to produce waterproof membrane of uniform thickness that is bonded securely to substrate.
- B. Allow waterproof membrane to cure and verify by testing that it is watertight before installing tile or setting materials over it.

3.6 INSTALLATION OF CRACK ISOLATION MEMBRANE

- A. Install crack isolation membrane to comply with ANSI A108.17 and manufacturer's written instructions to produce membrane of uniform thickness that is bonded securely to substrate.
- B. Allow crack isolation membrane to cure before installing tile or setting materials over it.

3.7 ADJUSTING AND CLEANING

- A. Remove and replace tile that is damaged or that does not match adjoining tile. Provide new matching units, installed as specified and in a manner to eliminate evidence of replacement.
- B. Cleaning: On completion of placement and grouting, clean all ceramic tile surfaces so they are free of foreign matter.
 - 1. Remove grout residue from tile as soon as possible.
 - 2. Clean grout smears and haze from tile according to tile and grout manufacturer's written instructions but no sooner than 10 days after installation. Use only cleaners recommended by tile and grout manufacturers and only after determining that cleaners are safe to use by testing on samples of tile and other surfaces to be cleaned. Protect metal surfaces and plumbing fixtures from effects of cleaning. Flush surfaces with clean water before and after cleaning.

3.8 PROTECTION

- A. Protect installed tile work with kraft paper or other heavy covering during construction period to prevent staining, damage, and wear. If recommended by tile manufacturer, apply coat of neutral protective cleaner to completed tile walls and floors.
- B. Prohibit foot and wheel traffic from tiled floors for at least seven days after grouting is completed.

- C. Before final inspection, remove protective coverings and rinse neutral protective cleaner from tile surfaces.

END OF SECTION 093013

SECTION 095113 - ACOUSTICAL PANEL CEILINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes lay-in acoustical panels of the types listed below and exposed suspension systems for interior ceilings.
 - 1. Epoxy coated panels.
- B. Products furnished, but not installed under this Section, include anchors, clips, and other ceiling attachment devices to be cast in concrete.

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Sustainable Design Submittals:
 - 1. Recycled Content: Postconsumer recycled content plus one-half of preconsumer recycled content not less than **25** percent.
 - 2. Product Data: For recycled content, indicating postconsumer and preconsumer recycled content
- C. Samples: For each exposed product and for each color and texture specified, 6 inches (150 mm) in size.

1.5 INFORMATIONAL SUBMITTALS

- A. Product Test Reports: For each acoustical panel ceiling, for tests performed by a qualified testing agency.
- B. Evaluation Reports: For each acoustical panel ceiling suspension system and anchor and fastener type, from ICC-ES.
- C. Field quality-control reports.

1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For finishes to include in maintenance manuals.

1.7 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Acoustical Ceiling Units: Full-size panels equal to 2 percent of quantity installed.
 - 2. Suspension-System Components: Quantity of each exposed component equal to 2 percent of quantity installed.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver acoustical panels, suspension-system components, and accessories to Project site and store them in a fully enclosed, conditioned space where they will be protected against damage from moisture, humidity, temperature extremes, direct sunlight, surface contamination, and other causes.
- B. Before installing acoustical panels, permit them to reach room temperature and a stabilized moisture content.

1.9 FIELD CONDITIONS

- A. Environmental Limitations: Do not install acoustical panel ceilings until spaces are enclosed and weathertight, wet-work in spaces is complete and dry, work above ceilings is complete, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.
 - 1. Pressurized Plenums: Operate ventilation system for not less than 48 hours before beginning acoustical panel ceiling installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Source Limitations: Obtain each type of acoustical ceiling panel and its supporting suspension system from single source from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

- A. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 - 1. Flame-Spread Index: Class A according to ASTM E 1264.
 - 2. Smoke-Developed Index: 50 or less.

- B. Fire-Resistance Ratings: Comply with ASTM E 119; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Indicate design designations from UL or from the listings of another qualified testing agency.

2.3 ACOUSTICAL PANELS

- A. Basis of Design: Armstrong Sahara Moisture Resistant, model #271, tegular tile edge
- B. Classification: Provide panels as follows:
1. Type and Form: Type IV, mineral base with membrane-faced overlay; Form 2, water felted; with vinyl overlay on face.
 2. Pattern: E (lightly textured)
- C. Color: White.
- D. Size: 24in x 24in
- E. Light Reflectance (LR): Not less than 0.85.
- F. Ceiling Attenuation Class (CAC): Not less than 35.
- G. Noise Reduction Coefficient (NRC): Not less than 0.80.
- H. Noise Isolation Class (NIC): Not less than 45
- I. Edge/Joint Detail: Reveal sized to fit flange of exposed suspension-system members.
- J. Thickness: 5/8 inch (22 mm).
- K. Modular Size: 24 by 24 inches (610 by 610 mm).
- L. Antimicrobial Treatment: Manufacturer's standard broad spectrum, antimicrobial formulation that inhibits fungus, mold, mildew, and gram-positive and gram-negative bacteria and showing no mold, mildew, or bacterial growth when tested according to ASTM D3273, ASTM D3274, or ASTM G21 and evaluated according to ASTM D3274 or ASTM G21.

2.4 SUSPENSION SYSTEMS

- A. Metal Suspension-System Standard: Provide manufacturer's standard, direct-hung, metal suspension system and accessories according to ASTM C 635/C 635M and designated by type, structural classification, and finish indicated.
1. High-Humidity Finish: Where indicated, provide coating tested and classified for "severe environment performance" according to ASTM C 635/C 635M.
- B. Narrow-Face, Capped, Double-Web, Steel Suspension System: Main and cross runners roll formed from cold-rolled steel sheet; prepainted, electrolytically zinc coated, or hot-dip galvanized, G30 (Z90) coating designation; with prefinished 9/16-inch- (15-mm-) wide metal caps on flanges.

1. Structural Classification: Intermediate-duty system.
2. End Condition of Cross Runners: Override (stepped) or butt-edge type.
3. Face Design: Flanges formed with an integral center reveal.
4. Cap Material: Cold-rolled steel.
5. Cap Finish: Painted to match color of acoustical unit.

2.5 ACCESSORIES

- A. Attachment Devices: Size for five times the design load indicated in ASTM C 635/C 635M, Table 1, "Direct Hung," unless otherwise indicated. Comply with seismic design requirements.
1. Anchors in Concrete: Anchors of type and material indicated below, with holes or loops for attaching hangers of type indicated and with capability to sustain, without failure, a load equal to five times that imposed by ceiling construction, as determined by testing according to ASTM E 488/E 488M or ASTM E 1512 as applicable, conducted by a qualified testing and inspecting agency.
 - a. Type: Postinstalled expansion anchors.
 - b. Corrosion Protection: Carbon-steel components zinc plated according to ASTM B 633, Class SC 1 (mild) service condition.
 2. Power-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hangers of type indicated and with capability to sustain, without failure, a load equal to 10 times that imposed by ceiling construction, as determined by testing according to ASTM E 1190, conducted by a qualified testing and inspecting agency.
- B. Wire Hangers, Braces, and Ties: Provide wires as follows:
1. Zinc-Coated, Carbon-Steel Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper.
 2. Stainless-Steel Wire: ASTM A 580/A 580M, Type 304, nonmagnetic for use in kitchen and dishwashing area.
 3. Size: Wire diameter sufficient for its stress at three times hanger design load (ASTM C 635/C 635M, Table 1, "Direct Hung") will be less than yield stress of wire, but not less than 0.135-inch- (3.5-mm-) diameter wire.
- C. Hanger Rods: Mild steel, zinc coated or protected with rust-inhibitive paint.
- D. Flat Hangers: Mild steel, zinc coated or protected with rust-inhibitive paint.
- E. Angle Hangers: Angles with legs not less than 7/8 inch (22 mm) wide; formed with 0.04-inch- (1-mm-) thick, galvanized-steel sheet complying with ASTM A 653/A 653M, G90 (Z275) coating designation; with bolted connections and 5/16-inch- (8-mm-) diameter bolts.
- F. Hold-Down Clips: Manufacturer's standard hold-down.

2.6 METAL EDGE MOLDINGS AND TRIM

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
1. Armstrong World Industries, Inc.

2. CertainTeed Corporation.
3. Chicago Metallic Corporation.
4. Fry Reglet Corporation.
5. USG Corporation.

- B. Roll-Formed, Sheet-Metal Edge Moldings and Trim: Type and profile indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations that comply with seismic design requirements; formed from sheet metal of same material, finish, and color as that used for exposed flanges of suspension-system runners.
1. Edge moldings shall fit acoustical panel edge details and suspension systems indicated and match width and configuration of exposed runners unless otherwise indicated.
 2. For lay-in panels with reveal edge details, provide stepped edge molding that forms reveal of same depth and width as that formed between edge of panel and flange at exposed suspension member.
 3. For circular penetrations of ceiling, provide edge moldings fabricated to diameter required to fit penetration exactly.
- C. Extruded-Aluminum Edge Moldings and Trim: For use in high humidity areas such as kitchen and dishwashing, and where indicated, provide manufacturer's extruded-aluminum edge moldings and trim of profile indicated or referenced by manufacturer's designations, including splice plates, corner pieces, and attachment and other clips, complying with seismic design requirements.
1. Baked-Enamel or Powder-Coat Finish: Minimum dry film thickness of 1.5 mils (0.04 mm). Comply with ASTM C 635/C 635M and coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish.

2.7 ACOUSTICAL SEALANT

- A. Acoustical Sealant: As specified in Section 079219 "Acoustical Joint Sealants."

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, including structural framing to which acoustical panel ceilings attach or abut, with Installer present, for compliance with requirements specified in this and other Sections that affect ceiling installation and anchorage and with requirements for installation tolerances and other conditions affecting performance of acoustical panel ceilings.
- B. Examine acoustical panels before installation. Reject acoustical panels that are wet, moisture damaged, or mold damaged.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Measure each ceiling area and establish layout of acoustical panels to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width panels at borders unless otherwise indicated, and comply with layout shown on reflected ceiling plans.

- B. Layout openings for penetrations centered on the penetrating items.

3.3 INSTALLATION

- A. Install acoustical panel ceilings according to ASTM C 636/C 636M and manufacturer's written instructions.
- B. Suspend ceiling hangers from building's structural members and as follows:
1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structure or of ceiling suspension system.
 2. Splay hangers only where required to miss obstructions; offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
 3. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with location of hangers at spacings required to support standard suspension-system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices.
 4. Secure wire hangers to ceiling-suspension members and to supports above with a minimum of three tight turns. Connect hangers directly to structure or to inserts, eye screws, or other devices that are secure and appropriate for substrate and that will not deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
 5. Secure flat, angle, channel, and rod hangers to structure, including intermediate framing members, by attaching to inserts, eye screws, or other devices that are secure and appropriate for both the structure to which hangers are attached and the type of hanger involved. Install hangers in a manner that will not cause them to deteriorate or fail due to age, corrosion, or elevated temperatures.
 6. Do not support ceilings directly from permanent metal forms or floor deck. Fasten hangers to cast-in-place hanger inserts, postinstalled mechanical or adhesive anchors, or power-actuated fasteners that extend through forms into concrete.
 7. When steel framing does not permit installation of hanger wires at spacing required, install carrying channels or other supplemental support for attachment of hanger wires.
 8. Do not attach hangers to steel deck tabs.
 9. Space hangers not more than 48 inches (1200 mm) o.c. along each member supported directly from hangers unless otherwise indicated; provide hangers not more than 8 inches (200 mm) from ends of each member.
 10. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards.
- C. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical panels.
1. Apply acoustical sealant in a continuous ribbon concealed on back of vertical legs of moldings before they are installed.
 2. Screw attach moldings to substrate at intervals not more than 16 inches (400 mm) o.c. and not more than 3 inches (75 mm) from ends. Miter corners accurately and connect securely.
 3. Do not use exposed fasteners, including pop rivets, on moldings and trim.
- D. Install suspension-system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.
- E. Install acoustical panels with undamaged edges and fit accurately into suspension-system runners and edge moldings. Scribe and cut panels at borders and penetrations to provide precise fit.

1. Arrange directionally patterned acoustical panels as follows:
 - a. Install panels in a basket-weave pattern.
2. For square-edged panels, install panels with edges fully hidden from view by flanges of suspension-system runners and moldings.
3. For reveal-edged panels on suspension-system runners, install panels with bottom of reveal in firm contact with top surface of runner flanges.
4. For reveal-edged panels on suspension-system members with box-shaped flanges, install panels with reveal surfaces in firm contact with suspension-system surfaces and panel faces flush with bottom face of runners.
5. Paint cut edges of panel remaining exposed after installation; match color of exposed panel surfaces using coating recommended in writing for this purpose by acoustical panel manufacturer.
6. Install hold-down clips in areas indicated; space according to panel manufacturer's written instructions unless otherwise indicated.
 - a. Hold-Down Clips: Space 24 inches (610 mm) o.c. on all cross runners.

3.4 ERECTION TOLERANCES

- A. Suspended Ceilings: Install main and cross runners level to a tolerance of 1/8 inch in 12 feet (3 mm in 3.6 m), non-cumulative.
- B. Moldings and Trim: Install moldings and trim to substrate and level with ceiling suspension system to a tolerance of 1/8 inch in 12 feet (3 mm in 3.6 m), non-cumulative.

3.5 FIELD QUALITY CONTROL

- A. Special Inspections: Engage a qualified special inspector to perform the following special inspections:
 1. Periodic inspection during the installation of suspended ceiling grids according to ASCE/SEI 7.
- B. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
- C. Perform the following tests and inspections of completed installations of acoustical panel ceiling hangers and anchors and fasteners in successive stages and when installation of ceiling suspension systems on each floor has reached 20 percent completion, but no panels have been installed. Do not proceed with installations of acoustical panel ceiling hangers for the next area until test results for previously completed installations of acoustical panel ceiling hangers show compliance with requirements.
 1. Within each test area, testing agency will select one of every 10 power-actuated fasteners and postinstalled anchors used to attach hangers to concrete and will test them for 200 lbf (890 N) of tension; it will also select one of every two postinstalled anchors used to attach bracing wires to concrete and will test them for 440 lbf (1957 N) of tension.
 2. When testing discovers fasteners and anchors that do not comply with requirements, testing agency will test those anchors not previously tested until 20 pass consecutively and then will resume initial testing frequency.
- D. Acoustical panel ceiling hangers, anchors, and fasteners will be considered defective if they do not pass tests and inspections.

- E. Prepare test and inspection reports.

3.6 CLEANING

- A. Clean exposed surfaces of acoustical panel ceilings, including trim, edge moldings, and suspension-system members. Comply with manufacturer's written instructions for cleaning and touchup of minor finish damage.
- B. Remove and replace ceiling components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION 095113

SECTION 096513 - RESILIENT BASE AND ACCESSORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Rubber2 base.
 - 2. Rubber stair accessories.
 - 3. Vinyl stair accessories.
 - 4. Rubber molding accessories.
 - 5. Vinyl molding accessories.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each exposed product and for each color and texture specified, not less than 12 inches (300 mm) long.
- C. Samples for Initial Selection: For each type of product indicated.
- D. Samples for Verification: For each type of product indicated and for each color, texture, and pattern required in manufacturer's standard-size Samples, but not less than 12 inches (300 mm) long.
- E. Product Schedule: For resilient base and accessory products. Use same designations indicated on Drawings.

1.4 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Furnish not less than 10 linear feet (3 linear m) for every 500 linear feet (150 linear m) or fraction thereof, of each type, color, pattern, and size of resilient product installed.

1.5 QUALITY ASSURANCE

- A. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.
 - 1. Coordinate mockups in this Section with mockups specified in other Sections.

2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store resilient products and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 50 deg F (10 deg C) or more than 90 deg F (32 deg C).

1.7 FIELD CONDITIONS

- A. Maintain ambient temperatures within range recommended by manufacturer, but not less than 70 deg F (21 deg C) or more than 95 deg F (35 deg C), in spaces to receive resilient products during the following periods:
 1. 48 hours before installation.
 2. During installation.
 3. 48 hours after installation.
- B. After installation and until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than 55 deg F (13 deg C) or more than 95 deg F (35 deg C).
- C. Install resilient products after other finishing operations, including painting, have been completed.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

2.2 RUBBER BASE

- A. Product Standard: ASTM F1861, Type TV (vinyl, thermoplastic).
 1. Group: I (solid, homogeneous).
 2. Style and Location:
 - a. Style B, Cove
- B. Minimum Thickness: 0.125 inch (3.2 mm).
- C. Height: 4 inches (102 mm).
- D. Lengths: Coils in manufacturer's standard length.
- E. Outside Corners: Preformed.

- F. Inside Corners: Job formed or preformed.
- G. Colors and Patterns: RB-1- Johnsonite "Grey" Model # WG-48

2.3 RUBBER STAIR ACCESSORIES

- A. Fire-Test-Response Characteristics: As determined by testing identical products according to ASTM E648 or NFPA 253 by a qualified testing agency.
 - 1. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.
- B. Stair Treads: ASTM F2169.
 - 1. Type: TS (rubber, vulcanized thermoset).
 - 2. Class: 2 (pattern; embossed).
 - 3. Group: 2 (with contrasting color for the visually impaired).
 - 4. Nosing Style: Square, adjustable to cover angles between 60 and 90 degrees.
 - 5. Nosing Height: 1-1/2 inches (38 mm).
 - 6. Thickness: 1/4 inch (6 mm) and tapered to back edge.
 - 7. Size: Lengths and depths to fit each stair tread in one piece.
 - 8. Integral Risers: Smooth, flat; in height that fully covers substrate.
- C. Separate Risers: Smooth, flat; in height that fully covers substrate; produced by same manufacturer as treads and recommended by manufacturer for installation with treads.
 - 1. Style: Toeless, by length matching treads.
 - 2. Thickness: 0.125 inch (3.2 mm).
- D. Stringers: Height and length after cutting to fit risers and treads and to cover stair stringers, produced by same manufacturer as treads, and recommended by manufacturer for installation with treads.
 - 1. Thickness: Manufacturer's standard.
- E. Landing Tile: Matching treads; produced by same manufacturer as treads and recommended by manufacturer for installation with treads.
- F. Locations: Stair 1.
- G. Colors and Patterns: Provide samples to Architect for selection.

2.4 RUBBER MOLDING ACCESSORY

- A. Description: Rubber stair-tread nosing, carpet bar for tackless installations, carpet edge for glue-down applications, nosing for carpet, nosing for resilient floor covering, reducer strip for resilient floor covering, joiner for tile and carpet, transition strips .
- B. Profile and Dimensions: As indicated on drawings.
- C. Locations: Provide rubber molding accessories in areas indicated.
- D. Colors and Patterns: Provide samples to Architect for selection.

2.5 INSTALLATION MATERIALS

- A. Trowelable Leveling and Patching Compounds: Latex-modified, portland-cement-based or blended hydraulic-cement-based formulation provided or approved by resilient-product manufacturer for applications indicated.
- B. Adhesives: Water-resistant type recommended by resilient-product manufacturer for resilient products and substrate conditions indicated.
- C. Stair-Tread Nose Filler: Two-part epoxy compound recommended by resilient stair-tread manufacturer to fill nosing substrates that do not conform to tread contours.
- D. Metal Edge Strips: Extruded aluminum with mill finish, nominal **2 inches (50.8 mm)** wide, of height required to protect exposed edges of flooring, and in maximum available lengths to minimize running joints.
- E. Floor Polish: Provide protective, liquid floor-polish products recommended by resilient stair-tread manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
 - 1. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of resilient products.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
 - 1. Installation of resilient products indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Prepare substrates according to manufacturer's written instructions to ensure adhesion of resilient products.
- B. Concrete Substrates for Resilient Stair Accessories: Prepare horizontal surfaces according to ASTM F710.
 - 1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
 - 2. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.
 - 3. Alkalinity and Adhesion Testing: Perform tests recommended by manufacturer. Proceed with installation only after substrate alkalinity falls within range on pH scale recommended by manufacturer in writing, but not less than 5 or more than 9 pH.
 - 4. Moisture Testing: Perform tests so that each test area does not exceed **200 sq. ft. (18.6 sq. m)**, and perform no fewer than three tests in each installation area and with test areas evenly spaced in installation areas.

- a. Anhydrous Calcium Chloride Test: ASTM F1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of **3 lb of water/1000 sq. ft. (1.36 kg of water/92.9 sq. m)** in 24 hours.
 - b. Relative Humidity Test: Using in-situ probes, ASTM F2170. Proceed with installation only after substrates have a maximum 75 percent relative humidity level measurement.
- C. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound; remove bumps and ridges to produce a uniform and smooth substrate.
- D. Do not install resilient products until materials are the same temperature as space where they are to be installed.
 - 1. At least 48 hours in advance of installation, move resilient products and installation materials into spaces where they will be installed.
- E. Immediately before installation, sweep and vacuum clean substrates to be covered by resilient products.

3.3 RESILIENT BASE INSTALLATION

- A. Comply with manufacturer's written instructions for installing resilient base.
- B. Apply resilient base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.
- C. Install resilient base in lengths as long as practical without gaps at seams and with tops of adjacent pieces aligned.
- D. Tightly adhere resilient base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.
- E. Do not stretch resilient base during installation.
- F. On masonry surfaces or other similar irregular substrates, fill voids along top edge of resilient base with manufacturer's recommended adhesive filler material.
- G. Preformed Corners: Install preformed corners before installing straight pieces.
- H. Job-Formed Corners:
 - 1. Outside Corners: Use straight pieces of maximum lengths possible and form with returns not less than **3 inches (76 mm)** in length.
 - a. Form without producing discoloration (whitening) at bends.
 - 2. Inside Corners: Use straight pieces of maximum lengths possible and form with returns not less than **3 inches (76 mm)** in length.
 - a. Miter or cope corners to minimize open joints.

3.4 RESILIENT ACCESSORY INSTALLATION

- A. Comply with manufacturer's written instructions for installing resilient accessories.
- B. Resilient Stair Accessories:
 - 1. Use stair-tread-nose filler to fill nosing substrates that do not conform to tread contours.
 - 2. Tightly adhere to substrates throughout length of each piece.
 - 3. For treads installed as separate, equal-length units, install to produce a flush joint between units.
- C. Resilient Molding Accessories: Butt to adjacent materials and tightly adhere to substrates throughout length of each piece. Install reducer strips at edges of floor covering that would otherwise be exposed.

3.5 CLEANING AND PROTECTION

- A. Comply with manufacturer's written instructions for cleaning and protecting resilient products.
- B. Perform the following operations immediately after completing resilient-product installation:
 - 1. Remove adhesive and other blemishes from surfaces.
 - 2. Sweep and vacuum horizontal surfaces thoroughly.
 - 3. Damp-mop horizontal surfaces to remove marks and soil.
- C. Protect resilient products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.
- D. Floor Polish: Remove soil, adhesive, and blemishes from resilient stair treads before applying liquid floor polish.
 - 1. Apply two coat(s).
- E. Cover resilient products subject to wear and foot traffic until Substantial Completion.

END OF SECTION 096513

SECTION 099123 - INTERIOR PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes surface preparation and the application of paint systems on interior substrates.
 - 1.
 - 2. Steel and iron.
- B. Related Requirements:
 - 1. Section 099600 "High-Performance Coatings" for tile-like coatings.

1.3 DEFINITIONS

- A. MPI Gloss Level 1: Not more than five units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.
- B. MPI Gloss Level 2: Not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.
- C. MPI Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.
- D. MPI Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.
- E. MPI Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.
- F. MPI Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.
- G. MPI Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.
 - 1. Include Printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.
 - 2. Indicate VOC content.

- B. Samples for Initial Selection: For each type of topcoat product.
- C. Samples for Verification: For each type of paint system and in each color and gloss of topcoat.
 - 1. Submit Samples on rigid backing, 8 inches (200 mm) square.
 - 2. Apply coats on Samples in steps to show each coat required for system.
 - 3. Label each coat of each Sample.
 - 4. Label each Sample for location and application area.
- D. Product List: Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules. Include color designations.

1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Paint: 5 percent, but not less than 1 gal. (3.8 L) of each material and color applied.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F (7 deg C).
 - 1. Maintain containers in clean condition, free of foreign materials and residue.
 - 2. Remove rags and waste from storage areas daily.

1.7 FIELD CONDITIONS

- A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F (10 and 35 deg C).
- B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to products listed in the Interior Painting Schedule for the paint category indicated.

2.2 PAINT, GENERAL

- A. MPI Standards: Products shall comply with MPI standards indicated and shall be listed in its "MPI Approved Products Lists."

B. Material Compatibility:

1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.

C. Colors: As selected by Architect from manufacturer's full range.

2.3 SOURCE QUALITY CONTROL

A. Testing of Paint Materials: Owner reserves the right to invoke the following procedure:

1. Owner will engage the services of a qualified testing agency to sample paint materials. Contractor will be notified in advance and may be present when samples are taken. If paint materials have already been delivered to Project site, samples may be taken at Project site. Samples will be identified, sealed, and certified by testing agency.
2. Testing agency will perform tests for compliance with product requirements.
3. Owner may direct Contractor to stop applying paints if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying paint materials from Project site, pay for testing, and repaint surfaces painted with rejected materials. Contractor will be required to remove rejected materials from previously painted surfaces if, on repainting with complying materials, the two paints are incompatible.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.
- C. Proceed with coating application only after unsatisfactory conditions have been corrected.
 1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.
- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.

- C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
 - 1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.
- D. Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.
- E. Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces or mortar joints exceeds that permitted in manufacturer's written instructions.
- F. Steel Substrates: Remove rust, loose mill scale, and shop primer, if any. Clean using methods recommended in writing by paint manufacturer but not less than the following:
 - 1. SSPC-SP 11.
- G. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and areas where shop paint is abraded. Paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.

3.3 APPLICATION

- A. Apply paints according to manufacturer's written instructions and to recommendations in "MPI Manual."
 - 1. Use applicators and techniques suited for paint and substrate indicated.
 - 2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
 - 3. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
 - 4. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
 - 5. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.
- B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.
- C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

3.4 FIELD QUALITY CONTROL

- A. Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.
 - 1. Contractor shall touch up and restore painted surfaces damaged by testing.
 - 2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

3.5 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.
- E. Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces or mortar joints exceeds that permitted in manufacturer's written instructions.
 - 1. Primers:

Latex Block Filler: Water-based, pigmented, high-solids, emulsion coating formulated to bridge and fill porous surfaces of exterior concrete masonry units in preparation for specified subsequent coatings.
 - 2. Finish Coatings.

High-Build Epoxy Paint, Low Gloss: High-solids, two-component epoxy; formulated for use on exterior concrete, masonry, and primed-metal surfaces
- F. Metal Substrates:
 - 1. Institutional Low-Odor/VOC Latex System MPI INT 5.3N:
 - a. Prime Coat: Primer, galvanized, water based, MPI #134.
 - b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.
 - c. Topcoat: Latex, interior, institutional low odor/VOC, flat (MPI Gloss Level 1), MPI #143.
 - d. Topcoat: Latex, interior, institutional low odor/VOC (MPI Gloss Level 2), MPI #144.

- e. Topcoat: Latex, interior, institutional low odor/VOC (MPI Gloss Level 3), MPI #145.
- f. Topcoat: Latex, interior, institutional low odor/VOC (MPI Gloss Level 4), MPI #146.
- g. Topcoat: Latex, interior, institutional low odor/VOC, semi-gloss (MPI Gloss Level 5), MPI #147.
- h. Topcoat: Latex, interior, institutional low odor/VOC, gloss (MPI Gloss Level 6), MPI #148.
- i. Prime Coat: Primer, galvanized, water based, MPI #134.
- j. Intermediate Coat: Latex, interior, high performance architectural, matching topcoat.
- k. Topcoat: Latex, interior, high performance architectural (MPI Gloss Level 2), MPI #138.
- l. Topcoat: Latex, interior, high performance architectural (MPI Gloss Level 3), MPI #139.
- m. Topcoat: Latex, interior, high performance architectural (MPI Gloss Level 4), MPI #140.
- n. Topcoat: Latex, interior, high performance architectural, semi-gloss (MPI Gloss Level 5), MPI #141.

G. Wood Substrates: Wood paneling and casework.

1. Latex over Latex Primer System MPI INT 6.4R:

- a. Intermediate Coat: Latex, interior, matching topcoat.
- b. Topcoat: Latex, interior, flat (MPI Gloss Level 1), MPI #53.
- c. Topcoat: Latex, interior (MPI Gloss Level 2), MPI #44.
- d. Topcoat: Latex, interior (MPI Gloss Level 3), MPI #52.
- e. Topcoat: Latex, interior (MPI Gloss Level 4), MPI #43.
- f. Topcoat: Latex, interior, semi-gloss (MPI Gloss Level 5), MPI #54.
- g. Topcoat: Latex, interior, gloss (MPI Gloss Level 6, except minimum gloss of 65 units at 60 degrees), MPI #114.

2. Institutional Low-Odor/VOC Latex System MPI INT 6.4T:

- a. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.
- b. Topcoat: Latex, interior, institutional low odor/VOC, flat (MPI Gloss Level 1), MPI #143.
- c. Topcoat: Latex, interior, institutional low odor/VOC (MPI Gloss Level 2), MPI #144.
- d. Topcoat: Latex, interior, institutional low odor/VOC (MPI Gloss Level 3), MPI #145.

- e. Topcoat: Latex, interior, institutional low odor/VOC (MPI Gloss Level 4), MPI #146.
- f. Topcoat: Latex, interior, institutional low odor/VOC, semi-gloss (MPI Gloss Level 5), MPI #147.
- g. Topcoat: Latex, interior, institutional low odor/VOC, gloss (MPI Gloss Level 6), MPI #148.

H. Gypsum Board Substrates:

- 1. Latex over Latex Sealer System MPI INT 9.2A:
 - a. Prime Coat: Primer sealer, latex, interior, MPI #50.
 - b. Prime Coat: Latex, interior, matching topcoat.
 - c. Intermediate Coat: Latex, interior, matching topcoat.
 - d. Topcoat: Latex, interior, flat (MPI Gloss Level 1), MPI #53.
 - e. Topcoat: Latex, interior (MPI Gloss Level 2), MPI #44.
 - f. Topcoat: Latex, interior (MPI Gloss Level 3), MPI #52.
 - g. Topcoat: Latex, interior (MPI Gloss Level 4), MPI #43.
 - h. Topcoat: Latex, interior, semi-gloss (MPI Gloss Level 5), MPI #54.
 - i. Topcoat: Latex, interior, gloss (MPI Gloss Level 6, except minimum gloss of 65 units at 60 degrees), MPI #114.
- 2. Institutional Low-Odor/VOC Latex System MPI INT 9.2M:
 - a. Prime Coat: Primer sealer, interior, institutional low odor/VOC, MPI #149.
 - b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.
 - c. Topcoat: Latex, interior, institutional low odor/VOC, flat (MPI Gloss Level 1), MPI #143.
 - d. Topcoat: Latex, interior, institutional low odor/VOC (MPI Gloss Level 2), MPI #144.
 - e. Topcoat: Latex, interior, institutional low odor/VOC (MPI Gloss Level 3), MPI #145.
 - f. Topcoat: Latex, interior, institutional low odor/VOC (MPI Gloss Level 4), MPI #146.
 - g. Topcoat: Latex, interior, institutional low odor/VOC, semi-gloss (MPI Gloss Level 5), MPI #147.
 - h. Topcoat: Latex, interior, institutional low odor/VOC, gloss (MPI Gloss Level 6)

3.6 PAINT COLOR SCHEDULE

- 1. PNT-1 – SW 7008 “Alabaster”- Walls, Annex Building Restrooms
- 2. PNT-2 – SW 7036 “Accessible Beige”- Gypsum Ceiling, Rec Center Building Restroom
- 3. PNT-3 – Match Existing Door Frame Color, Annex Building

City of Rockville
Twinbrook Recreation Center Restroom Renovations

4. PNT-4 – Match Existing Door Color, Annex Building
5. PNT-3 – Match Existing Door Frame Color, Rec Center Building

END OF SECTION 099123

SECTION 102800 – TOILET AND BATH ACCESSORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Private-use shower room accessories.
 - 2. Private-use bathroom accessories.
 - 3. Healthcare accessories.
 - 4. Childcare accessories.
 - 5. Mirrors.
- B. Related Requirements:
 - 1. Section 093013 "Ceramic Tiling" for ceramic toilet and bath accessories.

1.3 COORDINATION

- A. Coordinate accessory locations with other work to prevent interference with clearances required for access by people with disabilities, and for proper installation, adjustment, operation, cleaning, and servicing of accessories.
- B. Deliver inserts and anchoring devices set into concrete or masonry as required to prevent delaying the Work.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
 - 2. Include anchoring and mounting requirements, including requirements for cutouts in other work and substrate preparation.
 - 3. Include electrical characteristics.
- B. Delegated-Design Submittal: For grab bars and shower seats.
 - 1. Include structural design calculations indicating compliance with specified structural-performance requirements.

1.5 INFORMATIONAL SUBMITTALS

- A. Sample Warranty: For manufacturer's special warranties.

1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For accessories to include in maintenance manuals.

1.7 WARRANTY

- A. Manufacturer's Special Warranty for Mirrors: Manufacturer agrees to repair or replace mirrors that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, visible silver spoilage defects.
 - 2. Warranty Period: 15 years from date of Substantial Completion.
- B. Manufacturer's Special Warranty for Toilet-Compartment Occupancy-Indicator Systems: Manufacturer agrees to repair or replace toilet-compartment occupancy-indicator systems that fail in materials or workmanship within specified warranty period.
 - 1. Warranty Period: Five years from date of Substantial Completion.
- C. Electric Range: Full warranty, including parts and labor, for on-site service on surface-burner elements.
 - 1. Warranty Period: Two years from date of Substantial Completion.
 - 2.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Structural Performance: Design accessories and fasteners to comply with the following requirements:
 - 1. Grab Bars: Installed units are able to resist 250 lbf (1112 N) concentrated load applied in any direction and at any point.
 - 2. Shower Seats: Installed units are able to resist 250 lbf (1112 N) applied in any direction and at any point.

2.2 PUBLIC-USE WASHROOM ACCESSORIES

- A. Source Limitations: Obtain each type of public-use washroom accessory from single source from single manufacturer.
- B. Toilet Tissue (Roll) Dispenser: Refer to drawings.
- C. Paper Towel (Roll) Dispenser: Refer to drawings.
- D. Waste Receptacle: Refer to drawings.

- E. Automatic Soap Dispenser: Refer to drawings.
- F. Grab Bar: Bobrick Refer to drawings.
- G. Sanitary-Napkin Disposal Unit: Refer to drawings.
- H. Seat-Cover Dispenser: Refer to drawings.
- I. Mirror Unit: Refer to drawings.
- J. Hook: Refer to drawings.
- K. Fixed Height BabyChanging Station: Refer to drawings.
- L. Fixed Height Adult Changing Station: Refer to drawings.
- M. Bench: Refer to drawings.
- N. Shower curtain rod: Refer to drawings.
- O. Folding shower seat: Refer to drawings.

2.3 MATERIALS

- A. Stainless Steel: ASTM A240/A240M or ASTM A666, Type 304, 0.031-inch- (0.8-mm-) minimum nominal thickness unless otherwise indicated.
- B. Brass: ASTM B19, flat products; ASTM B16/B16M, rods, shapes, forgings, and flat products with finished edges; or ASTM B30, castings.
- C. Steel Sheet: ASTM A1008/A1008M, Designation CS (cold rolled, commercial steel), 0.036-inch- (0.9-mm-) minimum nominal thickness.
- D. Galvanized-Steel Sheet: ASTM A653/A653M, with G60 (Z180) hot-dip zinc coating.
- E. Galvanized-Steel Mounting Devices: ASTM A153/A153M, hot-dip galvanized after fabrication.
- F. Fasteners: Screws, bolts, and other devices of same material as accessory unit, unless otherwise recommended by manufacturer or specified in this Section, and tamper and theft resistant where exposed, and of stainless or galvanized steel where concealed.
- G. Chrome Plating: ASTM B456, Service Condition Number SC 2 (moderate service).
- H. Mirrors: ASTM C1503, Mirror Glazing Quality, clear-glass mirrors, nominal 6.0 mm thick.

2.4 FABRICATION

- A. General: Fabricate units with tight seams and joints, and exposed edges rolled. Hang doors and access panels with full-length, continuous hinges. Equip units for concealed anchorage and with corrosion-resistant backing plates.
- B. Keys: Provide universal keys for internal access to accessories for servicing and resupplying. Provide minimum of six keys to Owner's representative.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install accessories according to manufacturers' written instructions, using fasteners appropriate to substrate indicated and recommended by unit manufacturer. Install units level, plumb, and firmly anchored in locations and at heights indicated.
 - 1. Remove temporary labels and protective coatings.
- B. Grab Bars: Install to comply with specified structural-performance requirements.
- C. Shower Seats: Install to comply with specified structural-performance requirements.

3.2 ADJUSTING AND CLEANING

- A. Adjust accessories for unencumbered, smooth operation. Replace damaged or defective items.
- B. Clean and polish exposed surfaces according to manufacturer's written instructions.

END OF SECTION 102800

SECTION 105126 - PHENOLIC LOCKERS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Phenolic lockers.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of locker.

B. Samples for Initial Selection: For each type of the following:

1. For each type of locker include no less than three standard phenolic panels, hardware, and/or accessories involving material and color selection.

1.3 CLOSEOUT SUBMITTALS

A. Maintenance Data: For adjusting, repairing, and replacing locker doors and latching mechanisms to include in maintenance manuals.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Store products in a dry, ventilated area until ready for installation.
- B. Protect finishes from moisture, soiling and damage during handling.
- C. Do not deliver lockers until painting and similar operations that could damage lockers have been completed in installation areas.

1.5 FIELD CONDITIONS

- A. Environmental Limitations: During and after installation 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.
- B. Field Measurements: Where lockers are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication, and indicate measurements on Shop Drawings.

1. Locate concealed framing, blocking, and reinforcements that support lockers by field measurements before being enclosed, and indicate measurements on Shop Drawings.
- C. Established Dimensions: Where lockers are indicated to fit to other construction, establish dimensions for areas where lockers are to fit. Provide allowance for trimming at site, and coordinate construction to ensure that actual dimensions correspond to established dimensions.

1.6 COORDINATION

- A. Coordinate sizes and locations of concealed wood support bases.
 1. Requirements are specified in Section 061053 "Miscellaneous Rough Carpentry."
- B. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of work specified in other Sections to ensure that lockers can be supported and installed as indicated.

1.7 WARRANTY

- A. Provide manufacturer's written limited 20-year warranty against breakage, corrosion, delamination, and defects in workmanship of all phenolic components; to be replaced without charge, excluding labor.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Hollman Inc.; 1825 W. Walnut Hill Lane, Irving, TX 75038, Suite 110 Phone (972) 815-4000, Fax (972) 815-2921, Email: sales@hollman.com.
- B. Substitutions: Not permitted.

2.2 MATERIALS

- A. Materials shall be solid phenolic, a cured solid material produced by resin-injecting sheets of Kraft paper, with a high-pressure melamine matte finish surface made as an integral part of the core material.
- B. Material Thicknesses:
 1. Doors, Slope Tops, End Panels, and Toe Kick Plates – Minimum .50" (13mm) Finished Thickness.
 2. Locker boxes: Tops, bottoms, sides, and shelves – Minimum .375" (10mm) Finished Thickness. Locker Backs – Minimum .25" (6.35mm) Finished Thickness.
 3. Locker Doors: Locker door shall be the full width of the locker box (minus 1/4") and shall be frameless, allowing access to the entire width of the locker.
 4. Locker Body: Locker body shall be white in color and will be mechanically fastened with stainless steel fastener. Hinges will be attached to the locker box with stainless steel theft proof torx-head screws. Lockers will have a 6mm ventilation gap between locker door and box. Lockers shall arrive at construction site fully assembled.
 5. Colors:

- a. Color 1: Frosty White #SFW

2.3 LOCKER MODELS

- A. Single tier, Model A: 72" H x 12" W x 18" D, 2 coat hooks, 1 ceiling hook, 1 hat shelf and 1 shoe shelf.

2.4 HARDWARE

- A. Hinges: Standard Option-Frameless Hinge (European Style): Fully Concealed, Nickel Plated Steel.
- B. Coat Hooks: Fabricated of 12-gauge type 304 stainless steel with a satin finish. All edges to be polished and smooth.
- C. Locks: Keyless Hasp, Satin finish.
- D. Number Plates: Provide a number plate for each opening, sequenced as indicated by the end user.

2.5 PERFORMANCE REQUIREMENTS

- A. Accessibility Standard: For lockers indicated to be accessible, comply with applicable provisions in the USDOJ's "2010 ADA Standards for Accessible Design", the ABA standards of the Federal agency having jurisdiction and ICC A117.1.

2.6 FABRICATION

- A. Provide factory pre-assembled locker units. Fabricate each locker with shelves, an individual door and frame, an individual top, a bottom, and a back, and with common intermediate uprights separating compartments. Knock down units are unacceptable.
- B. Fabricate lockers square, rigid, without warp, and with finished faces flat and free of dents, scratches, and chips. Accurately factory machine components for attachments. Make joints tight and true.
- C. Trim panels: Provide end panels, filler panels, base trim, valance, and slope top panels as required to complete installation of the lockers.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine walls and floors or support bases, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Verify that furring is attached to concrete and masonry walls that are to receive lockers.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Condition lockers to average prevailing humidity conditions in installation areas before installation.
- B. Before installing lockers, examine factory-fabricated work for completeness and complete work as required, including removal of packing.
- C. Clean surfaces thoroughly prior to installation.
- D. Prepare surfaces using methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Set and secure lockers level, plumb, and true; use concealed shims.
- C. Use concealed joist fasteners to align and secure adjoining locker units.
- D. Conceal screw heads with plastic caps on the adjustable feet only to match locker interior.
- E. Secure lockers with anchor devices to suit substrate materials. Minimum Pullout Force: 100lb.
- F. Install end panels, filler panels, tops, and bases as indicated on the approved shop drawings.
- G. Install accessories.

3.4 ADJUSTING

- A. Adjust moving or operating parts to function smoothly and correctly.

3.5 CLEANING

- A. Clean locker interiors and exterior surfaces.

3.6 PROTECTION

- A. Protect lockers from damage, abuse, dust, dirt, stain, or paint. Do not permit use during construction.
- B. Touch up marred finishes, or replace lockers that cannot be restored to factory-finished appearance. Use only materials and procedures recommended or furnished by locker manufacturer.

END OF SECTION 105126

SECTION 224000 - PLUMBING FIXTURES AND EQUIPMENT

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

Plumbing fixtures and specialties; fittings; supports; as indicated on the drawings, as required by code and as specified.

1.2 RELATED DIVISIONS AND SECTIONS

- A. Division 01 - General Requirements
- B. Section 102000 - Toilet and Bath Accessories

1.3 QUALITY ASSURANCE

- A. All work, materials, equipment, installation and accessories shall comply with the 2015 edition of the International Plumbing Code as amended by the 2015 Washington Suburban Sanitary Commission Plumbing and Fuel Gas Code and all city, county, state and federal regulations.
- B. Comply with requirements of ADA and ANSI Standards and Maryland Accessibility Code for plumbing fixtures and fittings for wheelchair accessibility.
- C. All inline devices installed on the domestic service lines or building distribution system downstream of the water main and before end point devices and is in contact with the water intended for human ingestion shall comply with the Safe Drinking Water Act and National Sanitation Foundation (NSF) Standard 61 and Standard 372 to provide lead free water (not containing more than 0.25 percent lead).
 - 1. Inline devices include building valves, check valves, meter stops, fittings, backflow preventers, etc.
- D. Provide UL label on electric powered equipment or certification that the equipment has been tested by a testing agency approved by local authority and is equivalent in safety to UL labeled equipment.

1.4 SUBMITTALS

- A. Submit in accordance with Division 01.
- B. Manufacturer's technical product data, including installation instructions, appurtenances, accessories, supports, fittings, finishes, construction details, and dimensions of components:

Plumbing Fixtures and Accessories
Fittings for Fixtures Supplied Under Other Divisions
Drains
Cleanouts
- C. NSF 61 Certification of domestic water devices.

1.5 APPLICABLE PUBLICATIONS

The publications form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation.

1.6 PROJECT CONDITIONS

- A. Provide all materials, equipment and perform all labor required to install plumbing system complete as indicated on the drawings and as specified.
- B. Plumbing system includes fixtures, equipment, piping and the supports for these items; supplies; stops; faucets; spouts; traps; drains; tailpieces; fittings and accessories.
- C. Provide all plumbing fixtures and equipment with accessible stops.
- D. Provide P-traps on fixtures for which traps have not been included as part of the furnished equipment. Size of trap shall be equal to size of fixture tailpiece.
- E. All exposed metal parts of fixtures shall be chromium-plated brass. Piping, fittings, valves, traps and accessories including piping escutcheons shall be chromium plated metals where exposed in finished spaces.
- F. All exposed piping in food service areas shall be at least 3/4-inch away from walls and 6 inches above finished floors.

PART 2 - PRODUCTS

2.1 PLUMBING FIXTURES AND SUPPORTS

- A. Provide fixtures as listed. Catalog numbers are American Standard, unless otherwise noted.
- B. Fixtures shall be vitreous china unless otherwise noted. Cast iron fixtures shall have acid resisting enamel finish.
- C. Flush valves shall be self-closing, non-hold open type with vacuum breaker and perform satisfactorily when subjected to inlet water pressure varying from 20 to 75 psi. Flush valves shall comply with ADA and not require a force greater than 5 lbf to operate.
- D. Restricting Flow Fittings and Flow Restricting Aerators
 - 1. Provide restricting flow fittings or flow restricting aerators on self-closing type lavatories to restrict flow to 0.5 gpm.
 - 2. Restrictor shall compensate for pressure fluctuations between 25 to 80 psig with flow within 10 percent.
 - 3. Manufacturers: Dole, Omni Products
- E. Plumbing Fixture Schedule: As indicate on the drawings

2.2 DRAINS

- A. Provide nickel bronze strainers on all floor drains in finished floor areas and painted cast iron strainers on all other floor drains, unless otherwise noted.
- B. Provide flashing clamps on all drains puncturing waterproof membrane and roofing.
- C. Provide suitable flashing material and clamping collar for drains which are not set in place when slab is poured.
- D. Traps for floor drains not used as indirect waste receptors shall be provided with trap primers as indicated.
- E. Traps for floors drains in food service areas not used as indirect waste receptors from sinks shall be provided with automatic trap priming system.
- F. Neoprene gaskets may be used if designed for use with the drains and cleanouts employed and if approved by the local plumbing authority.
- G. Where indicated, provide normally closed backwater valves, flapper type with bronze or brass seat and disc and stainless steel pin. Backwater valves may be an integral part of the drain or a separate device as required by installation condition.

H. Schedule of Drains and Accessories

1. Floor Drains

FD Floor Drain: Josam 30000-6AJ with Type A round strainer, vertically adjustable and reversible clamp collar, integral backwater valve. Provide with primer tap where required.

1. Shower Trench Drains

“Infinity Drain” or approved equal, Universal Infinity Drain 5’ stainless steel grate and channel, square patter grate style.

I. Manufacturers: Acorn, Josam, J.R. Smith, MIFAB, Wade, Zurn.

A. Materials and Manufacturers: Acorn, Josam, J.R. Smith, MIFAB, Wade, Zurn. Josam numbers are indicated:

CONCEALED PIPING	CAST IRON PIPE	STEEL
Unfinished Areas		
Floors	56000	58460A
Walls	58790	58890

2.3 VACUUM BREAKERS AND BACKFLOW PREVENTERS

- A. Vacuum Breakers:
 - 1. Atmospheric-type, not subject to back pressure, Watts No. 288A; ASSE 1001.
 - 2. Subject to back pressure, Watts series 9D; ASSE 1012.
 - 3. For hose threads, Watts series 8A; ASSE 1011.
- B. Reduced pressure zone for connection to heating water system, chilled water system, condenser water system, and elsewhere as indicated, Watts 909 backflow preventer with strainer and valves; ASSE 1013.
 - 1. Sizes through 2-inch shall have full-port ball valves.
 - 2. Valves on backflow preventer supplying water to fire protection system shall be UL/FM listed.
 - 3. Backflow preventer 2-inch and smaller shall have bronze strainer and valves; internal polymer coating for preventer body. Provide with air gap for drain outlet.
- C. Double check valve type backflow preventer with strainer, OS&Y rising stem UL/FM listed gate valves and bronze body ball valve test cocks, Watts Series 709; ASSE 1015. Entire backflow preventer including strainer and valves shall have FDA approved epoxy coating and lining.
- D. Manufacturers: Conbraco, Febco, Hersey, MIFAB, Sloan, Watts, Wilkins, Woodford, Zurn.

PART 3 - EXECUTION

3.1 PLUMBING FIXTURES AND SUPPORTS

- A. Setting heights of lavatories shall be as directed prior to installation.
- B. Install floor-mounted fixtures only after finished floor has been installed.
- C. Provide rubber concussion washers between vitreous china fixtures and supporting brackets.
- D. Protect chromium plated trim from corrosive solutions used to clean tile work.
- E. Provide ASTM C920, Type S white, silicone caulking where fixtures come in contact with walls and floors. Sealant shall be mildew resistant type.
- F. Provide insulation protection in accordance with ADA for exposed traps and supplies for all wheelchair accessible lavatories. Insulation shall provide access to supply valves and shall be equal to Handi-Lav-Guard as manufactured by Truebro, Inc.

Manufacturers: Proto, Truebro.
- G. Flush valves shall be mounted not more than 36 inches above the floor for wheelchair accessible water closets and shall be not more than 44 inches above the floor for wheelchair accessible urinal fixtures. Operating lever for water closet shall be mounted on wide side of water closet area.

- H. Examine roughing-in of water supply and sanitary drainage and vent piping systems to verify actual locations of piping connections before plumbing fixture installation.
- I. Examine counters, floors, and walls for suitable conditions where fixtures will be installed.
- J. Install floor-mounted water closets on closet flanges.
- K. Install fixtures level and plumb according to roughing-in drawings.
- L. Install stops in locations where they can be easily reached for operation.
- M. Install toilet seats on water closets.
- N. Install water-supply flow-control fittings with specified flow rates in fixture supplies at stop valves.
- O. Install faucet flow-control fittings with specified flow rates and patterns in faucet spouts if faucets are not available with required rates and patterns. Include adapters if required.
- P. Install traps on fixture outlets, except fixtures with integral traps and indirect wastes.
- Q. Check that plumbing fixtures are complete with trim, faucets, fittings, and other specified components.
- R. Inspect installed plumbing fixtures for damage. Replace damaged fixtures and components.
- S. Test installed fixtures after water systems are pressurized for proper operation. Replace malfunctioning fixtures and components, then retest. Repeat procedure until units operate properly.
- T. Replace washers and seals of leaking and dripping faucets and stops.
- U. Install ice maker unit where indicated on drawings. Mount supply outlet 48 inches above finished floor.

3.2 FITTINGS FOR FIXTURES SUPPLIED UNDER OTHER DIVISIONS

Install all fittings for fixtures in accordance with plumbing code. Coordinate fittings with fixture installation to result in complete operational fixture.

3.3 DRAINS

- A. Unless otherwise noted, drains are to be installed at the low point of floors, etc.
- B. Install floor drains in low points so the top of grates are at or below the finished floor level.
- C. Drains not functioning properly shall be removed and reinstalled properly at the expense of the Contractor.
- D. Install automatic trap priming system with cabinet where indicated. Install trap primer valves where indicated. Pitch outlet piping from trap primer down toward drain trap a minimum of 1 percent and connect to floor drain body, trap, or inlet fitting. Adjust valve for proper flow.

- E. Install traps for all floor drains connected to the sanitary system.

3.4 CLEANOUTS

- A. Install cleanouts in sanitary at ends of runs, at changes in direction that are greater than 45 degrees, near the base of stacks, every 50 feet in horizontal runs, and where indicated.
- B. All cleanouts required above food storage, preparation, dining and serving areas shall be extended up through the floor above.
- C. Vertical Pipes: Install cleanout in tees near floor.
- D. Horizontal Pipes: Install cleanouts in wyes or long sweep quarter bends.
- E. Extend cleanouts on concealed piping flush to finished walls, floors and grade.
- F. Waterproofing: Cleanouts puncturing waterproofing membrane shall have flashing clamps.

3.5 SHOCK ABSORBERS

Install shock absorbers at solenoid and fast closing valves, at the top of cold water risers, at each flush valve or battery of flush valves, and where indicated.

3.6 VACUUM BREAKERS AND BACKFLOW PREVENTERS

- A. Install vacuum breakers on water connections to fixtures and equipment where minimum air gaps required by plumbing code are not possible, on other outlets to which hoses can be attached, and where indicated on the drawings.
- B. Install backflow preventers where indicated on drawings and where required by code. Install air gap on reduced pressure zone backflow preventer and pipe discharge drain to floor drain. Do not install bypass piping around backflow preventers.

3.7 WATER PRESSURE REDUCING VALVES

Install shutoff valve on each side of reducing valve and full sized bypass with normally closed globe valve. Install strainer on inlet side of, and same size as, pressure reducing valve. Install pressure gage on low and high-pressure side of reducing valve to indicate pressure with flow through the reducing or the bypass valve.

3.8 WATER MIXING VALVES

- A. Install water mixing valve assembly where shown on the drawings.
- B. Mount bottom of cabinet 48 inches above finished floor.

3.9 GAS PRESSURE REGULATOR

- A. Install in accordance with manufacturer's instructions and NFPA 54 requirements.
- B. Provide control line piping connected to discharge line. Provide vent piping extended to atmosphere with screen and weather cap.
- C. Pipe relief valve discharge to atmosphere with screen and weather cap.

END OF SECTION 224000

SECTION 260050 - COMMON WORK RESULTS FOR ELECTRICAL

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Electrical equipment coordination and installation.
2. Common electrical installation requirements.

1.2 DESCRIPTION OF WORK

A. Requirements of this Section are applicable to work in Divisions 26 and 28.

B. Contract Documents

1. Contract drawings for electrical work are diagrammatic, intended to convey scope and general arrangement.
2. Refer questions involving document interpretation or discrepancies to Engineer for review and direction.
3. Correct faulty work due to resolving discrepancies without proper approval.
4. Specifications establish quality of materials, equipment, workmanship and methods of construction.
5. Follow drawings and specifications in laying out work. Consult other applicable contract drawings and specifications, become familiar with conditions affecting work.

C. Scope

1. Furnish and install the electrical work complete and ready for satisfactory service.

D. Definitions: The following are definitions of terms and expressions used in Divisions 26 and 28.

1. "Accessible" – Capable of being removed or exposed without damaging the building or structure or finish or not permanently closed in by other equipment or by the structure or finish of the building.
2. "Approve" - To permit use of material, equipment or methods conditional upon compliance with contract document requirements.
3. "Concealed" - Hidden from normal sight; includes work in crawl spaces, above ceilings, and in building shafts.
4. "Directed" - directed by Engineer.
5. "Equal, equivalent" - possessing the same performance qualities and characteristics and fulfilling the same utilitarian function.
6. "Exposed" - not concealed.
7. "Furnish" - Supply and deliver to project site, ready for unloading, unpacking, assembly, installation, and similar operations.
8. "Indicated" - indicated in Contract Documents.
9. "Install" - Operations at project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimensions, finishing, curing, protecting, cleaning and similar operations.
10. "Provide" - furnish and install, complete and ready for the intended use.

11. "Removable" - detachable from the structure or system without physical alteration of materials or equipment and without disturbance to other construction.
12. "Review" - limited observation or checking to ascertain general conformance with design concept of the work and with information given in contract documents. Such action does not constitute a waiver or alteration of the contract requirements.

1.3 QUALITY ASSURANCE

- A. Regulations: Comply with regulations of NFPA, state, county, and municipal building ordinances, and other applicable codes and regulations.
- B. Provide UL label on electric powered equipment or certification that equipment has been tested by a testing agency approved by the local authority as equivalent in safety to UL labeled equipment.
- C. Material and Equipment Requirements
 1. All materials and equipment shall be new and free from defects.
 2. Use products of one manufacturer where two or more items of same kind of equipment are required.
 3. For certain items of equipment, the specification and the project design are based upon the specified manufacturer's product. Other manufacturers' names are listed. Contractor may purchase, conditional upon meeting project requirements, equipment from the listed manufacturers.
 4. Only the manufacturer's equipment upon which the specification and the project design has been based, has been checked for this project. Check allocated space and structure for suitability of equipment of other listed manufacturers, including parts replacement and servicing.
- D. Workmanship
 1. Remove and replace, at no extra cost, work not in conformance with contract requirements.
 2. Coordinate with Other Trades
 - a. Coordinate work and cooperate with other trades to facilitate execution of work.
 - b. Give full cooperation and coordination with other trades and furnish information necessary to permit the work of all trades to be installed satisfactorily with the least possible interference or delay.
 - c. Furnish to other trades, as required, necessary templates, patterns, setting plans and shop details for the proper installation of the work and for the purpose of coordinating adjacent work.
 3. Accessible Equipment and Systems: Consider all materials and equipment installations and coordinate with the work of other trades to ensure equipment or systems are accessible for operations, maintenance, repairs, and replacement. Install materials and equipment, including but not limited to, supports and electrical conduit, to permit complete unobstructed access to panelboards, transformers, and other items requiring access for inspection, maintenance, and operations. The installation of new equipment or materials which renders new or existing equipment inaccessible will be disapproved by the Engineer and shall be corrected by the Contractor.

1.4 COORDINATION

- A. Coordinate arrangement, mounting, and support of electrical equipment as follows:
 - 1. To allow maximum possible headroom unless specific mounting heights that reduce headroom are indicated.
 - 2. To provide for ease of disconnecting the equipment with minimum interference to other installations.
 - 3. To allow right of way for piping and conduit installed at required slope.
 - 4. So that connecting raceways, cables, wireways, cable trays, and busways will be clear of obstructions and of the working and access space of other equipment.
- B. Coordinate installation of required supporting devices and set sleeves in cast-in-place concrete, masonry walls, and other structural components as they are constructed.
- C. Coordinate location of access panels and doors for electrical items that are behind finished surfaces or otherwise concealed.
- D. Coordinate sleeve selection and application with selection and application of firestopping specified in Division 7 Section "Penetration Firestopping."

1.5 SHOP DRAWINGS AND SUBMITTALS

- A. Refer to Division 01 for complete requirements.
- B. Submit all products for a single specification section as a complete submittal. All products specified within a division shall be included, otherwise submittal will be returned as incomplete.
- C. Clearly mark submittals to indicate actual intended products to be utilized. Marks may include highlighting, circling, boxing, checking, etc. Do not provide submittal data which lists multiple product's options and features without clearly indicating which data applies to the products intended to be used on project.
- D. Coordinate drawings and data before submitting and certify that provisions of the contract documents have been met.
- E. Call attention, in writing, to deviations from contract requirements.
- F. Do not fabricate, deliver to site, or install items requiring shop drawing review, until the review has been completed by the Engineer and the shop drawing has been marked to indicate "No Exception Taken" or "Make Corrections Noted."
- G. Use only final or corrected drawings and data for construction. This includes all Addendums, Architectural Supplemental Information (ASIs), and Change Bulletins.
- H. The Engineer's review of submittals shall not be construed as a complete check, but will indicate only that the general method of construction, materials, detailing and other information are satisfactory. Approval will not relieve the Contractor of the responsibility for any error which may exist, as the Contractor under the requirements of this contract is responsible for dimensions, the design of adequate connections and details, and the satisfactory construction of all work.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 COMMON REQUIREMENTS FOR ELECTRICAL INSTALLATION

- A. Comply with NECA 1.
- B. Measure indicated mounting heights to bottom of unit for suspended items and to center of unit for wall-mounted items.
- C. Headroom Maintenance: If mounting heights or other location criteria are not indicated, arrange and install components and equipment to provide maximum possible headroom consistent with these requirements.
- D. Equipment: Install to facilitate service, maintenance, and repair or replacement of components of both electrical equipment and other nearby installations. Connect in such a way as to facilitate future disconnecting with minimum interference with other items in the vicinity.
- E. Right of Way: Give to piping systems installed at a required slope.
- F. Conditions of Occupancy
 - 1. This building will be occupied during the life of this contract. Execute work in a manner to impose minimal interference with the normal functioning of the building and its occupants. When interference is unavoidable, schedule work 14 days in advance with the Owner.
 - 2. Make temporary connections where necessary to maintain uninterrupted electrical service.
 - 3. Provide adequate protection for the building, its contents, and occupants.
 - 4. Perform work as quietly as possible to avoid unnecessary disturbance. Unusual precaution may be necessary in the conduct or work in some areas to achieve satisfactory compliance.
 - 5. Coordinate with Owner to Perform work producing high noise levels, dust, or hazards to occupants in occupied during non-business hours of the facility.
 - 6. Comply with regulations of Owner pertaining to circulation, sanitation, and behavior of Contractor's personnel.

3.2 FIRESTOPPING

- A. Apply firestopping to penetrations of fire-rated floor and wall assemblies for electrical installations to restore original fire-resistance rating of assembly. Firestopping materials and installation requirements are specified in Division 7 Section "Penetration Firestopping."

END OF SECTION 260050

SECTION 260526 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes grounding and bonding systems and equipment.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.

PART 2 - PRODUCTS

2.1 SYSTEM DESCRIPTION

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with UL 467 for grounding and bonding materials and equipment.

2.2 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. Advanced Lightning Technology, Ltd.
 - 2. Burndy; Part of Hubbell Electrical Systems.
 - 3. Dossert; AFL Telecommunications LLC.
 - 4. ERICO International Corporation.
 - 5. Fushi Copperweld Inc.
 - 6. Galvan Industries, Inc.; Electrical Products Division, LLC.
 - 7. Harger Lightning & Grounding.
 - 8. ILSCO.
 - 9. O-Z/Gedney; a brand of Emerson Industrial Automation.
 - 10. Robbins Lightning, Inc.
 - 11. Siemens Industry, Inc., Energy Management Division.
 - 12. Thomas & Betts Corporation; A Member of the ABB Group.

2.3 CONDUCTORS

- A. Insulated Conductors: Copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.
- B. Bare Copper Conductors:

1. Solid Conductors: ASTM B 3.
2. Stranded Conductors: ASTM B 8.
3. Tinned Conductors: ASTM B 33.
4. Bonding Cable: 28 kcmil, 14 strands of No. 17 AWG conductor, 1/4 inch in diameter.
5. Bonding Conductor: No. 4 or No. 6 AWG, stranded conductor.
6. Bonding Jumper: Copper tape, braided conductors terminated with copper ferrules; 1-5/8 inches wide and 1/16 inch thick.
7. Tinned Bonding Jumper: Tinned-copper tape, braided conductors terminated with copper ferrules; 1-5/8 inches wide and 1/16 inch thick.

2.4 CONNECTORS

- A. Listed and labeled by an NRTL acceptable to authorities having jurisdiction for applications in which used and for specific types, sizes, and combinations of conductors and other items connected.

PART 3 - EXECUTION

3.1 APPLICATIONS

- A. Conductors: Install solid conductor for No. 8 AWG and smaller, and stranded conductors for No. 6 AWG and larger unless otherwise indicated.

3.2 EQUIPMENT GROUNDING

- A. Install insulated equipment grounding conductors with all feeders and branch circuits.
- B. Air-Duct Equipment Circuits: Install insulated equipment grounding conductor to duct-mounted electrical devices operating at 120 V and more, including air cleaners, heaters, dampers, humidifiers, and other duct electrical equipment. Bond conductor to each unit and to air duct and connected metallic piping.
- C. Water Heater, Heat-Tracing, and Antifrost Heating Cables: Install a separate insulated equipment grounding conductor to each electric water heater and heat-tracing cable. Bond conductor to heater units, piping, connected equipment, and components.

3.3 INSTALLATION

- A. Grounding Conductors: Route along shortest and straightest paths possible unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.
- B. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance except where routed through short lengths of conduit.
 1. Bonding to Structure: Bond straps directly to basic structure, taking care not to penetrate any adjacent parts.
 2. Bonding to Equipment Mounted on Vibration Isolation Hangers and Supports: Install bonding so vibration is not transmitted to rigidly mounted equipment.

3. Use exothermic-welded connectors for outdoor locations; if a disconnect-type connection is required, use a bolted clamp.
- C. Grounding and Bonding for Piping:
1. Bond each aboveground portion of gas piping system downstream from equipment shutoff valve.
- D. Bonding Interior Metal Ducts: Bond metal air ducts to equipment grounding conductors of associated fans, blowers, electric heaters, and air cleaners. Install bonding jumper to bond across flexible duct connections to achieve continuity.
- E. Connections: Make connections so possibility of galvanic action or electrolysis is minimized. Select connectors, connection hardware, conductors, and connection methods so metals in direct contact are galvanically compatible.
1. Use electroplated or hot-tin-coated materials to ensure high conductivity and to make contact points closer in order of galvanic series.
 2. Make connections with clean, bare metal at points of contact.
 3. Make aluminum-to-steel connections with stainless-steel separators and mechanical clamps.
 4. Make aluminum-to-galvanized-steel connections with tin-plated copper jumpers and mechanical clamps.
 5. Coat and seal connections having dissimilar metals with inert material to prevent future penetration of moisture to contact surfaces.

END OF SECTION 260526

SECTION 260533 - RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Metal conduits and fittings.
 - 2. Surface raceways.
 - 3. Boxes, enclosures, and cabinets.

1.2 DEFINITIONS

- A. GRC: Galvanized rigid steel conduit.
- B. IMC: Intermediate metal conduit.

1.3 ACTION SUBMITTALS

- A. Product Data: For conduit, fittings, and surface raceways.

PART 2 - PRODUCTS

2.1 METAL CONDUITS AND FITTINGS

- A. Metal Conduit:
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. AFC Cable Systems; a part of Atkore International.
 - b. Allied Tube & Conduit; a part of Atkore International.
 - c. Anamet Electrical, Inc.
 - d. Calconduit.
 - e. Electri-Flex Company.
 - f. FSR Inc.
 - g. Korkap.
 - h. NEC, Inc.
 - i. Opti-Com Manufacturing Network, Inc (OMNI).
 - j. O-Z/Gedney; a brand of Emerson Industrial Automation.
 - k. Patriot Aluminum Products, LLC.
 - l. Perma-Cote.
 - m. Picoma Industries, Inc.
 - n. Plasti-Bond.
 - o. Republic Conduit.
 - p. Southwire Company.
 - q. Thomas & Betts Corporation; A Member of the ABB Group.

- r. Topaz Electric; a division of Topaz Lighting Corp.
 - s. Western Tube and Conduit Corporation.
 - t. Wheatland Tube Company.
 - 2. Listing and Labeling: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
 - 3. GRC: Comply with ANSI C80.1 and UL 6.
 - 4. IMC: Comply with ANSI C80.6 and UL 1242.
 - 5. EMT: Comply with ANSI C80.3 and UL 797.
 - 6. FMC: Comply with UL 1; zinc-coated steel or aluminum.
 - 7. LFMC: Flexible steel conduit with PVC jacket and complying with UL 360.
- B. Metal Fittings:
- 1. Comply with NEMA FB 1 and UL 514B.
 - 2. Listing and Labeling: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
 - 3. Fittings, General: Listed and labeled for type of conduit, location, and use.
 - 4. Fittings for EMT:
 - a. Material: Steel or die cast.
 - b. Type: Compression.
 - 5. Expansion Fittings: PVC or steel to match conduit type, complying with UL 651, rated for environmental conditions where installed, and including flexible external bonding jumper.
- C. Joint Compound for IMC, GRC, or ARC: Approved, as defined in NFPA 70, by authorities having jurisdiction for use in conduit assemblies, and compounded for use to lubricate and protect threaded conduit joints from corrosion and to enhance their conductivity.

2.2 SURFACE RACEWAYS

- A. Listing and Labeling: Surface raceways shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Surface Metal Raceways: Galvanized steel with snap-on covers complying with UL 5. Manufacturer's standard enamel finish in color selected by Architect.
 - 1. Basis-of-Design Product: Subject to compliance with requirements, provide Wiremold / Legrand; or a comparable product by one of the following:
 - a. Hubbell Incorporated; Wiring Device-Kellems.
 - b. MonoSystems, Inc.
 - c. Panduit Corp.

2.3 BOXES, ENCLOSURES, AND CABINETS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - 1. Adalet.
 - 2. Crouse-Hinds, an Eaton business.

3. EGS/Appleton Electric.
4. Erickson Electrical Equipment Company.
5. FSR Inc.
6. Hoffman; a brand of Pentair Equipment Protection.
7. Hubbell Incorporated.
8. Hubbell Incorporated; Wiring Device-Kellems.
9. Kraloy.
10. Milbank Manufacturing Co.
11. MonoSystems, Inc.
12. Oldcastle Enclosure Solutions.
13. O-Z/Gedney; a brand of Emerson Industrial Automation.
14. Plasti-Bond.
15. RACO; Hubbell.
16. Spring City Electrical Manufacturing Company.
17. Stahlin Non-Metallic Enclosures.
18. Thomas & Betts Corporation; A Member of the ABB Group.
19. Topaz Electric; a division of Topaz Lighting Corp.
20. Wiremold / Legrand.

- B. General Requirements for Boxes, Enclosures, and Cabinets: Boxes, enclosures, and cabinets installed in wet locations shall be listed for use in wet locations.
- C. Sheet Metal Outlet and Device Boxes: Comply with NEMA OS 1 and UL 514A.
- D. Cast-Metal Outlet and Device Boxes: Comply with NEMA FB 1, ferrous alloy, Type FD, with gasketed cover.
- E. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.
- F. Cast-Metal Access, Pull, and Junction Boxes: Comply with NEMA FB 1 and UL 1773, galvanized, cast iron with gasketed cover.
- G. Box extensions used to accommodate new building finishes shall be of same material as recessed box.
- H. Device Box Dimensions: 4 inches square by 2-1/8 inches deep.
- I. Gangable boxes are prohibited.

PART 3 - EXECUTION

3.1 RACEWAY APPLICATION

- A. Outdoors: Apply raceway products as specified below unless otherwise indicated:
 1. Exposed Conduit: GRC.
 2. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFMC.
 3. Boxes and Enclosures, Aboveground: NEMA 250, Type 3R.
- B. Indoors: Apply raceway products as specified below unless otherwise indicated:

1. Exposed in unfinished or back of house spaces: EMT.
 2. Exposed, in finished spaces: Surface Metal Raceway.
 3. Concealed in Ceilings and Interior Walls and Partitions: EMT.
 4. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): FMC, except use LFMC in damp or wet locations.
 5. Damp or Wet Locations: IMC.
 6. Boxes and Enclosures: NEMA 250, Type 1, except use NEMA 250, Type 4 stainless steel in institutional and commercial kitchens and damp or wet locations.
- C. Minimum Raceway Size: 3/4-inch trade size.
- D. Raceway Fittings: Compatible with raceways and suitable for use and location.
1. Rigid and Intermediate Steel Conduit: Use threaded rigid steel conduit fittings unless otherwise indicated. Comply with NEMA FB 2.10.
 2. EMT: Use compression, steel or cast-metal fittings. Comply with NEMA FB 2.10.
 3. Flexible Conduit: Use only fittings listed for use with flexible conduit. Comply with NEMA FB 2.20.
- E. Install surface raceways only where indicated on Drawings or where concealment is not physically possible due to existing construction types and barriers.

3.2 INSTALLATION

- A. Comply with requirements in Section 260529 "Hangers and Supports for Electrical Systems" for hangers and supports.
- B. Comply with NECA 1 and NECA 101 for installation requirements except where requirements on Drawings or in this article are stricter. Comply with NECA 102 for aluminum conduits. Comply with NFPA 70 limitations for types of raceways allowed in specific occupancies and number of floors.
- C. Do not install raceways or electrical items on any rotating equipment.
- D. Do not fasten conduits onto the bottom side of a metal deck roof.
- E. Keep raceways at least 6 inches away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.
- F. Complete raceway installation before starting conductor installation.
- G. Arrange stub-ups so curved portions of bends are not visible above finished slab.
- H. Make bends in raceway using large-radius preformed ells. Field bending shall be according to NFPA 70 minimum radii requirements. Use only equipment specifically designed for material and size involved.
- I. Conceal conduit within finished walls, ceilings, and floors unless otherwise indicated. Install conduits parallel or perpendicular to building lines.
- J. Support conduit within 12 inches of enclosures to which attached.
- K. Stub-Ups to Above Recessed Ceilings:

1. Use EMT for raceways.
 2. Use a conduit bushing or insulated fitting to terminate stub-ups not terminated in hubs or in an enclosure.
- L. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound to threads of raceway and fittings before making up joints. Follow compound manufacturer's written instructions.
- M. Raceway Terminations at Locations Subject to Moisture or Vibration: Use insulating bushings to protect conductors including conductors smaller than No. 4 AWG.
- N. Terminate threaded conduits into threaded hubs or with locknuts on inside and outside of boxes or cabinets. Install bushings on conduits up to 1-1/4-inch trade size and insulated throat metal bushings on 1-1/2-inch trade size and larger conduits terminated with locknuts. Install insulated throat metal grounding bushings on service conduits.
- O. Install raceways square to the enclosure and terminate at enclosures with locknuts. Install locknuts hand tight plus 1/4 turn more.
- P. Do not rely on locknuts to penetrate nonconductive coatings on enclosures. Remove coatings in the locknut area prior to assembling conduit to enclosure to assure a continuous ground path.
- Q. Cut conduit perpendicular to the length. For conduits 2-inch trade size and larger, use roll cutter or a guide to make cut straight and perpendicular to the length.
- R. Install pull wires in empty raceways. Use polypropylene or monofilament plastic line with not less than 200-lb tensile strength. Leave at least 12 inches of slack at each end of pull wire. Cap underground raceways designated as spare above grade alongside raceways in use.
- S. Surface Raceways:
1. Install surface raceway with a minimum 2-inch radius control at bend points.
 2. Secure surface raceway with screws or other anchor-type devices at intervals not exceeding 48 inches and with no less than two supports per straight raceway section. Support surface raceway according to manufacturer's written instructions. Tape and glue are not acceptable support methods.
- T. Install raceway sealing fittings at accessible locations according to NFPA 70 and fill them with listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install raceway sealing fittings according to NFPA 70.
- U. Install devices to seal raceway interiors at accessible locations. Locate seals so no fittings or boxes are between the seal and the following changes of environments. Seal the interior of all raceways at the following points:
1. Where conduits pass from warm to cold locations, such as boundaries of refrigerated spaces.
 2. Conduit extending from interior to exterior of building.
 3. Conduit extending into pressurized duct and equipment.
 4. Where otherwise required by NFPA 70.
- V. Flexible Conduit Connections: Comply with NEMA RV 3. Use a maximum of 72 inches of flexible conduit for recessed and semirecessed luminaires, equipment subject to vibration, noise transmission, or movement; and for transformers and motors.

1. Use LFMC in damp or wet locations.
 - W. Mount boxes at heights indicated on Drawings. If mounting heights of boxes are not individually indicated, give priority to ADA requirements. Install boxes with height measured to center of box unless otherwise indicated.
 - X. Recessed Boxes in Masonry Walls: Saw-cut opening for box in center of cell of masonry block, and install box flush with surface of wall. Prepare block surfaces to provide a flat surface for a raintight connection between box and cover plate or supported equipment and box.
 - Y. Horizontally separate boxes mounted on opposite sides of walls so they are not in the same vertical channel.
 - Z. Locate boxes so that cover or plate will not span different building finishes.
 - AA. Support boxes of three gangs or more from more than one side by spanning two framing members or mounting on brackets specifically designed for the purpose.
 - BB. Fasten junction and pull boxes to or support from building structure. Do not support boxes by conduits.
 - CC. Set metal floor boxes level and flush with finished floor surface.
- 3.3 SLEEVE AND SLEEVE-SEAL INSTALLATION FOR ELECTRICAL PENETRATIONS
- A. Install Osleeves and sleeve seals at penetrations of exterior floor and wall assemblies. Comply with requirements in Section 260544 "Sleeves and Sleeve Seals for Electrical Raceways and Cabling."
- 3.4 FIRESTOPPING
- A. Install firestopping at penetrations of fire-rated floor and wall assemblies. Comply with requirements in Section 078413 "Penetration Firestopping."
- 3.5 PROTECTION
- A. Protect coatings, finishes, and cabinets from damage and deterioration.
 1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.

END OF SECTION 260533

SECTION 265119 - LED INTERIOR LIGHTING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes LED interior luminaires:

1.2 DEFINITIONS

- A. CCT: Correlated color temperature.
- B. CRI: Color Rendering Index.
- C. Fixture: See "Luminaire."
- D. IP: International Protection or Ingress Protection Rating.
- E. LED: Light-emitting diode.
- F. Lumen: Measured output of lamp and luminaire, or both.
- G. Luminaire: Complete lighting unit, including lamp, reflector, and housing.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Arrange in order of luminaire designation.
 - 2. Include data on features, accessories, and finishes.
 - 3. Include physical description and dimensions of luminaires.
 - 4. Include emergency lighting units, including batteries and chargers.
 - 5. Include life, output (lumens, CCT, and CRI), and energy-efficiency data.
 - 6. Photometric data and adjustment factors based on laboratory tests, complying with IES "Lighting Measurements Testing and Calculation Guides" for each luminaire type. The adjustment factors shall be for lamps and accessories identical to those indicated for the luminaire as applied in this Project.
 - a. Manufacturers' Certified Data: Photometric data certified by manufacturer's laboratory with a current accreditation under the National Voluntary Laboratory Accreditation Program for Energy Efficient Lighting Products.
- B. Luminaire Photometric Data Testing Laboratory Qualifications: Luminaire manufacturer's laboratory that is accredited under the NVLAP for Energy Efficient Lighting Products.
- C. Provide luminaires from a single manufacturer for each luminaire type.
- D. Each luminaire type shall be binned within a three-step MacAdam Ellipse to ensure color consistency among luminaires.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Protect finishes of exposed surfaces by applying a strippable, temporary protective covering before shipping.

1.5 WARRANTY

- A. Warranty: Manufacturer and Installer agree to repair or replace components of luminaires that fail in materials or workmanship within specified warranty period.
- B. Warranty Period: Five year(s) from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Ambient Temperature: 41 to 104 deg F.
 - 1. Relative Humidity: Zero to 95 percent.
- B. Altitude: Sea level to 1000 feet.

2.2 LUMINAIRE REQUIREMENTS

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Factory-Applied Labels: Comply with UL 1598. Include recommended lamps. Locate labels where they will be readily visible to service personnel, but not seen from normal viewing angles when lamps are in place.
 - 1. Label shall include the following lamp characteristics:
 - a. "USE ONLY" and include specific lamp type.
 - b. Lamp diameter, shape, size, wattage, and coating.
 - c. CCT and CRI.
- C. Recessed luminaires shall comply with NEMA LE 4.

2.3 MATERIALS

- A. Metal Parts:
 - 1. Free of burrs and sharp corners and edges.
 - 2. Sheet metal components shall be steel unless otherwise indicated.
 - 3. Form and support to prevent warping and sagging.
- B. Steel:
 - 1. ASTM A 36/A 36M for carbon structural steel.

2. ASTM A 568/A 568M for sheet steel.

C. Galvanized Steel: ASTM A 653/A 653M.

D. Aluminum: ASTM B 209.

2.4 METAL FINISHES

A. Variations in finishes are unacceptable in the same piece. Variations in finishes of adjoining components are acceptable if they are within the range of approved Samples and if they can be and are assembled or installed to minimize contrast.

2.5 LUMINAIRE SUPPORT

A. Comply with requirements in Section 260529 "Hangers and Supports for Electrical Systems" for channel and angle iron supports and nonmetallic channel and angle supports.

B. Single-Stem Hangers: 1/2-inch steel tubing with swivel ball fittings and ceiling canopy. Finish same as luminaire.

C. Wires: ASTM A 641/A 641 M, Class 3, soft temper, zinc-coated steel, 12 gage.

D. Rod Hangers: 3/16-inch minimum diameter, cadmium-plated, threaded steel rod.

E. Hook Hangers: Integrated assembly matched to luminaire, line voltage, and equipment with threaded attachment, cord, and locking-type plug.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Examine roughing-in for luminaire to verify actual locations of luminaire and electrical connections before luminaire installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Comply with NECA 1.

B. Install luminaires level, plumb, and square with ceilings and walls unless otherwise indicated.

C. Supports:

1. Sized and rated for luminaire weight.

2. Able to maintain luminaire position after cleaning and relamping.

3. Provide support for luminaire without causing deflection of ceiling or wall.

4. Luminaire-mounting devices shall be capable of supporting a horizontal force of 100 percent of luminaire weight and a vertical force of 400 percent of luminaire weight.

D. Flush-Mounted Luminaires:

1. Secured to outlet box.
2. Attached to ceiling structural members at four points equally spaced around circumference of luminaire.
3. Trim ring flush with finished surface.

E. Wall-Mounted Luminaires:

1. Attached to structural members in walls.
2. Do not attach luminaires directly to gypsum board.

F. Ceiling-Grid-Mounted Luminaires:

1. Secure to any required outlet box.
2. Secure luminaire to the luminaire opening using approved fasteners in a minimum of four locations, spaced near corners of luminaire.
3. Use approved devices and support components to connect luminaire to ceiling grid and building structure in a minimum of four locations, spaced near corners of luminaire.

- G. Comply with requirements in Section 260519 "Low-Voltage Electrical Power Conductors and Cables" for wiring connections.

3.3 IDENTIFICATION

- A. Identify system components, wiring, cabling, and terminals. Comply with requirements for identification specified in Section 260553 "Identification for Electrical Systems."

3.4 FIELD QUALITY CONTROL

A. Perform the following tests and inspections:

1. Operational Test: After installing luminaires, switches, and accessories, and after electrical circuitry has been energized, test units to confirm proper operation.
2. Test for Emergency Lighting: Interrupt power supply to demonstrate proper operation. Verify transfer from normal power to battery power and retransfer to normal.

- B. Luminaire will be considered defective if it does not pass operation tests and inspections.

- C. Prepare test and inspection reports.

END OF SECTION 265119



City of Rockville
Rockville, Maryland

BID PROPOSAL FORMS

INVITATION FOR BID # 07-25 TWINBROOK COMMUNITY CENTER AND ANNEX RESTROOM RENOVATION

THESE FORMS, UNLESS NOTED OTHERWISE, MUST BE
COMPLETED, SIGNED
AND
SUBMITTED

FAILURE TO COMPLY WILL
RESULT IN THE
DISQUALIFICATION OF YOUR BID

In response to the advertisement by the City of Rockville inviting bids for the work and in conformance with the bid document on file in the Purchasing Division of the City of Rockville, we hereby certify that we are the only person, or persons interested in this bid proposal as principals, and that an examination has been made of the work site, the specifications, the plans and the bid documents. We propose to furnish all necessary machinery, materials, equipment, tools, labor and other means of construction required to complete the project. Bidders must bid all items.

The following items shall be performed per the referenced Standard Specification and the Contract Documents. Measurement and Payment shall be as described in the Technical Specifications unless otherwise specified in the Contract Documents. All work items described in the Contract Documents that are not referenced by a specific pay item shall be considered incidental to all other items in the Contract Documents.

**CITY OF ROCKVILLE
ROCKVILLE, MARYLAND**

**INVITATION FOR BID # 07-25
TWINBROOK COMMUNITY CENTER AND ANNEX RESTROOM RENOVATION**

BID PROPOSAL FORM

THIS FORM MUST BE COMPLETED, SIGNED AND RETURNED

IN ACCORDANCE WITH ALL TERMS, SPECIFICATIONS AND REQUIREMENTS, WE PROPOSE TO FURNISH ALL LABOR, EQUIPMENT, MATERIALS AND SERVICES AND THE PERFORMANCE OF ALL WORK NECESSARY TO CONSTRUCT THE 6 TAFT COURT BUILDING RENOVATION PROJECT. PROVIDE PRICING BELOW TO INCLUDE OVERHEAD, PROFIT, TAXES, INSURANCE AND OTHER APPLICABLE FEES AND COSTS.

DIVISION # (Page A-105) (Of Plans)	DESCRIPTION	UNIT	EST QTY	UNIT PRICE	TOTAL
1	General Requirements	LS	1		
3	Concrete	LS	1		
4	Masonry	LS	1		
6	Wood and Plastics	LS	1		
8	Doors and Windows /Openings	LS	1		
9	Finishes	LS	1		
16	Electrical	LS	1		
A. BASE BID TOTAL					
ADD ALT 1	Alternate No. 1 – Specification 12300: Replace Floor And Wall Tile	LS	1		
B. BID ALTERNATIVE NO. 1 - TOTAL					
ADD ALT 2	Alternate No. 2 – Install And Supply Adult Changing Table In The Annex Building	LS	1		
C. BID ALTERNATIVE NO. 2 - TOTAL					

TOTAL BID PRICE:

A. Base Bid – Total	
B. Bid Alternative No. 1 – Total	
C. Bid Alternative No. 2 – Total	
Total BID (Sum A + B + C)	

Write the Total Bid Price for the IFB **Invitation For Bid # 07-25 Twinbrook Community Center And Annex Restroom Renovation** in words:

The City reserves the right to not use the bid alternatives (Alternative No. 1 and/or Alternatives No. 2) in the determination of the low bid value. In the event the City decides to award any of the bid alternatives, those bid items will be used in the determination of the low bid value.

By submitting this offer I acknowledge receipt of and incorporation into this offer of the following Addenda (check each applicable box):

Addendum #1 ☐ , Addendum #2 ☐ , Addendum #3 ☐ , Addendum #4 ☐ , Addendum #5 ☐ , Addendum #6 ☐

CONTRACT DURATION

This contract will begin 10 working days from the date of issuance of a notice to proceed. All work associated with this project must be completed within 120 calendar days after the notice to proceed has been issued. Time is of the essence.

Confirm your ability to meet the above schedule. _____ YES _____ NO

This bid and its Firm Fixed Prices shall remain valid through June 30, 2025 for acceptance by the City.

The City of Rockville reserves the right to reject any or all bids, offer or proposals, to waive informalities, and to accept all or any part of any bid, offer proposal as they may deem to be in the best interest of the City of Rockville.

I hereby certify that I have read and understand the requirements of this Invitation for Bid No. 07-25 and, that I, as the Bidder, will comply with all requirements, and that I am duly authorized to execute this proposal/offer document and any contract(s) and/or other transactions required by award of this Invitation For Bid.

Comprehensive Signature Page**BIDDER MUST COMPLETE UNDER APPROPRIATE SECTION & RETURN WITH BID****Instruction for Signature on Bid Proposal**

The bid, if submitted by an individual, shall be signed by an individual; if submitted by a partnership, shall be signed by such member or members of the partnership as have authority to bind the partnership; if submitted by a corporation the same shall be signed by the President and attested by the Secretary or an Assistant Secretary. If not signed by the President as aforesaid, there must be attached a copy of that portion of the By-Laws, or a copy of a Board resolution, duly certified by the Secretary, showing the authority of the person so signing on behalf of the corporation. In lieu thereof, the corporation may file such evidence with the Administration, duly certified by the Secretary, together with a list of the names of those officers having authority to execute documents on behalf of the corporation, duly certified by the Secretary, which listing shall remain in full force and effect until such time as the Administration is advised in writing to the contrary. In any case where a bid is signed by an Attorney in Fact the same must be accompanied by a copy of the appointing document, duly certified.

IF AN INDIVIDUAL					
Individual Name					
DBA					
Address					
City		State		ZIP	
Signature					
Printed Name					
Title					
Date					
Witness Signature					
Witness Name					
Witness Title					
Date					

IF A PARTNERSHIP					
Name of Partnership					
Address					
City		State		ZIP	
Member Signature					
Printed Name					
Title					
Date					
Witness Signature					
Witness Name					
Witness Title					
Date					

IF A CORPORATION					
Name of Corporation					
Address					
City		State		ZIP	
Fed ID or SSN					
State Of Incorporation					
Signature					
Printed Name					
Title					
Date					
Witness Signature					
Witness Name					
Witness Title					
Date					

CONTACT FOR ADMINISTRATION	
Individual Name	
e-mail	
Telephone	
FAX	
EMERGENCY SERVICE (24hr.) PHONE	

REMITTANCE ADDRESS (if different than organizational address above)					
Address					
City		State		ZIP+4	

MFD-V INFORMATION	
MFD-V Information	<i>For informational purposes only</i> – Is your company certified as a Minority, Female, Disabled or Veteran (MFD-V) business: _____ yes _____ no _____ I choose not to respond

AFFIDAVIT OF QUALIFICATION TO CONTRACT WITH A PUBLIC BODY
BIDDER MUST COMPLETE, SIGN, AND RETURN WITH BID

I hereby affirm that: I am the _____ (insert title) and the duly authorized representative of
_____ (insert organization name) whose address is _____

And, that I possess the legal authority to make this affidavit on behalf of myself and the firm for which I am acting.

I affirm:

1. Except as described in Paragraph 2 below, neither I nor the above firm nor, to the best of my knowledge, any of its controlling stockholders, officers, directors, or partners, performing contracts with any public body (the State or any unit thereof, or any local governmental entity in the state, including any bi-county or multi-county entity), has:

A. been convicted under the laws of the State of Maryland, any other state, or the United States of any of the following:

- (1) bribery, attempted bribery, or conspiracy to bribe.
- (2) a criminal offense incident to obtaining, attempting to obtain, or performing a public or private contract.
- (3) fraud, embezzlement, theft, forgery, falsification or destruction of records, or receiving stolen property.
- (4) a criminal violation of an anti-trust statute.
- (5) a violation of the Racketeer Influenced and Corrupt Organization act, or the Mail Fraud Act, for acts in connection with the submission of bids or proposals for a public or private contract.
- (6) a violation of Section 14-308 of the State Finance and Procurement Article of the Annotated Code of Maryland.
- (7) conspiracy to commit any of the foregoing.

B. pled *nolo contendere* to, or received probation before verdict for, a charge of any offense set forth in subsection A of this paragraph.

C. been found civilly liable under an anti-trust statute of the State of Maryland, another state, or the United States for acts or omissions in connection with the submission of bids or proposals for a public or private contract.

D. during the course of an official investigation or other proceeding, admitted, in writing or under oath, an act or omission that would constitute grounds for conviction or liability under any law or statute described in subsection A or C of this paragraph.

2. [State "none," or as appropriate, list any conviction, plea or admission as described in Paragraph 1 above, with the date, court, official or administrative body, the individuals involved and their position with the firm, and the sentence or disposition, if any]. _____

3. I further affirm that neither I nor the above firm shall knowingly enter into a contract with the Mayor and Council of Rockville under which a person or business debarred or suspended from contracting with a public body under Title 16 of the State Finance and Procurement Article of the Annotated Code of Maryland, will provide, directly or indirectly, supplies, services, architectural services, construction related services, leases of real property, or construction.

I acknowledge that this Affidavit shall be furnished to the Mayor and Council of Rockville and, where appropriate, to the State Board of Public Works and to the Attorney General. I acknowledge that I am executing this Affidavit in compliance with the provisions of Title 16 of the State Finance and Procurement Article of the Annotated Code of Maryland which provides that persons who have engaged in certain prohibited activity may be disqualified, either by operation in law or after a hearing, from entering into contracts with the Mayor and Council of Rockville. I further acknowledge that if the representations set forth in this Affidavit are not true and correct, the Mayor and Council of Rockville may terminate any contract awarded, and take any other appropriate action.

Signature _____

Printed Name _____

Title _____

Date _____

NON—COLLUSION AFFIDAVIT
BIDDER MUST COMPLETE, SIGN, AND RETURN WITH BID

I hereby affirm that: I am the _____ (insert title) and the duly authorized representative of _____ (insert organization name) whose address is _____

And, that I possess the legal authority to make this affidavit on behalf of myself and the firm for which I am acting.

I affirm:

1. I am fully informed respecting the preparation and contents of the attached bid and of all pertinent circumstances respecting such bid;
2. Such bid is genuine and is not a collusive or sham bid
3. Neither the said bidder nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly with any other bidder, firm or person to submit a collusive or sham bid in connection with the Contract for which the attached bid has been submitted or to refrain from bidding in connection with Contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other bidder, firm or person to fix the price or prices in the attached bid or of any other bidder, or to fix any overhead, profit or cost element of the bid price or the bid price of any other bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the Mayor and Council of Rockville, Maryland (Local Public Agency) or any person interested in the proposed Contract; and
4. The price or prices quoted in the attached bid are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affiant. I do solemnly declare and affirm under the penalties of perjury that the contents of these affidavits are true and correct.

Signature

Printed Name

Title

Date

BUILDING RENOVATIONS CONSTRUCTION EXPERIENCE

BIDDER REFERENCE FORM

BIDDER MUST COMPLETE AND SUBMIT WITH BID

The City of Rockville reserves the right to reject bids from any company not meeting the minimum qualifications. The Bidder shall be a competent and experienced contractor with an established reputation within the community. The bidder shall have performed similar work for a minimum period of five (5) years. He shall furnish a representative list of five (5) projects involving work as specified, two of which shall be the last jobs completed. The City may make such investigations as it deems necessary to determine the ability of the Bidder to perform the work, and the Bidder shall furnish to the City all such information and data for this purpose as the City may request.

Bidder Name	

#1 Project Name			
Project Owner's Name			
Project Site Address			
Project Owner's Contact Name			
Project Owner's Contact Telephone			
Project Owner's Contact e-mail			
Contract Value	\$		
Scheduled completion date		Percent complete	
Description of Project Work			
Name of your project foreman			

BIDDER REFERENCE FORM - BIDDER MUST COMPLETE AND SUBMIT WITH BID

#2 Project Name			
Project Owner's Name			
Project Site Address			
Project Owner's Contact Name			
Project Owner's Contact Telephone			
Project Owner's Contact e-mail			
Contract Value	\$		
Scheduled completion date		Percent complete	
Description of Project Work			
Name of your project foreman			

#3 Project Name			
Project Owner's Name			
Project Site Address			
Project Owner's Contact Name			
Project Owner's Contact Telephone			
Project Owner's Contact e-mail			
Contract Value	\$		
Scheduled completion date		Percent complete	
Description of Project Work			
Name of your project foreman			

BIDDER REFERENCE FORM - BIDDER MUST COMPLETE AND SUBMIT WITH BID

#4 Project Name			
Project Owner's Name			
Project Site Address			
Project Owner's Contact Name			
Project Owner's Contact Telephone			
Project Owner's Contact e-mail			
Contract Value	\$		
Scheduled completion date		Percent complete	
Description of Project Work			
Name of your project foreman			

#5 Project Name			
Project Owner's Name			
Project Site Address			
Project Owner's Contact Name			
Project Owner's Contact Telephone			
Project Owner's Contact e-mail			
Contract Value	\$		
Scheduled completion date		Percent complete	
Description of Project Work			
Name of your project foreman			

SUB-CONTRACTOR REFERENCE FORM
BIDDER MUST COMPLETE AND SUBMIT WITH BID

SUBMIT A SEPARATE REFERENCE FORM FOR EACH PROPOSED SUBCONTRACTOR

Subcontractor's Name			
Address			
Telephone			
Subcontractor's Contact Name			
Description of Work to be Subcontracted			

#1 Reference Organization Name			
Address			
Contact Name			
Contact Name Telephone			
Contact Name e-mail			
Contract Value	\$		
Scheduled completion date		Percent complete	
Description of Project Work			

SUB-CONTRACTOR REFERENCE FORM
BIDDER MUST COMPLETE AND SUBMIT WITH BID

#2 Reference Organization Name			
Address			
Contact Name			
Contact Name Telephone			
Contact Name e-mail			
Contract Value	\$		
Scheduled completion date		Percent complete	
Description of Project Work			

#3 Reference Organization Name			
Address			
Contact Name			
Contact Name Telephone			
Contact Name e-mail			
Contract Value	\$		
Scheduled completion date		Percent complete	
Description of Project Work			

BIDDER'S QUESTIONNAIRE
BIDDER MUST COMPLETE AND SUBMIT WITH BID

In order to be considered for award, the Bidder must complete this questionnaire in its entirety and submit it to the Purchasing Manager within the time specified. The bidder must answer all questions. If additional space is required, attach continuation sheets and clearly indicate the question being answered. The City reserves the right to verify any information contained within this report and to request additional information or clarification. The City reserves the right to reject the bid of a bidder who has previously failed to perform properly or to complete in a timely manner contracts of a similar nature, or if investigation shows the bidder unable to perform the requirements of the Contract or if the bidder fails to complete and submit the Bidder's Questionnaire in its entirety. If additional sheets are necessary please attach to this form and reference the applicable number.

Bidder's Name			
Bidder's Address			
City		State / Zip	
Telephone		Fax Number	
Organized under the laws of State of:			
BIDDER'S AUTHORIZED REPRESENTATIVE'S SIGNATURE BELOW		DATE	
			
Print Name:			
Title:			

1. ORGANIZATION

1.1 How many years has your organization been in business as a Contractor?

1.2 How many years has your organization been in business under its present business name?

1.3 Under what **other** or former names has your organization operated?

1.4 If your organization is a corporation, answer the following:

Date of incorporation:

State of incorporation:

President's name:

Vice-president's name(s):

Secretary's name:

Treasurer's name:

1.5 If your organization is a partnership, answer the following:

Date of organization:

Type of partnership (if applicable):

Name(s) of general partner(s):

1.6 If your organization is individually owned, answer the following:

Date of organization:

Name of owner:

1.7 If the form of your organization is other than those listed above, describe it and name the principals:

2. LICENSING

2.1 List jurisdictions and trade categories in which your organization is legally qualified to do business, and indicate registration or license numbers, if applicable.

3. EXPERIENCE

3.1 List the categories of work that your organization normally performs with its own forces.

3.2 Has your organization ever failed to complete any work awarded to it? If yes, provide details on a separate sheet. NO: _____ YES: _____

3.3 Are there any judgment, claims, arbitration, proceedings or suits pending or outstanding against your organization or its officers? If yes, provide details. NO: _____ YES: _____

3.4 Within the past five years, has any officer or principal of your organization ever been an officer or principal of another organization when it failed to complete a construction contract? If yes, provide details. NO: _____ YES: _____

3.5 Within the last two years, has any owner of any project threatened to impose or imposed liquidated damages against your organization? If yes, provide details. NO: _____ YES: _____

3.6 Within the last two years, has your organization constructed any projects where the date of substantial completion was more than 30 days after the contract completion date as determined by the contract and any changes orders? If yes, provide details. NO: _____ YES: _____

3.7 Within the last 2 years, has your organization constructed any projects where the change orders exceeded 10% of the contract price? If yes, provide details. NO: _____ YES: _____

3.8 State the total worth of work in progress and under contract:

In Progress	\$
Under Contract	\$

3.9 State the average annual amount of construction work performed during the past five years:

\$

4. FINANCIAL

4.1 State that you will provide a copy of your firm's audited financial statements for the past two (2) years, if requested, by the City of Rockville. YES: _____ NO: _____

4.2 Is your firm currently for sale or involved in any transaction to expend or to become acquired by another business entity? If yes, please explain the impact both in organizational and directional terms. NO: _____ YES: _____

4.3 Is your firm currently in default on any loan agreement or financing agreement with any bank, financial institution, or other entity? If yes, specify date(s), details, circumstances, and prospects for resolution. NO: _____ YES: _____

5. SAFETY

5.1 Has your organization been cited by OSHA (or State equivalent) in the past five years? If so, provide a copy of the citation(s). NO: _____ YES: _____

5.2 Has your organization experienced a work-related fatality in the past 10 years? If so, provide details. NO: _____ YES: _____

5.3 Provide copies of the last 3-years OSHA Form 300A or OSHA 300 Log. Please omit any personally identifiable or confidential information.

5.4 Provide a copy of your current Workers' Compensation Experience Rating from the NCCI.

5.5 Does your organization have a written safety program? NO: _____ YES: _____

5.5.1 Describe the safety training programs offered to all employees on the elements of the safety program.

5.6.2 When was the last year the written safety program was audited or updated?

5.6.3 Provide an overview of the elements of your written safety program (i.e., table of contents). (This may be returned to non-awarded bidders.)

5.7 Does your organization hire subcontractors? NO: _____ YES: _____

5.7.1 Does your organization conduct pre-contractor qualification of these subcontractors specifically focusing on their safety performance? NO: _____ YES: _____

5.7.2 Describe how your organization manages the safety performance of subcontractors on the jobsite.

5.7.3 Does your organization have a written policy addressing subcontractor's responsibility for complying with OSHA regulations on jobsites? (i.e., OSHA's multi-employer citation policy).

NO: _____ YES: _____

CERTIFICATION

The above statements are certified to be true and accurate.

BY: _____

Signature

Date

Print Signature/Title



SAMPLE
Do Not Complete or Return

CONTRACT PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: That we (1) _____
a (2) _____
hereinafter called "Principal" and (3) _____
of _____, State of _____ hereinafter called the "Surety", are
held and firmly bound unto (4) The Mayor and Council of Rockville, Maryland, hereinafter called
"City", in the penal sum of *(100% of Contract Amount)* _____ (\$ _____) in
lawful money of the United States, for the payment of which sum well and truly to be made, we bind
ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these
presents.

THE CONDITION OF THIS OBLIGATION is such that Whereas, the Principal entered into a
certain contract with the City, dated the _____ day of _____, 2025, a copy of which
is hereto attached and made a part hereof for the construction of IFB 07-25 TWINBROOK
COMMUNITY CENTER AND ANNEX RESTROOM RENOVATION.

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the
undertakings, covenants, terms, conditions, and agreements of said contract during the original term
thereof, and any extensions thereof which may be granted by the City, with or without notice to the
Surety, and if he shall satisfy all claims and demands incurred under such contract, and shall fully
indemnify and save harmless the City from all costs and damages which it may suffer by reason of
failure to do so, and shall reimburse and repay the City all outlay and expense which the City may
incur in making good any default, then this obligation shall be void; otherwise to remain in full force
and effect.

PROVIDED, FURTHER, that the said Surety, for value received hereby stipulates and agrees
that no change, extension of time, alteration or addition to the terms of the contract or to the work to
be performed thereunder or the specifications accompanying the same shall in any way affect its
obligation on this bond, and it does hereby waive notice of any such change, extension of time,
alteration or addition to the terms of the contract or to the work or to the specifications.

CONTRACT PERFORMANCE BOND

PAGE 2

PROVIDED, FURTHER, that no final settlement between the City and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in two (2) counterparts, each one of which shall be deemed an original, this the _____ day of _____, 2025.

ATTEST:

_____	_____
Corporate Secretary or Asst. Secretary	Principal
_____	By _____ (Seal)
(Print or Type Name and Title)	President or Vice President
_____	_____
(Print or Type Name and Title)	(Print or Type Name and Title)
_____	_____
	(Address)

ATTEST:

_____	_____
Witness as to Surety	Surety
_____	By _____ (Seal)
(Print or Type Name and Title)	Attorney-in-Fact
_____	_____
(Address)	(Print or Type Name)
_____	_____
	(Address)

NOTE: Date of Bond must not be prior to date of Contract.

- (1) Correct name of Contractor
- (2) A Corporation, a Partnership or an Individual
- (3) Name of Surety
- (4) Name of City
- (5) If Contract is Partnership, all partners should execute bond



SAMPLE
Do Not Complete or Return

CONTRACT PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: That we (1) _____
_____ a (2) _____
hereinafter called "Principal" and (3) _____
of _____, State of _____ hereinafter called the
"Surety", are held and firmly bound unto (4) The Mayor and Council, of Rockville, Maryland, hereinafter
called "City", in the penal sum of (*100% of Contract Amount*) _____ (\$_____) in lawful money
of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs,
executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that Whereas, the Principal entered into a certain
contract with the City, dated the _____ day of _____, 2025, a copy of which is hereto
attached and made a part hereof for the construction of: IFB 07-25 TWINBROOK COMMUNITY
CENTER AND ANNEX RESTROOM RENOVATION.

NOW, THEREFORE, if the Principal shall promptly make payment to all persons, firms,
subcontractors, and corporations furnishing materials for or performing labor in the prosecution of the work
provided for in such contract, and any authorized extension or modification thereof, including all amounts
due for materials, lubricants, oil, gasoline, coal, repairs on machinery, equipment and tools, consumed or
used in connection with the construction of such work, and all insurance premiums on said work, and for
all labor, performed in such work whether by subcontractor or otherwise, then this obligation shall be void;
otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said surety, for value received hereby stipulates and agrees that no
change, extension of time, alteration or addition to the terms of the contract or to the work to be performed
thereunder or the specifications accompanying the same shall in any way affect its obligation on this bond,
and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of
the contract or to the work or to the specifications.

CONTRACT PAYMENT BOND

PAGE 2

PROVIDED, FURTHER, that no final settlement between the City and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in two (2) counterparts, each one of which shall be deemed an original, this the ____ day of _____ 2025.

ATTEST:

Principal

Corporate Secretary or Asst. Secretary

By _____ (Seal)
President or Vice President

(Print or Type Name and Title)

(Print or Type Name and Title)

(Address)

ATTEST:

Surety

Witness as to Surety

By _____ (Seal)
Attorney-in-Fact

(Print or Type Name and Title)

(Print or Type Name)

(Address)

(Address)

NOTE: Date of Bond must not be prior to date of Contract.

- (1) Correct name of Contractor
- (2) A Corporation, a Partnership or an Individual
- (3) Name of Surety
- (4) Name of City
- (5) If Contract is Partnership, all partners should execute bond.



SAMPLE ONLY
Do Not Complete Or Return

STANDARD FORM OF AGREEMENT BETWEEN THE CITY OF ROCKVILLE
AND CONTRACTOR

NOTE:

**PAGE INTENTIONALLY
BLANK**

**STANDARD FORM
AGREEMENT TO BE
DEVELOPED PRIOR TO
AWARD**

Chapter 31B – Noise Control

- § 31B-2. Definitions.
- § 31B-3. Regulations.
- § 31B-4. Noise control advisory board.
- § 31B-5. Noise level and noise disturbance violations.
- § 31B-6. Noise level and noise disturbance standards for construction.
- § 31B-7. Measurement of sound.
- § 31B-8. Noise sensitive areas.
- § 31B-9. Leafblowers.
- § 31B-10. Exemptions.
- § 31B-11. Waivers.
- § 31B-12. Enforcement and penalties.

Sec. 31B-1. Declaration of policy.

- (a) The County Council finds that excessive noise harms public health and welfare and impairs enjoyment of property. The intent of this Chapter is to control noise sources to protect public health and welfare and to allow the peaceful enjoyment of property. This Chapter must be liberally construed to carry out this intent.
- (b) The Department of Environmental Protection administers this Chapter.
 - (1) The Department must coordinate noise abatement programs of all County agencies, municipalities, and regional agencies.
 - (2) A County agency, municipality in which this Chapter applies, or regional authority subject to County law must not adopt a standard or regulation that is less stringent than this Chapter or any regulation adopted under this Chapter.
 - (3) The Director may form an Interagency Coordinating Committee to assist the Director in coordinating noise control policy. If the Director forms the Committee, the Director must designate an individual to chair the Committee. The members of the Committee should be designated by County, local, and regional agencies that the Director invites to participate.
 - (4) The Department must establish procedures to identify and reduce noise sources when the County plans and issues permits, variances, exemptions, or approvals.
 - (5) The Department should make recommendations to the County Executive, County Council, and Planning Board regarding noise control policy, regulations, enforcement, and noise sensitive areas. (1996 L.M.C., ch. 32, § 1.)

Editor's note—See County Attorney Opinion dated 3/16/92 explaining that the Washington Metropolitan Area Transportation Authority (esp. Metrorail) is subject to the County's noise control law, although an exemption may be obtained if it is in the public interest.

Sec. 31B-2. Definitions.

In this Chapter, the following words and phrases have the following meanings:

- (a) *Construction* means temporary activities directly associated with site preparation, assembly, erection, repair, alteration, or demolition of structures or roadways.
- (b) *dba* means decibels of sound, as determined by the A-weighting network of a sound level meter or by calculation from octave band or one-third octave band data.
- (c) *Daytime* means the hours from 7 a.m. to 9 p.m. on weekdays and 9 a.m. to 9 p.m. on weekends and holidays.

- (d) Decibel means a unit of measure equal to 10 times the logarithm to the base 10 of the ratio of a particular sound pressure squared to the standard reference pressure squared. For this Chapter, the standard reference pressure is 20 micropascals.
- (e) *Department* means the Department of Environmental Protection.
- (f) *Director* means the Director of the Department of Environmental Protection or the Director's authorized designee.
- (g) *Enforcement officer* means:
 - (1) for a noise originating from any source:
 - (A) an employee or agent of the Department designated by the Director to enforce this Chapter;
 - (B) a police officer; or
 - (C) a person authorized under Section 31B-12(a) to enforce this Chapter;
 - (D) a person authorized by a municipality to enforce this Chapter; or
 - (2) for a noise originating from an animal source, the Director of the Animal Services Division in the Police Department or the Director's authorized designee.
- (h) *Impulsive noise* means short bursts of a acoustical energy, measured at a receiving property line, characterized by a rapid rise to a maximum pressure followed by a somewhat slower decay, having a duration not greater than one second and a field crest factor of 10 dBA or more. Impulsive noise may include, for example, noise from weapons fire, pile drivers, or punch presses.
- (i) *Leaf blower* means any portable device designed or intended to blow, vacuum, or move leaves or any other type of unattached debris or material by generating a concentrated stream of air. Leafblower includes devices or machines that accept vacuum attachments.
- (j) *Nighttime* means the hours from 9 p.m. to 7 a.m. weekdays and 9 p.m. to 9 a.m. weekends and holidays.
- (k) *Noise* means sound, created or controlled by human activity, from one or more sources, heard by an individual.
- (l) *Noise area* means a residential or non-residential noise area:
 - (1) *Residential noise area* means land in a zone established under Section 59-C-1.1, Section 59-C-2.1, Division 59-C-3, Section 59-C-6.1, Section 59-C-7.0, Section 59-C-8.1, Section 59-C-9.1 for which the owner has not transferred the development rights, or Section 59-C-10.1, or land within similar zones established in the future or by a political subdivision where Chapter 59 does not apply.
 - (2) *Non-residential noise area* means land within a zone established under Section 59-C-4.1, Section 59-C-5.1, Section 59-C-9.1 for which the owner has transferred the development rights, or Division 59-C-12, or land in similar zones established in the future or by a political subdivision where Chapter 59 does not apply.
- (m) *Noise disturbance* means any noise that is:
 - (1) unpleasant, annoying, offensive, loud, or obnoxious;
 - (2) unusual for the time of day or location where it is produced or heard; or
 - (3) detrimental to the health, comfort, or safety of any individual or to the reasonable enjoyment of property or the lawful conduct of business because of the loudness, duration, or character of the noise.
- (n) *Noise sensitive area* means land designated by the County Executive as a noise sensitive area under Section 31B-8.

- (o) *Noise-suppression plan* means a written plan to use the most effective noise-suppression equipment, materials, and methods appropriate and reasonably available for a particular type of construction.
- (p) *Person* means an individual, group of individuals, corporation, firm, partnership, or voluntary association; or a department, bureau, agency, or instrument of the County or any municipality, or of any other government to the extent allowed by law.
- (q) *Prominent discrete tone* means a sound, often perceived as a whine or hum, that can be heard distinctly as a single pitch or a set of pitches. A prominent discrete tone exists if the one-third octave band sound pressure level in the band with the tone exceeds the arithmetic average of the sound pressure levels of the 2 contiguous one-third octave bands by:
 - (1) 5 dB for center frequencies of 500 Hz and above;
 - (2) 8 dB for center frequencies between 160 and 400 Hz; or
 - (3) 15 dB for center frequencies less than or equal to 125 Hz.
- (r) *Qualifying performing arts facility* means the outdoor area of a building, outdoor seasonal, temporary, or permanent stage, or other clearly defined outdoor area or space, which is:
 - (1) used for an outdoor arts and entertainment activity; and
 - (2) owned or operated by the County; and
 - (3) so designed by the County Executive in an Executive Order published in the County Register. The Executive may revoke a designation at any time by publishing an Executive Order revoking the designation in the County Register.
- (s) *Receiving property* means any real property where people live or work and where noise is heard, including an apartment, condominium unit, or cooperative building unit.
- (t) *Sound* means an auditory sensation evoked by the oscillation of air pressure.
- (u) *Source* means any person, installation, device, or animal causing or contributing to noise. (1996 L.M.C., ch. 32, § 1; 2001 L.M.C., ch. 2, § 1.)

Editor's note—See County Attorney Opinion dated 10/6/00 indicating that long-term parking on public streets is prohibited in certain circumstances, but not based on the size of the vehicle. See County Attorney Opinion dated 3/16/92 explaining that the Washington Metropolitan Area Transportation Authority (esp. Metrorail) is subject to the County's noise control law, although an exemption may be obtained if it is in the public interest.

Sec. 31B-3. Regulations.

The County Executive may establish noise control regulations and standards as necessary to accomplish the purposes and intent of this Chapter. Any regulation must be at least as stringent as this Chapter. The Executive by regulation may set fees that are sufficient to offset the costs of Department reviews or other actions required or authorized by this Chapter. (1996 L.M.C., ch. 32, § 1.)

Sec. 31B-4. Noise control advisory board.

- (a) A Noise Control Advisory Board must advise the County Executive, Director, County Council, and Planning Board on noise control issues, including administration and enforcement of this Chapter.
- (b) The Board consists of 11 members appointed by the Executive and confirmed by the Council.
- (c) The Board must elect one member as Chair and another member as Vice-Chair to serve at the pleasure of the Board. The Board must meet at the call of the chairperson as required to perform its duties, but not less than once each quarter. A majority of the members of the

Board constitutes a quorum for transacting business. The Board may act by a majority vote of those present.

- (d) At least every third year, the Board must evaluate the effectiveness of the County's noise control program and recommend any improvements to the Director, County Executive, County Council, and Planning Board.
- (e) No later than March 1 each year, the Chair of the Board must report to the Director, County Executive, County Council, and Planning Board on activities and actions the Noise Control Advisory Board took during the previous calendar year. (1996 L.M.C., ch. 32, § 1; 1999 L.M.C., ch. 2, § 1.)

Editor's note-1999 L.M.C., ch. 2, § 1, increased the number of Board members from 7 to 11. 1999 L.M.C., ch. 2, § 2, states:

Sec. 2. Transition.

- (a) The terms of the 4 members of the Noise Control Advisory Board added by this Act end:
 - (1) for 1 member, on September 30, 1999, and every third year thereafter;
 - (2) for 2 members, on September 30, 2000, and every third year thereafter; and
 - (3) for 1 member, on September 30, 2001, and every third year thereafter.
 - (b) When appointing the first individual to serve in one of the 4 new positions, the County Executive must designate the term in subsection (a) for which the Executive is appointing the individual.
 - (c) This Act does not affect the term of any current member of the Board.
- Cross reference**-Boards and commissions generally, § 2-141 et seq.

Sec. 31B-5. Noise level and noise disturbance violations.

- (a) *Maximum allowable noise levels.*
 - (1) Except as otherwise provided in Sections 31B-6(a) and 31B-8, a person must not cause or permit noise levels that exceed the following levels:

<i>Maximum Allowable Noise Levels (dBA) for Receiving Noise Areas</i>		
	<i>Daytime</i>	<i>Nighttime</i>
Non-residential noise area	67	62
Residential noise area	65	55

- (2) A person must not cause or permit the emission of a prominent discrete tone or impulsive noise that exceeds a level, at the location on a receiving property where noise from the source is greatest, that is 5 dBA lower than the level set in paragraph (1) for the applicable noise area and time.
 - (3) Sound that crosses between residential and non-residential noise areas must not exceed the levels set in paragraph (1) for residential noise areas.
- (b) *Noise disturbance.* A person must not cause or permit noise that creates a noise disturbance.
- (c) *Examples.* The following examples illustrate common noise-producing acts that violate this section if they exceed the noise level standards set in subsection (a) or create a noise

disturbance. The examples are illustrative only and do not limit or expand the noise level or noise disturbance standards of this section:

- (1) Sounding a horn or other signaling device on any motor vehicle on private property except:
 - (A) in an emergency; or
 - (B) as a danger warning signal during daytime hours if the device complies with noise level limits.
- (2) Operating a sound-producing device on public streets for commercial advertising or to attract public attention.
- (3) Selling anything by outcry.
- (4) Loading, unloading, opening, closing or otherwise handling containers, building materials, construction equipment, or similar objects.
- (5) Operating a device that produces, reproduces, or amplifies sound.
- (6) Allowing an animal to create a noise disturbance.
- (7) Operating power equipment mounted on a motor vehicle or operating other devices powered by a generator or a motor vehicle. (1996 L.M.C., ch. 32, § 1.)

Editor's note—See County Attorney Opinion dated 10/6/00 indicating that long-term parking on public streets is prohibited in certain circumstances, but not based on the size of the vehicle. See County Attorney Opinion dated 3/16/92 explaining that the Washington Metropolitan Area Transportation Authority (esp. Metrorail) is subject to the County's noise control law, although an exemption may be obtained if it is in the public interest.

Sec. 31B-6. Noise level and noise disturbance standards for construction.

- (a) *Maximum allowable noise levels for construction.*
 - (1) A person must not cause or permit noise levels from construction activity that exceed the following levels:
 - (A) From 7 a.m. to 5 p.m. weekdays:
 - (i) 75 dBA if the Department has not approved a noise-suppression plan for the activity; or
 - (ii) 85 dBA if the Department has approved a noise-suppression plan for the activity.
 - (B) The level specified in Section 31B-5 at all other times.
 - (2) Construction noise levels must be measured at the location, at least 50 feet from the source, on a receiving property where noise from the source is greatest.
 - (3) The Department must by regulation establish requirements for noise-suppression plans and adopt procedures for evaluating and approving plans. The regulations must provide that, at least 10 days before approving a noise-suppression plan, the Director must provide public notice reasonably calculated to reach at least a majority of households that might be affected by the construction activity noise levels above 75 dBA.
- (b) *Construction noise disturbance.* The prohibition on noise disturbance in Section 31B- 5(b) applies to construction activities, notwithstanding subsection (a).
- (c) *Examples.* The following examples illustrate common construction noise-producing acts that violate this section if they exceed the noise level standards set in subsection (a) or create a noise disturbance. The examples are illustrative only and do not limit or expand the construction noise level or noise disturbance standards of this section:
 - (1) Delivering materials or equipment, or loading or unloading during nighttime hours in a residential noise area.
 - (2) Operating construction equipment with audible back-up warning devices during nighttime hours. (1996 L.M.C., ch. 32, § 1.)

Sec. 31B-6A. Seasonal noise level standard for qualifying outdoor arts and entertainment activities.

- (a) Each outdoor arts and entertainment activity held at a qualifying performing arts facility must not exceed the following noise decibel limits:
 - (1) from 11 a.m. to 11 p.m. during April 1 through October 31, 75 dBA, as measured on the receiving property; and
 - (2) at all other times, the maximum allowable noise level set in Section 31B-5.
- (b) A qualifying performing arts facility which has complied with this Section must not cause or permit noise levels from an outdoor arts and entertainment activity to exceed the standards in subsection (a).
- (c) Any outdoor arts and entertainment activity conducted at a qualifying performing arts facility which has complied with this Section must not be cited as causing a noise disturbance.
- (d) The Department must annually advise the Executive and Council, and the operator of each qualifying performing arts facility, whether the noise levels specified in this Section remain appropriate for that facility and the extent of compliance with those levels. (2011 L.M.C., ch. 7, § 1)

Sec. 31B-7. Measurement of sound.

- (a) The Department must issue regulations establishing the equipment and techniques it will use to measure sound levels. The Department may rely on currently accepted standards of recognized organizations, including the American National Standards Institute (ANSI), American Society for Testing and Materials (ASTM), and the United States Environmental Protection Agency.
- (b) For multiple sources of sound, the Department may measure sound levels at any point to determine the source of a noise. (1996 L.M.C., ch. 32, § 1.)

Sec. 31B-8. Noise sensitive areas.

- (a) The County Executive may designate by regulation land within any geographical area as a noise sensitive area to protect public health, safety, and welfare. The regulation may prohibit certain noise producing activities in the noise sensitive area.
- (b) A regulation under subsection (a) must:
 - (1) describe the area by reference to named streets or other geographic features;
 - (2) explain the reasons for the designation;
 - (3) establish specific noise limits or requirements that apply in the noise sensitive area; and
 - (4) describe by example or enumeration activities or sources that violate the limits or requirements.
- (c) A regulation under subsection (a) may establish limits or requirements for a noise sensitive area that are more stringent than those that otherwise would apply to the area under this Chapter. (1996 L.M.C., ch. 32, § 1.)

Sec. 31B-9. Leafblowers.

- (a) Except as provided in this section, a person must not sell, buy, offer for sale, or use a leafblower at any time that has an average sound level exceeding 70 dBA at a distance of 50

feet. This requirement is in addition to any other noise level or noise disturbance standard that applies under this Chapter.

- (b) An individual who owns or occupies a residence in a residential noise area may use at the individual's residence a leafblower bought or manufactured before July 1, 1990, until July 1, 1998, even if it exceeds the standard in subsection (a). After July 1, 1998, a person must not use any leafblower that violates the standard in subsection (a).
- (c) The Department must apply the standard in subsection (a) in accordance with the most current leaf-blower testing standard of the American National Standards Institute (ANSI).
- (d) The Department may inspect, and on its request a person must produce, any leafblower that is sold, offered for sale, or used in the County, to determine whether the leafblower complies with this section. A person who relies in good faith on a manufacturer's written representation of the sound level of a leafblower that has not been modified is not subject to a penalty for violating this section. (1996 L.M.C., ch. 32, § 1.)

Sec. 31B-10. Exemptions.

- (a) This Chapter does not apply to:
 - (1) agricultural field machinery used and maintained in accordance with the manufacturer's specifications;
 - (2) emergency operations by fire and rescue services, police agencies, or public utilities and their contractors;
 - (3) a source or condition expressly subject to any State or federal noise-control law or regulation that is more stringent than this Chapter;
 - (4) sound, not electronically amplified, created between 7 a.m. and 11 p.m. by sports, amusements, or entertainment events or other public gatherings operating according to the requirements of the appropriate permit or licensing authority. This includes athletic contests, carnivals, fairgrounds, parades, band and orchestra activities, and public celebrations.
- (b) The County Executive may issue regulations exempting from Section 31B-5 sources associated with routine residential living during daytime hours, such as home workshops, power tools, and power lawn and garden equipment, when used in accordance with manufacturer specifications. This exception does not apply to repairs or maintenance on a motor vehicle that is not registered for use on public roads. (1996 L.M.C., ch. 32, § 1.)

Sec. 31B-11. Waivers.

- (a) *Temporary waiver.*
 - (1) The Director may waive any part of this Chapter for a temporary event if the noise the event will create or cause in excess of the limits established under this Chapter is offset by the benefits of the event to the public.
 - (2) When the Director receives an application under this subsection, the Director must provide public notice of the application reasonably calculated to reach at least a majority of households that might be affected by noise levels anticipated for the event. The Director must not approve an application under this subsection less than 10 days after the public notice.
- (b) *General waiver.*
 - (1) The Director may waive any part of this Chapter if the Director determines that compliance in a particular case is not practical and would impose undue hardship.
 - (2) When the Director receives an application under this subsection, the Director must schedule a hearing on the application within 60 days.
 - (3) At least 30 days before the hearing, the applicant must advertise the hearing by:

- (A) placing a display advertisement in a newspaper of general circulation in the community where the source that is the subject of the application is located; and
 - (B) posting a sign at the location of the source.
- (4) Based on evidence presented at the hearing, the Director may grant a waiver for up to 3 years, under terms and conditions appropriate to reduce the impact of the exception.
- (5) The Director may renew a waiver granted under this subsection if the applicant shows that the circumstances supporting the original waiver have not changed.
- (c) *Violation of waiver.* The Director may suspend, modify, or revoke a waiver granted under this section if a person violates the terms or conditions of the waiver.
- (d) *Regulations and fees.* The County Executive must issue regulations implementing this section that:
 - (1) set the procedures and fees to apply for a waiver under subsections (a) or (b);
 - (2) require the applicant to use the best technology and strategy reasonably available to mitigate noise, as determined by the Director;
 - (3) allow temporary waivers under subsection (a) of no more than 30 days, renewable at the discretion of the Director no more than twice; and
 - (4) specify the requirements for the hearing advertisement and sign required under subsection (b)(3). (1996 L.M.C., ch. 32, § 1.)

Sec. 31B-12. Enforcement and penalties.

- (a) The Department must enforce this Chapter. The County Executive may delegate in writing the authority to enforce parts of this Chapter to the Police Department or any other Executive agency.
- (b) A violation of this Chapter is a Class A violation. Each day a violation continues is a separate offense. A violation of Section 31B-6 is a separate offense in addition to any other violation of this Chapter arising from the same act or occurrence.
- (c) The Department may seek injunctive or other appropriate judicial relief to stop or prevent continuing violations of this Chapter.
- (d) If the Director finds that a person has violated this Chapter, the Director may issue a notice of violation and corrective order to the person. The notice must contain the following information:
 - (1) the section of this Chapter that the person violated;
 - (2) the date, nature, and extent of the violation;
 - (3) the action required to correct the violation;
 - (4) if the Director requires a compliance plan, the deadline for submitting the plan to the Director; and
 - (5) the deadline for compliance.
- (e) The compliance plan referred to in subsection (d)(4) must establish a schedule for achieving compliance with this Chapter, as specified in the corrective order. A compliance plan, and amendments to a plan, are not effective until the Director approves the plan or amendment. An action allowed under an approved compliance plan does not violate this Chapter.
- (f) An enforcement officer may issue a civil citation for any violation of this Chapter if the enforcement officer:
 - (1) witnesses the violation; or

- (2) receives complaints from at least 2 witnesses of a noise disturbance. Complaints by 2 witnesses are required to issue a citation under paragraph (2), but are not required to prove that a person violated this Chapter.
- (g) The Director of the Animal Services Division may initiate administrative action before the Animal Matters Hearing Board instead of an enforcement officer issuing a citation under subsection (f) for a violation of this Chapter originating from an animal source.
- (h) A person aggrieved by any action or order of the Director under Sections 31B-9 and 31B-11 may seek reconsideration within 10 days after the date of the action or order. A request for reconsideration must be in writing to the Director, and must specify the date and nature of the action or order, the injury sustained, the remedy requested, and the legal basis for the remedy. If the Director finds that there are material facts in dispute, the Director may refer the matter to a hearing officer under the procedures specified in Chapter 2A. If the Director finds that there are no material facts in dispute, the Director must make a final decision on the request for reconsideration in writing within 45 days after receiving the request. The aggrieved person may appeal from the Director's final decision within 30 days after the Director issues the decision, as provided in Section 2A-11.
- (i)
 - (1) A person responsible for a violation of Section 31B-6 and the person responsible for the management or supervision of the construction site where the source of the violation is located are jointly and severally liable for the violation.
 - (2) For recurring violations of Section 31B-6 on the same construction site, in addition to any other penalty under this Chapter, the Director may issue a stop work order, as provided in Section 8-20, for up to:
 - (A) 3 consecutive working days for a second violation within 30 days after the first violation;
 - (B) 5 consecutive working days for a third violation within 60 days after the first violation; and
 - (C) 7 working days per offense for the fourth and subsequent violations within a 120-day period.
 - (3) This Chapter does not limit the Director's authority under Chapter 8 to revoke a permit or approval issued under that Chapter.
- (j) Any person aggrieved by a violation of this Chapter may file a civil action in any court with jurisdiction against a person responsible for the alleged violation. The aggrieved person must notify the alleged violator and the Director of the alleged violation at least 60 days before filing the action. A person must not file an action under this subsection if the County Attorney has filed a civil action against the same alleged violator regarding the same violation. (1996 L.M.C., ch. 32, § 1; 2001 L.M.C., ch. 2, § 1.)

Endnotes

Editor's note—In *Burrows v. United States*, 2004 U.S. Dist. LEXIS 1104 (2004), the Court interpreted Montgomery County Code Chapter 31B neither to permit a private cause of action for noise control, nor to permit suit against the federal government. Chapter 31B is discussed in *Miller v. Maloney Concrete Company*, 63 Md.App. 38, 491 A.2d 1218 (1985). *Cross references—Noise from quarries, § 38-14; radio, etc., without earphones prohibited in public transit facilities, § 54A-2; industrial area noise regulations, § 59-A-5.7.

[Note]

TWINBROOK COMMUNITY CENTER RESTROOM RENOVATIONS

12920 TWINBROOK PARKWAY, ROCKVILLE, MD 20851

FM-5

C. Biggs 08/20/2024

SEE FIRE MARSHAL PLAN REVIEW
COMMENTS ON DRAWING: G-002

A Separate Sprinkler and Fire Alarm
Permit May Be Required

2024-7746-ALT
THESE PLANS HAVE BEEN
REVIEWED AND APPROVED FOR
CODE COMPLIANCE.
08/13/2024

Chris Denigawoff

THE APPROVED PLANS AND
ATTACHED NOTES SHALL BE
AVAILABLE ON THE JOB SITE AT ALL
TIMES. INSPECTIONS WILL NOT BE
CONDUCTED WITHOUT THE
APPROVED PLANS

The approval of these drawings
does not permit the installation or
alteration of any
required/non-required fire
protection systems. A separate
fire alarm or sprinkler permit MAY
be required.

DELTA PROJECT NO. 2019.331.012

07/22/2024

100% Re-Submission

INDEX OF DRAWINGS

APPLICABLE CODES

- 2021 INTERNATIONAL RESIDENTIAL CODE (IRC)
- 2021 INTERNATIONAL BUILDING CODE (IBC)
- 2021 INTERNATIONAL PROPERTY MAINTENANCE CODE (IPMC)
- 2021 INTERNATIONAL PLUMBING CODE (IPC)
- 2021 INTERNATIONAL MECHANICAL CODE (IMC)
- 2021 INTERNATIONAL FUEL GAS CODE (IFGC)
- 2021 INTERNATIONAL ENERGY CONSERVATION CODE (IECC)
- 2021 INTERNATIONAL EXISTING BUILDING CODE (IEBC)
- 2023 INTERNATIONAL ELECTRICAL CODE (NFPA 70)
- 2015 INTERNATIONAL INTERNATIONAL GREEN CONSTRUCTION CODE (IgCC)
- 2010 ADA STANDARDS
- CITY OF ROCKVILLE AMENDMENTS
- ANNOTATED CODE OF MARYLAND, TITLE 12 (PUBLIC SAFETY ACT)
- MARYLAND BUILDING PERFORMANCE STANDARDS (COMAR 09.12.51)
- MARYLAND ACCESSIBILITY CODE (COMAR 09.12.53)
- 2018 NFPA 1 FIRE CODE
- 2018 NFPA 101 LIFE SAFETY CODE
- 2016 NFPA 13, 13R, 13D FIRE SPRINKLER CODES
- 2016 NFPA 72 FIRE ALARM CODE
- 2018 CITY OF ROCKVILLE CHAPTER 9 LOCAL AMENDMENTS

GENERAL

- G-001 TITLE SHEET
- G-002 LEGENDS, ABBREVIATIONS AND NOTES
- G-003 LIFE SAFETY

ARCHITECTURAL

- A-101 PLANS
- A-102 PLANS
- A-103 EQUIPMENT PLAN
- A-301 ELEVATIONS
- A-601 SCHEDULES & DIAGRAMS

MECHANICAL

- M-101 MECHANICAL AND PLUMBING PLANS

GENERAL COMMENTS

- All work performed, whether detailed on the approved plans or not, shall comply with all applicable codes, ordinances and referenced standards as adopted and amended by the City of Rockville and the State of Maryland.
- This construction must comply with all applicable provisions outlined in the Maryland State Accessibility Code.
- Any changes to the "APPROVED PLANS" shall be submitted to and approved by this Division prior to the change being made in the field.
- Review all comments prior to scheduling an inspection.
- Approved plans MUST be on-site for all inspections. INSPECTIONS WILL NOT BE PERFORMED WITHOUT THE APPROVED PLANS PRESENT. Permits must be posted where visible from the street or front entrance.
- Field inspections shall determine code compliance. Any omissions or errors on the approved plans do not constitute approval of non-compliant installations.
- The approval of these drawings does not allow the installation of the required/non-required fire protection system. OBTAIN A SEPARATE FIRE ALARM AND SPRINKLER PERMIT.

Refer to trade-specific drawings for trade-specific comments.

No further items found at this time; any future findings will require proper resolution to code conformance.

Other agency approvals may be required prior to the final inspections and or occupancy of this structure.

SUMMARY OF WORK

THE SCOPE OF WORK INCLUDES RENOVATIONS IN BOTH BUILDINGS AT THE TWINBROOK COMMUNITY RECREATION FACILITY- THE PRIMARY RECREATION FACILITY AND THE SMALLER ANNEX BUILDING.

IN THE PRIMARY FACILITY THE SCOPE OF WORK INVOLVES RENOVATING AN EXISTING OFFICE AND ADJACENT JANITOR'S CLOSET TO BECOME A NEW SINGLE USE GENDER NEUTRAL RESTROOM WITH A SEPARATE SHOWER AREA. DEMOLITION INCLUDES, BUT IS NOT LIMITED TO, THE REMOVAL OF AN EXISTING PARTITION, REMOVAL OF DOORS AND FRAMES, DEMOLITION OF THE EXISTING SLAB ON GRADE AS REQUIRED FOR THE INSTALLATION OF NEW PLUMBING LINES AND A NEW SHOWER FLOOR, REMOVAL OF FLOOR AND CEILING FINISHES, REMOVAL OF A JANITOR'S CLOSET MOP BASIN, REMOVAL OF LIGHT FIXTURES, AN ELECTRIC HEATER, CEILING SUPPLY, RETURN AND EXHAUST DIFFUSERS AND ASSOCIATED BRANCH DUCTWORK, SPRINKLER HEADS AND BRANCH LINES, AND OTHER ITEMS AS REQUIRED FOR THE NEW WORK. THE NEW WORK INCLUDES BUT IS NOT LIMITED TO THE INSTALLATION OF NEW PARTITIONS, INFILL OF OPENINGS, NEW DOORS, INSTALLATION OF PRIVACY WINDOW FILM, RESTROOM FIXTURES AND ACCESSORIES, A NEW SHOWER, LOCKERS, BENCH, NEW CEILING, WALL AND FLOOR FINISHES, LIGHT FIXTURES, CEILING SUPPLY AND EXHAUST DIFFUSERS AND ASSOCIATED BRANCH DUCTWORK, SPRINKLER HEADS AND BRANCH LINES, AND OTHER ITEMS AS REQUIRED FOR THE NEW WORK.

IN THE ANNEX BUILDING THE SCOPE OF WORK INVOLVES CONVERTING THE EXISTING MEN'S AND WOMEN'S ROOMS INTO THREE GENDER NEUTRAL RESTROOMS, AS WELL AS A SEPARATE ELECTRICAL CLOSET. DEMOLITION INCLUDES, BUT IS NOT LIMITED TO, THE REMOVAL OF EXISTING PARTITIONS, REMOVAL OF DOORS AND FRAMES, REMOVAL OF TOILET PARTITION SYSTEMS, DEMOLITION OF THE EXISTING SLAB ON GRADE AS REQUIRED FOR THE INSTALLATION OF NEW PLUMBING LINES, REMOVAL OF CEILING FINISHES, REMOVAL OF LIGHT FIXTURES, CEILING SUPPLY AND EXHAUST DIFFUSERS AND ASSOCIATED BRANCH DUCTWORK AND OTHER ITEMS AS REQUIRED FOR THE NEW WORK. THE NEW WORK INCLUDES BUT IS NOT LIMITED TO THE INSTALLATION OF NEW PARTITIONS, INFILL OF OPENINGS, NEW DOORS, RESTROOM FIXTURES AND ACCESSORIES, NEW CEILING AND WALL FINISHES, LIGHT FIXTURES, CEILING SUPPLY AND EXHAUST DIFFUSERS AND ASSOCIATED BRANCH DUCTWORK, AND OTHER ITEMS AS REQUIRED FOR THE NEW WORK. THE ANNEX BUILDING SCOPE ALSO INCLUDES TWO ADD ALTERNATES- ONE FOR THE INSTALLATION OF AN ADULT CHANGING STATION, AND THE OTHER FOR THE REPLACEMENT OF EXISTING CERAMIC TILE WALL AND FLOOR FINISHES.

ARCHITECT/ENGINEER

DELTA
ENGINEERS, ARCHITECTS, & SURVEYORS

8401 Connecticut Avenue, Suite 350
Chevy Chase, MD 20815

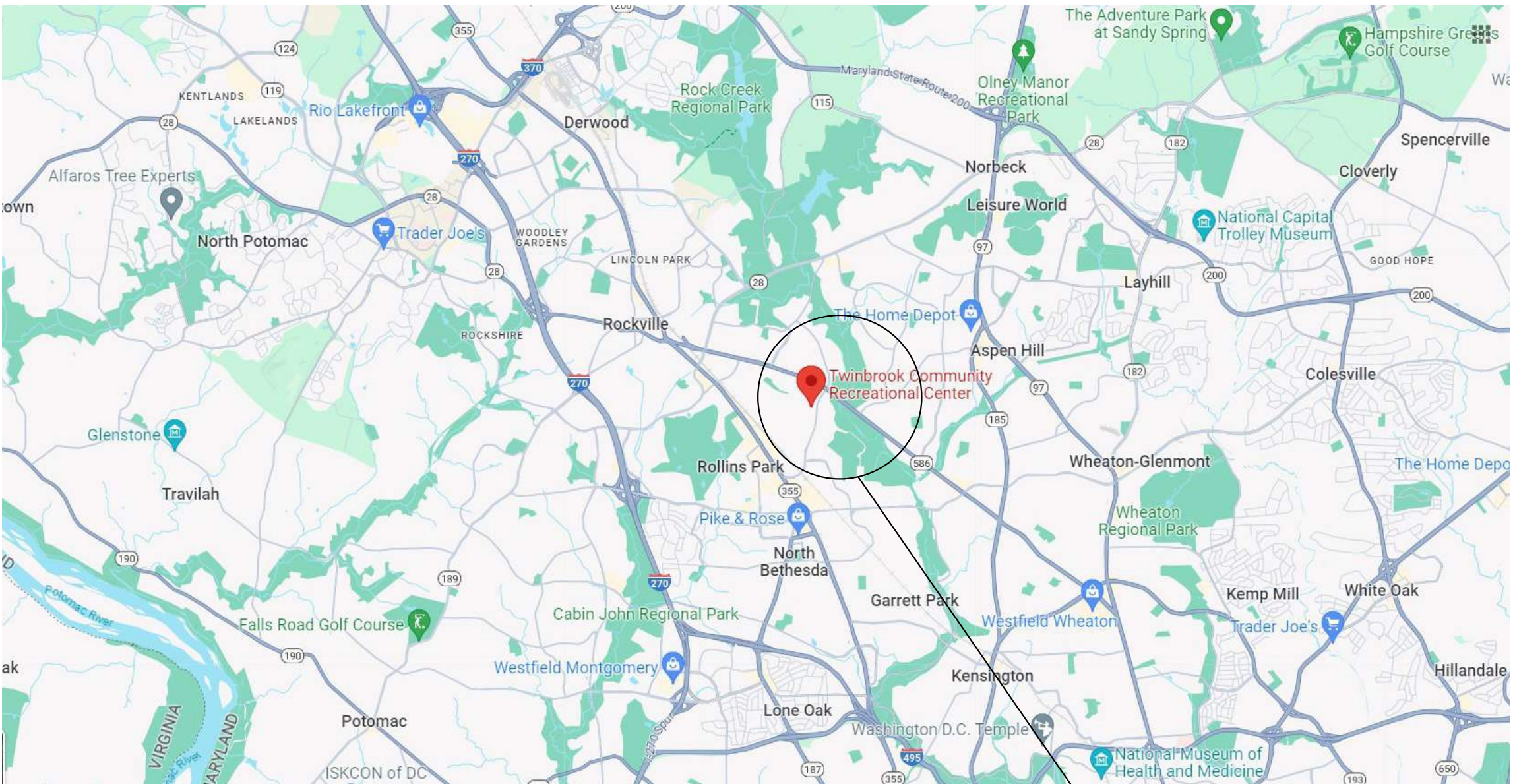
Tel: 301.718.0080

Fax: 301.718.9520

Email: mail@delta-eas.com

www.delta-eas.com

PROJECT LOCATION



PROJECT
LOCATION

OWNER



City of Rockville

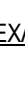


I certify that these documents were prepared or
approved by me, and that I am a duly licensed
professional under the laws of the State of Maryland.
license number 13892, expiration date 2026-06-24

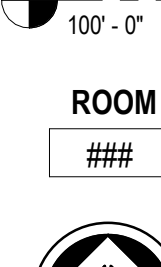
G-001

Construction/Installation subject to inspection by Fire
Marshal. Schedule all fire inspections on-line through
My Government On-line Customer Service Portal.

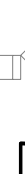
ANNOTATION SYMBOLS LEGEND:

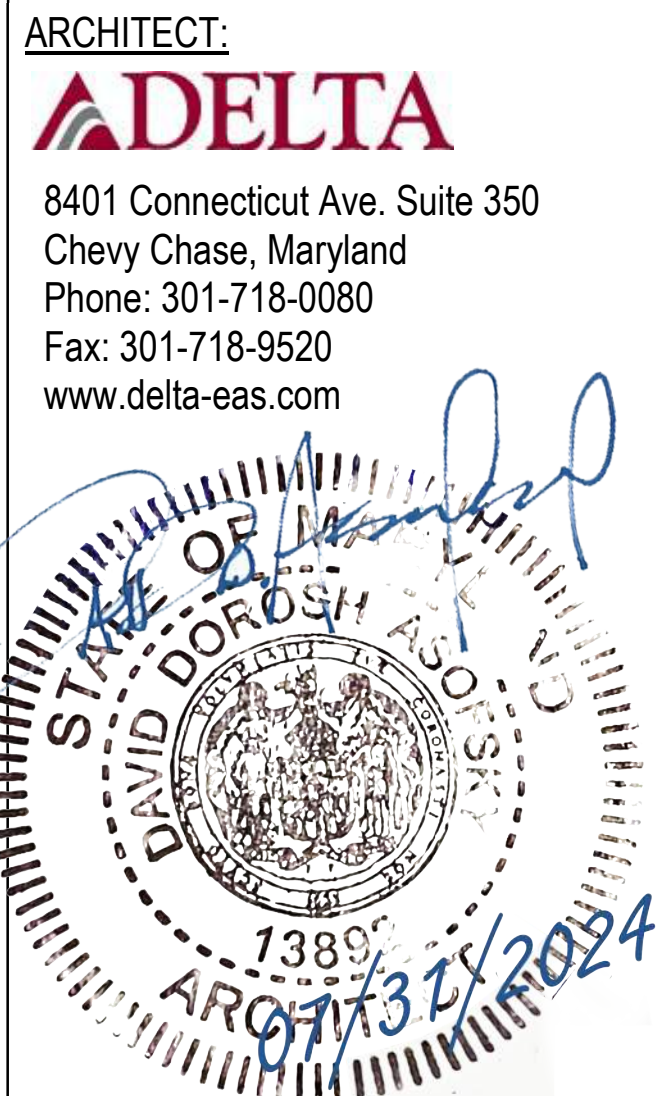
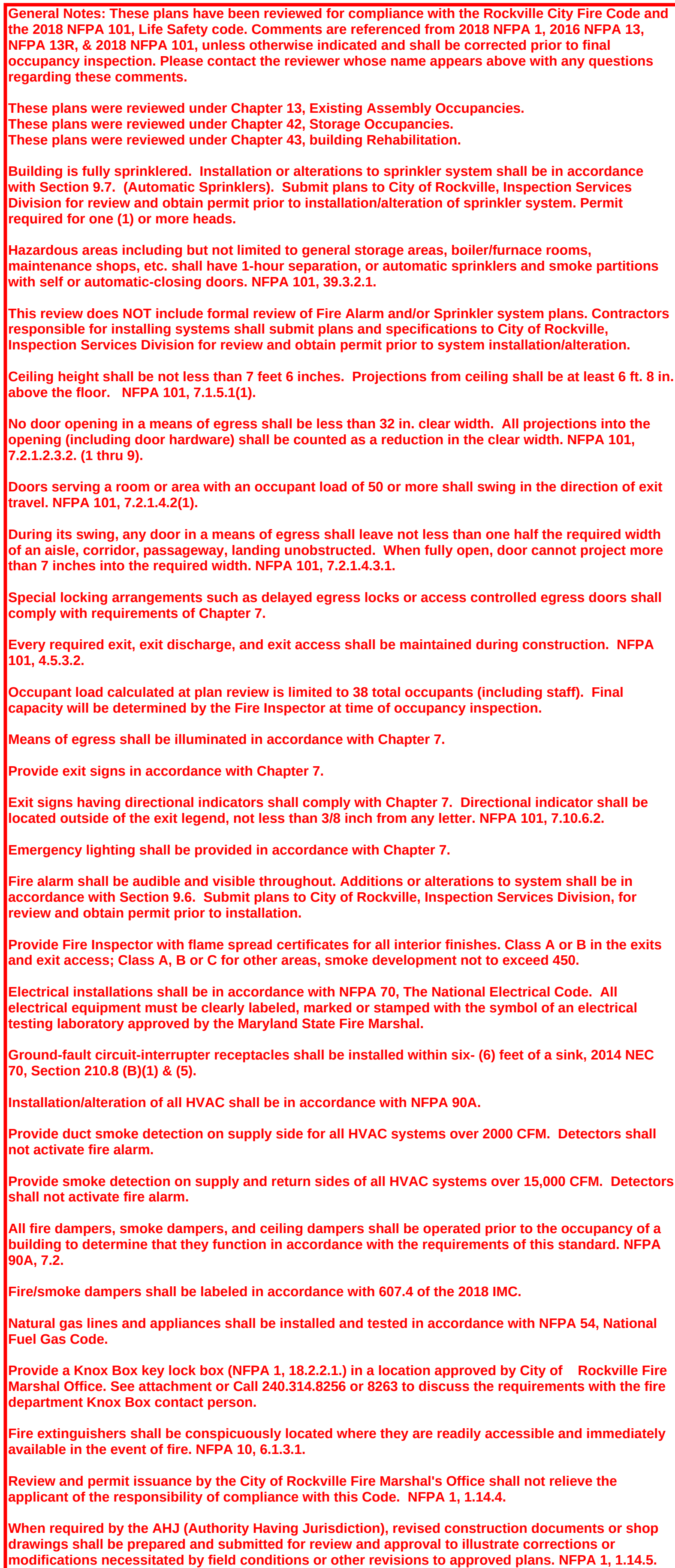
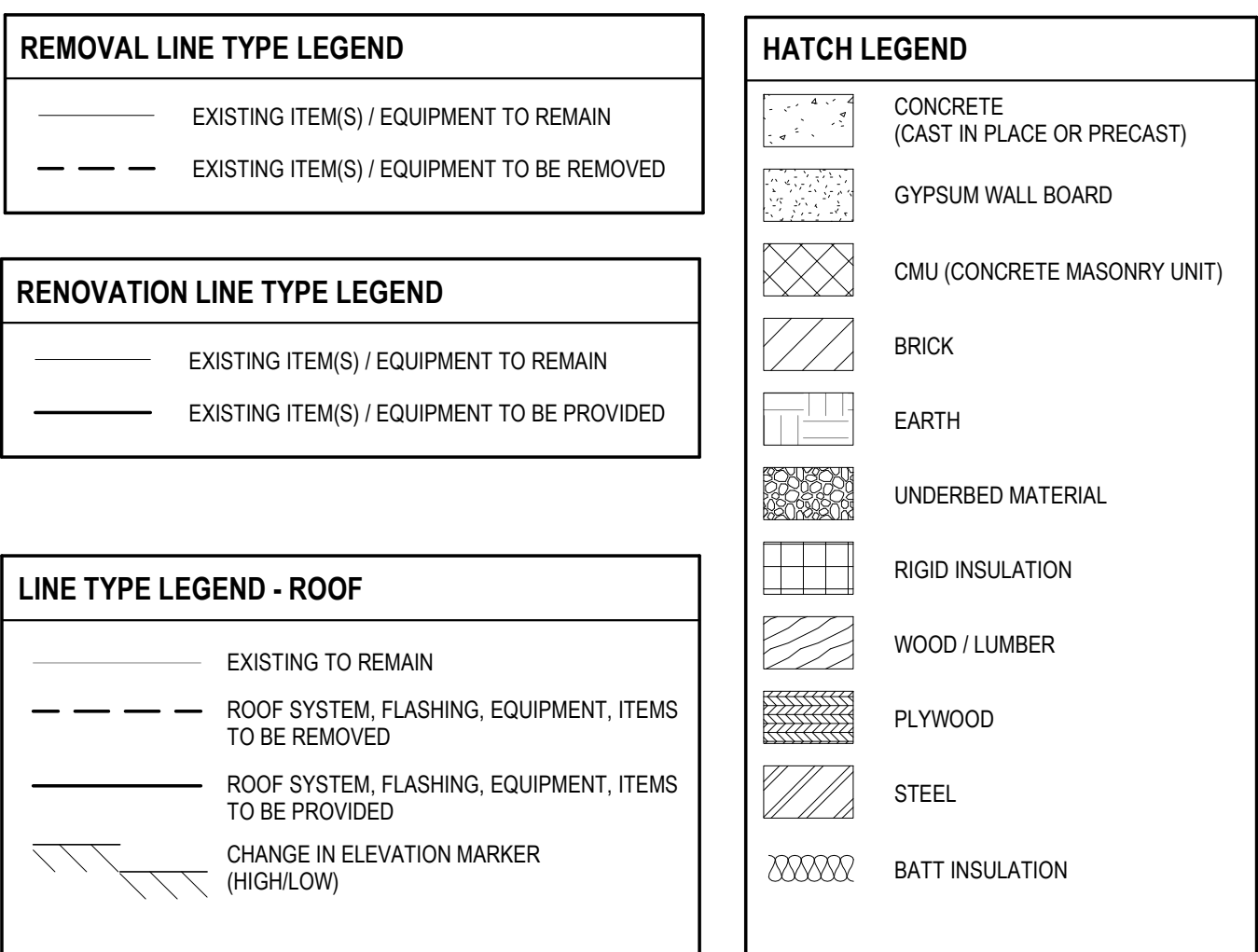
	REMOVAL KEY NOTE
	RENOVATION KEY NOTE
	DOOR TAG
	WINDOW TAG

EXAMPLE:

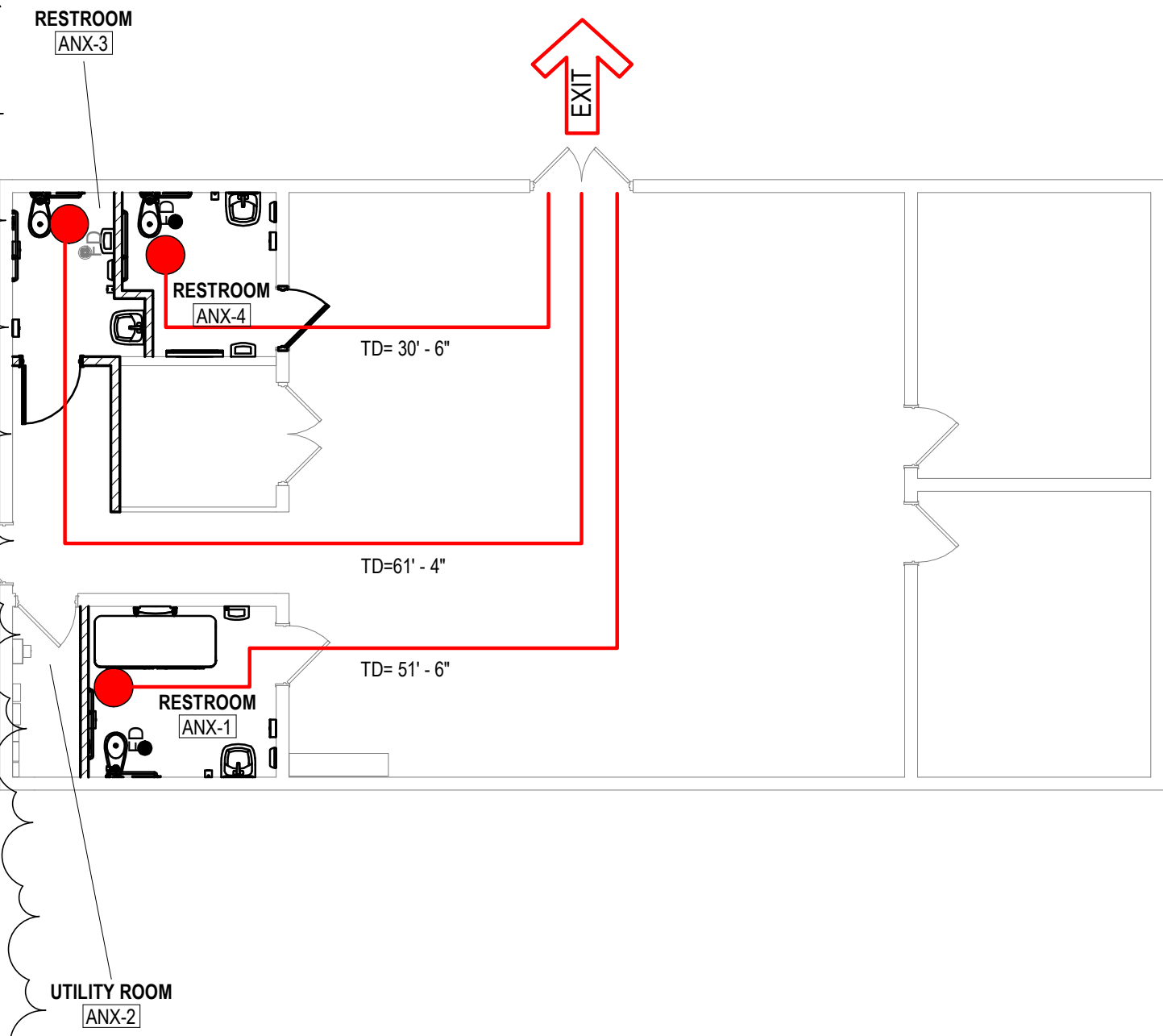
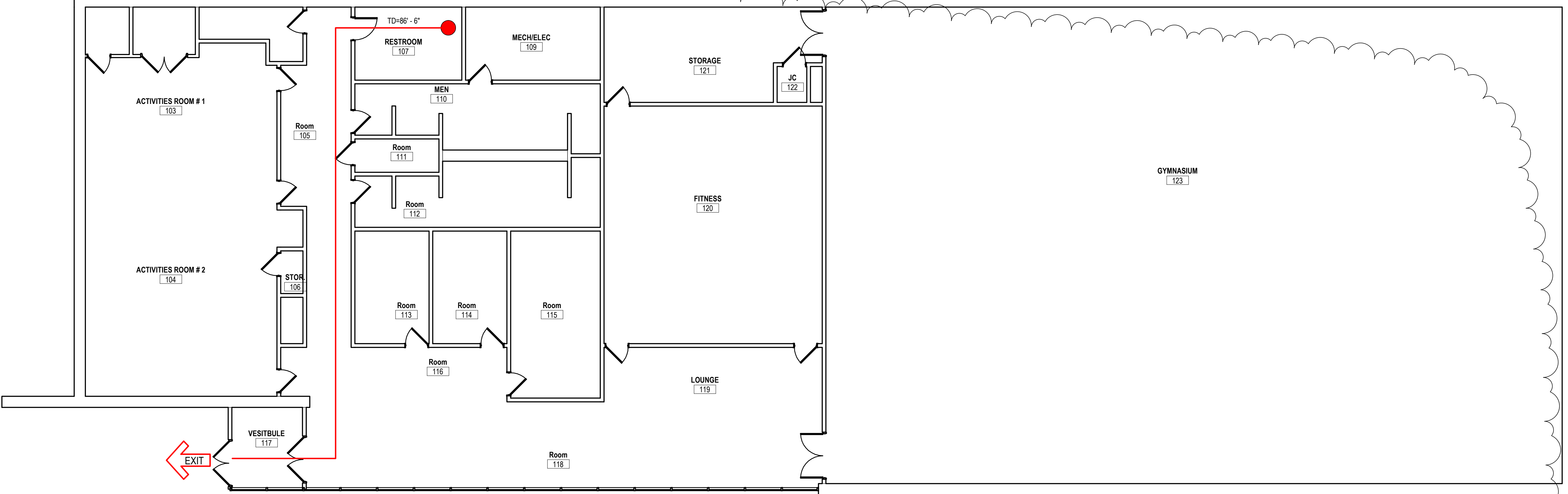


DOOR
DOOR TAG
WINDOW TAG
WINDOW UNIT

	WALL / PARTITION TYPE TAG
	DIMENSION STRING
	ELEVATION MARKER
ROOM 	ROOM TAG
	NORTH ARROW
	DETAIL ELEVATION
	EXTERIOR ELEVATION
	CALLOUT LASSO
	BUILDING SECTION
	WALL SECTION
	DETAIL SECTION
	REVISION IDENTIFICATION
	DOOR (EXISTING)
	DOOR (NEW CONSTRUCTION)
	EXISTING CONSTRUCTION (TO BE REMOVED)



G-002



2 ANNEX BUILDING - LIFE SAFETY PLAN

Q-003 SCALE: 1/8" = 1'-0"

BUILDING DATA - ANNEX BUILDING

FUNCTION:	EXISTING/ASSEMBLY
CLASSIFICATION:	GROUP A
SEPARATION:	N/A
CONSTRUCTION TYPE:	III
FIRE PROTECTION:	AUTOMATIC FIRE PROTECTION SYSTEM PER NFPA 13 - 903.2.5

HEIGHT AND AREA (PER FIRE AREA)

ALLOWABLE HEIGHT AND AREA (PER TABLES 504.3, 504.4, AND 506.2)

GROUP	MAX. ALLOW. HT. (FT)	ACTUAL HT. (FT)	MAX. ALLOW. HT. (STORIES)	ACTUAL HT. (STORIES)	MAX. ALLOW. AREA (SQ.FT./FLR)	ACTUAL (SQ.FT./FLR)
A	65'	44'-0"	3	1	14,000	1,800

**Values indicated do not include area calculations for Frontage or Sprinkler increases.

EGRESS

COMPONENT		OCCUPANCY		CODE REF.
		A-1		
EXIT ACCESS TRAVEL DISTANCE - MAXIMUM	ALLOWABLE	250'		IBC 1017.2
	ACTUAL *	61'-4"		
COMMON PATH OF TRAVEL - MAXIMUM	ALLOWABLE	75'		IBC 1006.2.1
	ACTUAL	61'-4"		
DEAD END CORRIDOR - MAXIMUM	ALLOWABLE	20'		IBC 1020.4
	ACTUAL	N/A		
MINIMUM CORRIDOR WIDTH	ALLOWABLE	44"		IBC 1020.3
	ACTUAL	50"		
MINIMUM EGRESS DOOR WIDTH	ALLOWABLE	32"		IBC 1010.1.1
	ACTUAL	XX"		

1 MAIN BLDG. FIRST FLOOR PLAN - LIFE SAFETY PLAN

G-003 SCALE: 1/8" = 1'-0"

BUILDING DATA - MAIN BUILDING

FUNCTION:	EXISTING/ASSEMBLY
CLASSIFICATION:	GROUP A
SEPARATION:	N/A
CONSTRUCTION TYPE:	II-B
FIRE PROTECTION:	AUTOMATIC FIRE PROTECTION SYSTEM PER NFPA 13 - 903.2.5

HEIGHT AND AREA (PER FIRE AREA)

ALLOWABLE HEIGHT AND AREA (PER TABLES 504.3, 504.4, AND 506.2)

GROUP	MAX. ALLOW. HT. (FT)	ACTUAL HT. (FT)	MAX. ALLOW. HT. (STORIES)	ACTUAL HT. (STORIES)	MAX. ALLOW. AREA (SQ.FT./FLR)	ACTUAL (SQ.FT./FLR)
A	75'	44'-0"	4	3	69,000	54,000

**Values indicated do not include area calculations for Frontage or Sprinkler increases.

EGRESS

COMPONENT		OCCUPANCY		CODE REF.
		A-1		
EXIT ACCESS TRAVEL DISTANCE - MAXIMUM	ALLOWABLE	250'		IBC 1017.2
	ACTUAL *	86'-6"		
COMMON PATH OF TRAVEL - MAXIMUM	ALLOWABLE	75'		IBC 1006.2.1
	ACTUAL	61'-4"		
DEAD END CORRIDOR - MAXIMUM	ALLOWABLE	20'		IBC 1020.4
	ACTUAL	N/A		
MINIMUM CORRIDOR WIDTH	ALLOWABLE	44"		IBC 1020.3
	ACTUAL	50"		
MINIMUM EGRESS DOOR WIDTH	ALLOWABLE	32"		IBC 1010.1.1
	ACTUAL	XX"		

APPLICABLE CODES

BUILDING CODE:	2021 INTERNATIONAL BUILDING CODE (IBC)
STRUCTURAL CODE:	Not applicable
ACCESSIBILITY CODE:	ICC/ANSI A117.1-09 Accessible and Usable Buildings and Facilities 2020 International Building Code (Chapter 11) 2010 ADA STANDARDS
FIRE CODE:	2018 NFPA 1 FIRE CODE 2018 NFPA 101 LIFE SAFETY CODE 2016 NFPA 13, 13R, 13D FIRE SPRINKLER CODE 2016 NFPA 72 FIRE ALARM CODE 2018 CITY OF ROCKVILLE CHAPTER 9 LOCAL AMENDMENTS
MECHANICAL CODE:	2018 INTERNATIONAL PLUMBING CODE
PLUMBING CODE:	2018 INTERNATIONAL PLUMBING CODE
ELECTRICAL CODE:	NFPA 70 - 2023 National Electrical Code NFPA 72 - 2022 National Fire Alarm Code NFPA 110 - 2016 Emergency and Standby Power Systems Illuminating Engineering Society (IES) Design Guidelines

Note: Refer to each trades respected general sheets for additional code information.

LIFE SAFETY LEGEND

---	1 HOUR FIRE RESISTANCE RATING
---	2 HOUR FIRE RESISTANCE RATING
---	SMOKE BARRIER (1HR RATED, UNLESS OTHERWISE SHOWN)
---	PRIMARY EGRESS PATH
---	SECONDARY EGRESS PATH
TD = XX' - XX"	TRAVEL DISTANCE TO EXIT
MRP	MOST REMOTE POINT OF EGRESS ACCESS
EXIT	EXIT DISCHARGE
EXT	FIRE EXTINGUISHER
EXT	FIRE EXTINGUISHER CABINET



PROJECT:
TWINBROOK COMMUNITY
CENTER RESTROOM
RENOVATIONS

PROJECT ADDRESS:
12920 TWINBROOK PARKWAY
ROCKVILLE, MARYLAND 20851

ARCHITECT:

DELTA

8401 Connecticut Ave. Suite 350
Chevy Chase, Maryland
Phone: 301-718-0080
Fax: 301-718-9520
www.delta-eas.com



REGISTRATION:

I certify that these documents were prepared or approved by me, and that I am a duly licensed professional under the laws of the State of Maryland. License number 13892, expiration date 2026-06-24

Revision		
Number	Description	Date
1	Revision 1 Resubmission	07/22/24

PROJECT NO: 2019.331.012
DRAWN BY: Author
CHECKED BY: Checker

RESUBMISSION: 100% 07-22-2024

SHEET TITLE:
LIFE SAFETY

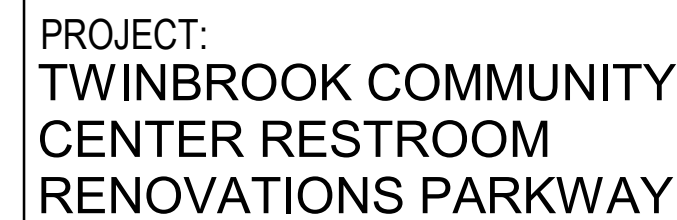


G-003

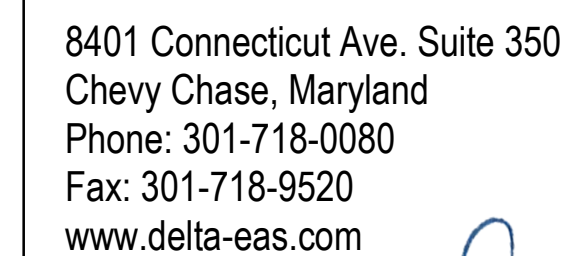
Construction/Installation subject to inspection by Fire Marshal. Schedule all fire inspections online through My Government On-line Customer Service Portal.



THESE DOCUMENTS
HAVE BEEN REVIEWED
FOR CODE COMPLIANCE.



ARCHITECT

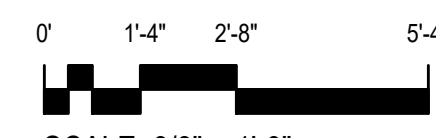


Revision		
Number	Description	Date
1	Revision 1 Resubmission	07.22.24

DRAWN BY: _____ Author: _____

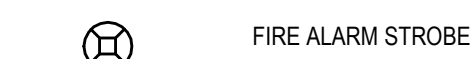
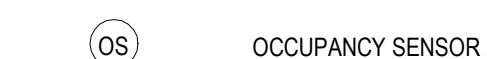
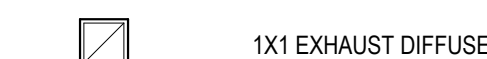
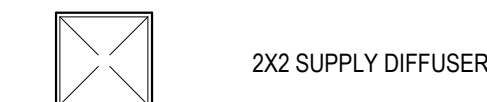
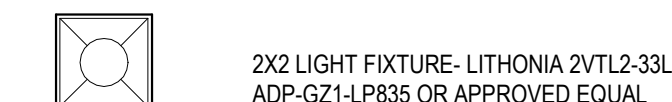
RESUBMISSION: 100% 07-22-2024

A-101



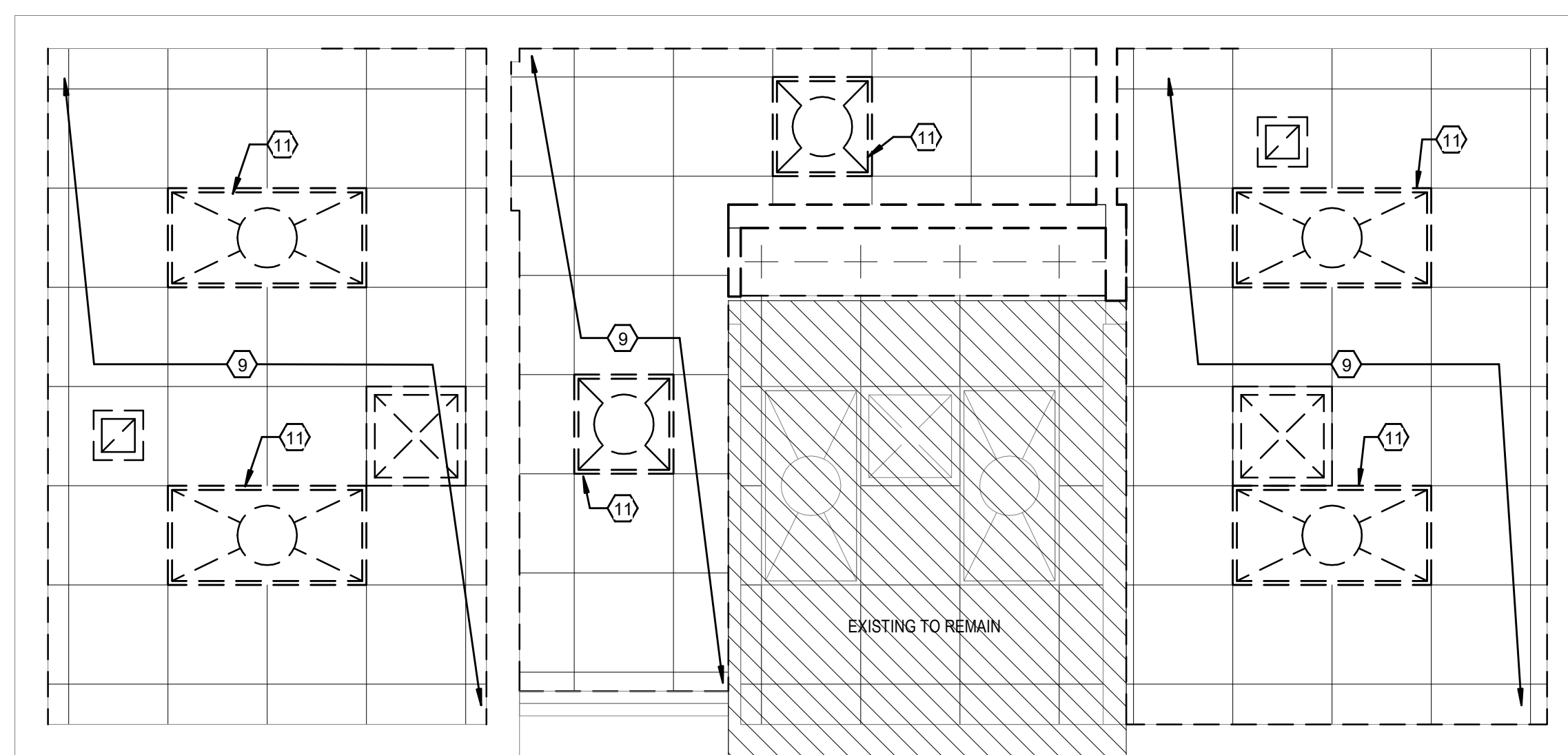
Construction/Installation subject to inspection by Fire Marshal. Schedule all fire inspections on-line through My Government On-line Customer Service Portal

- 1 REMOVE AND DISPOSE OF EXISTING TOILET STALLS, URINAL, SCREEN &
2 SUPPORTS.
- 3 REMOVE AND DISPOSE OF EXISTING PLUMBING FIXTURE.
- 4 REMOVE AND DISPOSE OF EXISTING PARTITIONS, WALLS, DOORS AND FRAMES
5 AS REQUIRED FOR NEW WORK.
- 6 REMOVE AND DISPOSE OF EXISTING TOILET ACCESSORIES, TOILET TISSUE
7 DISPENSER, TOILET SEAT COVER & GRAB BARS.
- 8 REMOVE AND DISPOSE OF EXISTING RESTROOM ACCESSORIES: PAPER TOWEL
9 DISPENSER, MIRROR, & SOAP DISPENSER.
- 10 REMOVE AND DISPOSE OF WET/DRY RETAIN CIRCUIT FOR REUSE WITH
11 DEVICES IN RENOVATED RESTROOMS.
- 12 REMOVE AND DELIVER TO OWNER BAY CHANGING STATION
- 13 REMOVE A 4-LOCATE BAY CHANGING STATION
- 14 COMPLETELY REMOVE AND DISPOSE OF EXISTING CEILING SYSTEM AND
15 MECHANICAL REGISTERS.
- 16 REMOVE AND DISPOSE OF WALL MOUNTED WOOD CABINET
- 17 REMOVE AND DISPOSE OF EXISTING DOWN LIGHTS, RETAIN EXISTING
18 CIRCUITING FOR INSTALLATION OF NEW LIGHTING.
- 19 REMOVE EXISTING FINISHED FLOORING
- 20 SAW CUT AND REMOVE EXISTING SLAB AS INDICATED TO PERMIT INSTALLATION
21 OF SLOPED SLAB AT NEW CHANGING STATION
- 22 ALTERNATE 1: REMOVE AND DISPOSE OF EXISTING CERAMIC WALL TILE
- 23 ALTERNATE 1: REMOVE AND DISPOSE OF EXISTING CERAMIC FLOOR TILE
- 24 REMOVE EXISTING ELEC. PANEL, RETAIN CIRCUIT FOR REUSE WITH NEW
25 DEVICES IN RENOVATED RESTROOM
- 26 REMOVE WALL FINISH AND INSTALL SLOD BOLDING FROM FLOOR TO
27 CEILING. SLOD BOLDING SHALL BE INSTALLED TO MEET CUSTOMER'S REQUIREMENTS FOR
28 INSTALLATION OF ADULT CHANGING STATION

[illegible]

NOTE: REFER TO 'FP', 'M', AND 'E' DRAWINGS FOR EXACT FIXTURE / EQUIPMENT TYPE(S), SIZES AND ADDITIONAL INFORMATION.

A-101 SCALE: 3/8" = 1'-0"

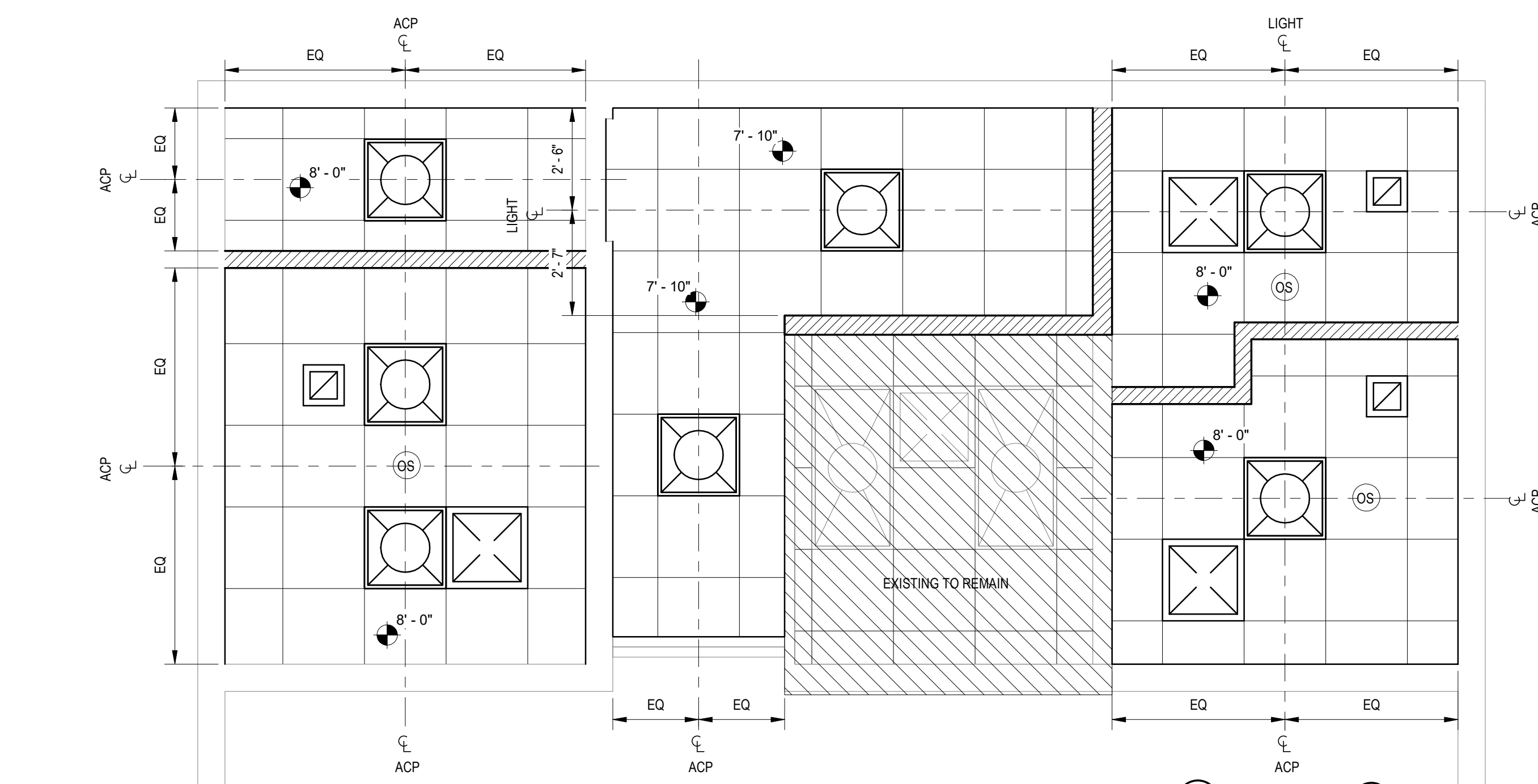


A-101 SCALE: 3/8" = 1'-0"

EXISTING ITEM(S) / EQUIPMENT TO REMAIN

EXISTING ITEM(S) / EQUIPMENT TO REMAIN

A-101 SCALE: 3/8" = 1'-0"



A-101 SCALE: 3/8" = 1'-0"

EXISTING FIRE ALARM NOTE: THE ANNEX BUILDING DOES NOT INCLUDE FIRE ALARM STROBES/ANNUNCIATORS. IF A FIRE IS DETECTED IN THE ANNEX BUILDING, AN ALARM IS SIGNALLED IN THE RECREATION CENTER. THE SOW WORK FOR THIS PROJECT DOES NOT ALTER THIS EXISTING SYSTEM

**THESE DOCUMENTS
HAVE BEEN REVIEWED
FOR CODE COMPLIANCE.**

REMOVE AND DISPOSE OF EXISTING TELLER STALLS, URINAL, SCREEN & PORTS

REMOVE AND DISPOSE OF EXISTING PLUMBING FIXTURE

REMOVE AND DISPOSE OF EXISTING PARTITIONS, WALLS, DOORS AND FRAMES REQUIRED FOR NEW WORK.

REMOVE AND DISPOSE OF EXISTING TELLER ACCESSORIES, TISSUE PAPER DISPENSER, TELLER SEAT COVER & GRAB BARS

REMOVE AND DISPOSE OF EXISTING RESTROOM ACCESSORIES, PAPER TOWEL DISPENSER, MIRROR, & SOAP DISPENSER

REMOVE AND DISPOSE OF EXISTING RETAIN CIRCUIT FOR REUSE WITH NEW CIRCLES IN RENOVATED RESTROOMS

REMOVE AND DELIVER TO OWNER BAY CHANGING STATION

REMOVE AND DELIVER TO OWNER EXISTING LIGHTS

COMPLETELY REMOVE AND DISPOSE OF EXISTING CEILING SYSTEM AND MECHANICAL REGISTERS

REMOVE AND DISPOSE OF WALL MOUNTED WOOD CABINET

REMOVE AND DISPOSE OF EXISTING LIGHTS

REMOVE AND DISPOSE OF EXISTING LIGHTS. RETAIN EXISTING CUTTING FOR INSTALLATION OF NEW LIGHTING.

MOVE EXISTING FINISH FLOORING

REMOVE AND DISPOSE EXISTING SLAB AS INDICATED TO PERMIT INSTALLATION OF NEW CONCRETE SLAB NEW FINISH FLOORING

REMOVE AND DISPOSE OF EXISTING CERAMIC WALL TILE

REMOVE AND DISPOSE OF EXISTING CERAMIC FLOOR TILE

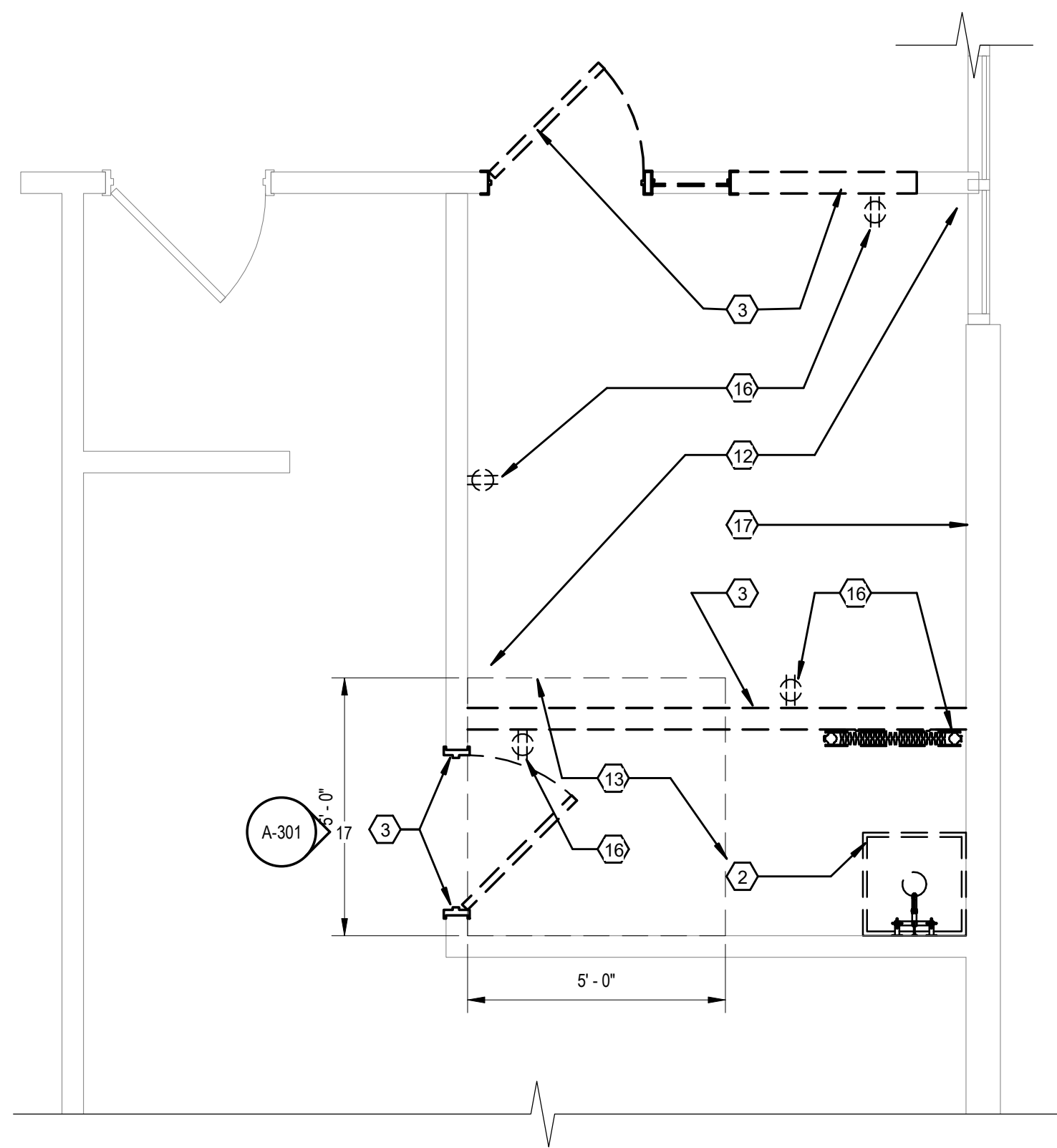
REMOVE AND DISPOSE OF EXISTING RETAIN CIRCUIT FOR REUSE WITH NEW CIRCLES IN RENOVATED RESTROOM

REMOVE WALL FINISH AND INSTALL SLOD BLOCKING FROM FLOOR TO CEILING TO BLOCK OFF EXISTING STRUCTURE'S REQUIREMENTS FOR INSTALLATION OF ADULT CHANGING STATION

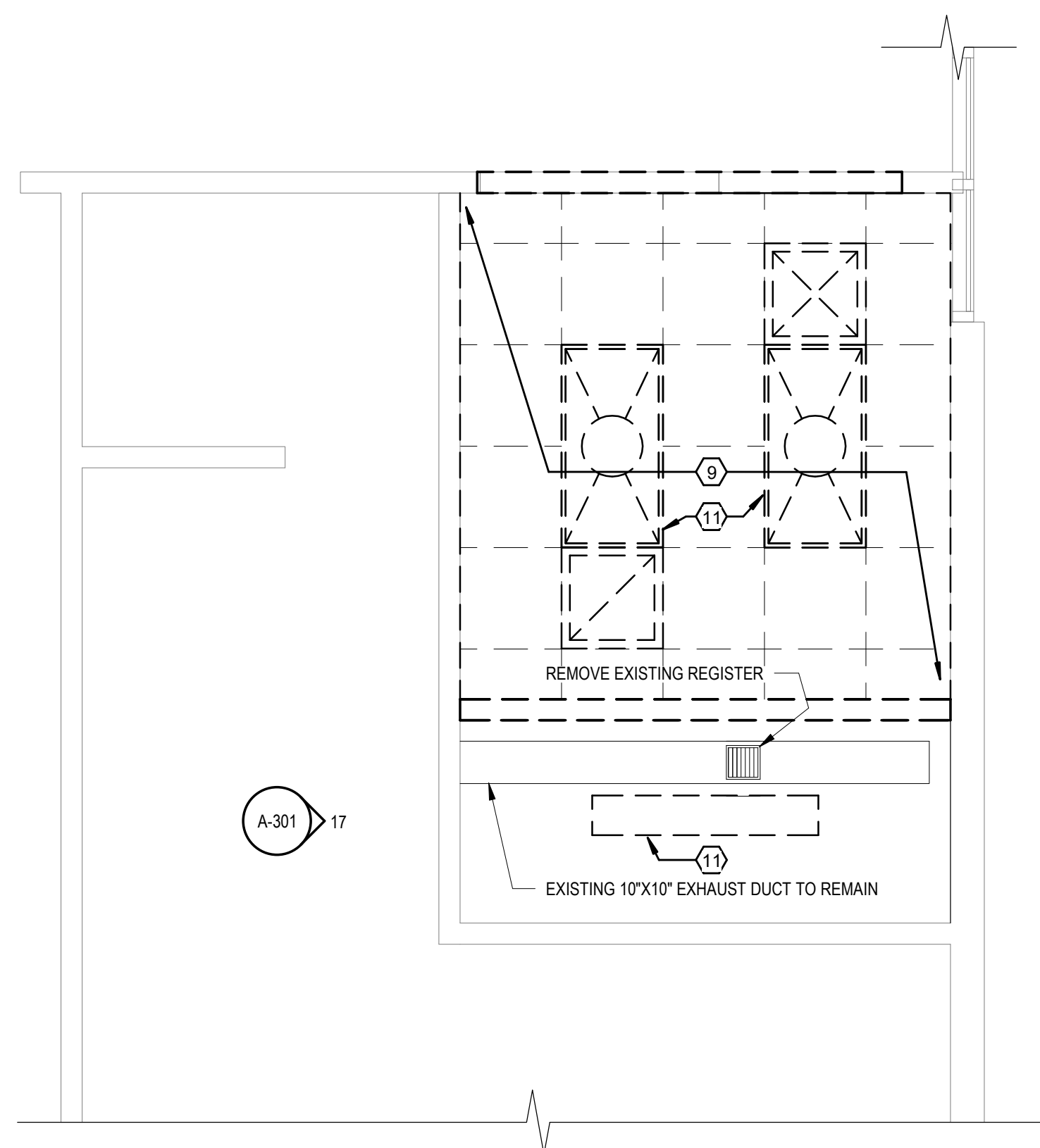
	2X2 ACOUSTICAL CEILING TILE
	GYPSUM WALL BOARD
	2X2 LIGHT FIXTURE- LITHONIA 24/TL2-33L-ADP-GZ1-LP835 OR APPROVED EQUAL
	2X2 SUPPLY DIFFUSER
	1X1 EXHAUST DIFFUSER
	CEILING HEIGHT A.F.F.
	OCCUPANCY SENSOR
	SPRINKLER HEAD
	FIRE ALARM STROBE

NOTE: REFER TO "FF", "M", AND "E" DRAWINGS FOR EXACT FIXTURE EQUIPMENT TYPE(S), SIZES AND ADDITIONAL INFORMATION.

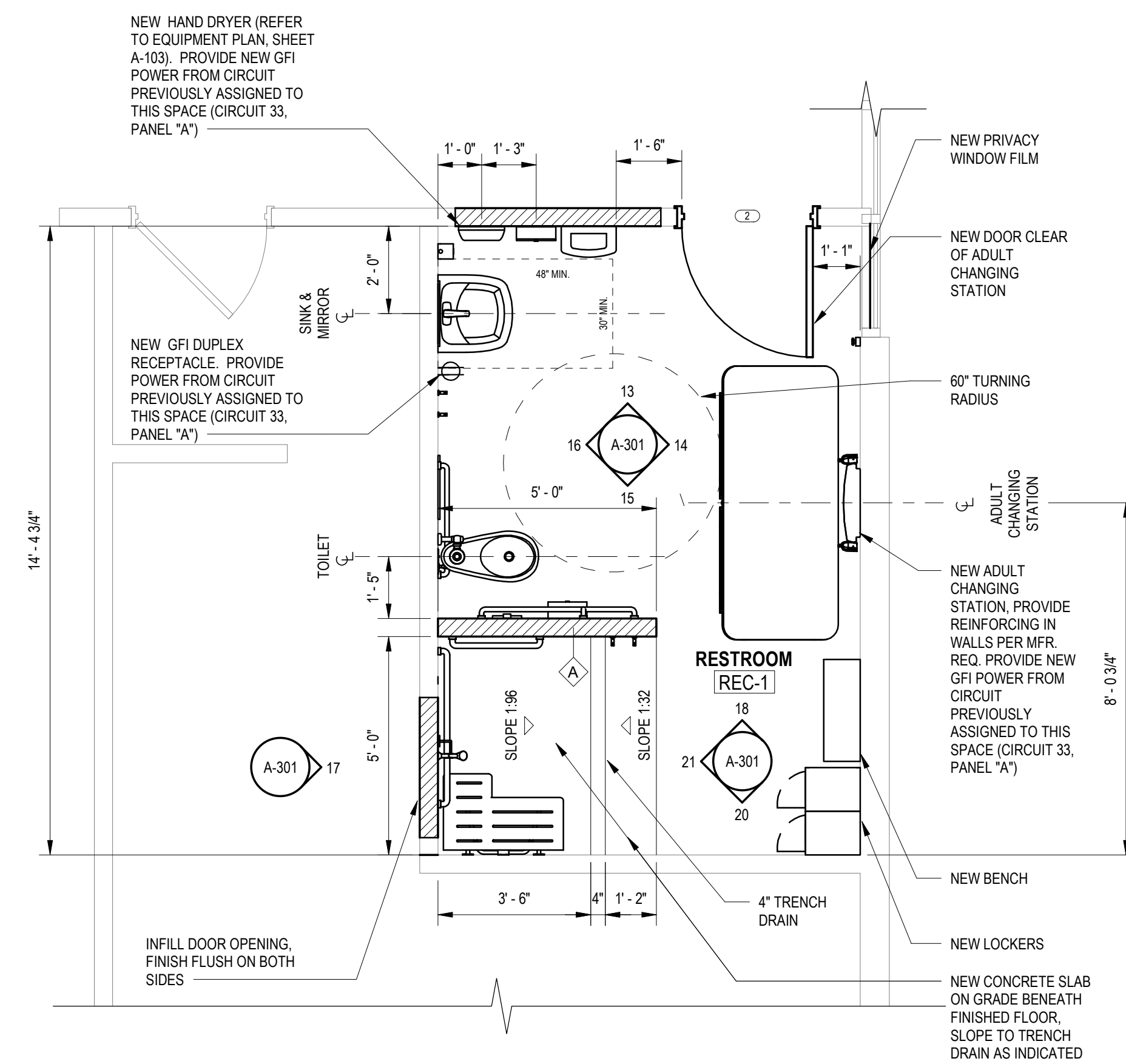
— EXISTING ITEM(S) / EQUIPMENT TO REMAIN
- - - EXISTING ITEM(S) / EQUIPMENT TO BE REMOVED



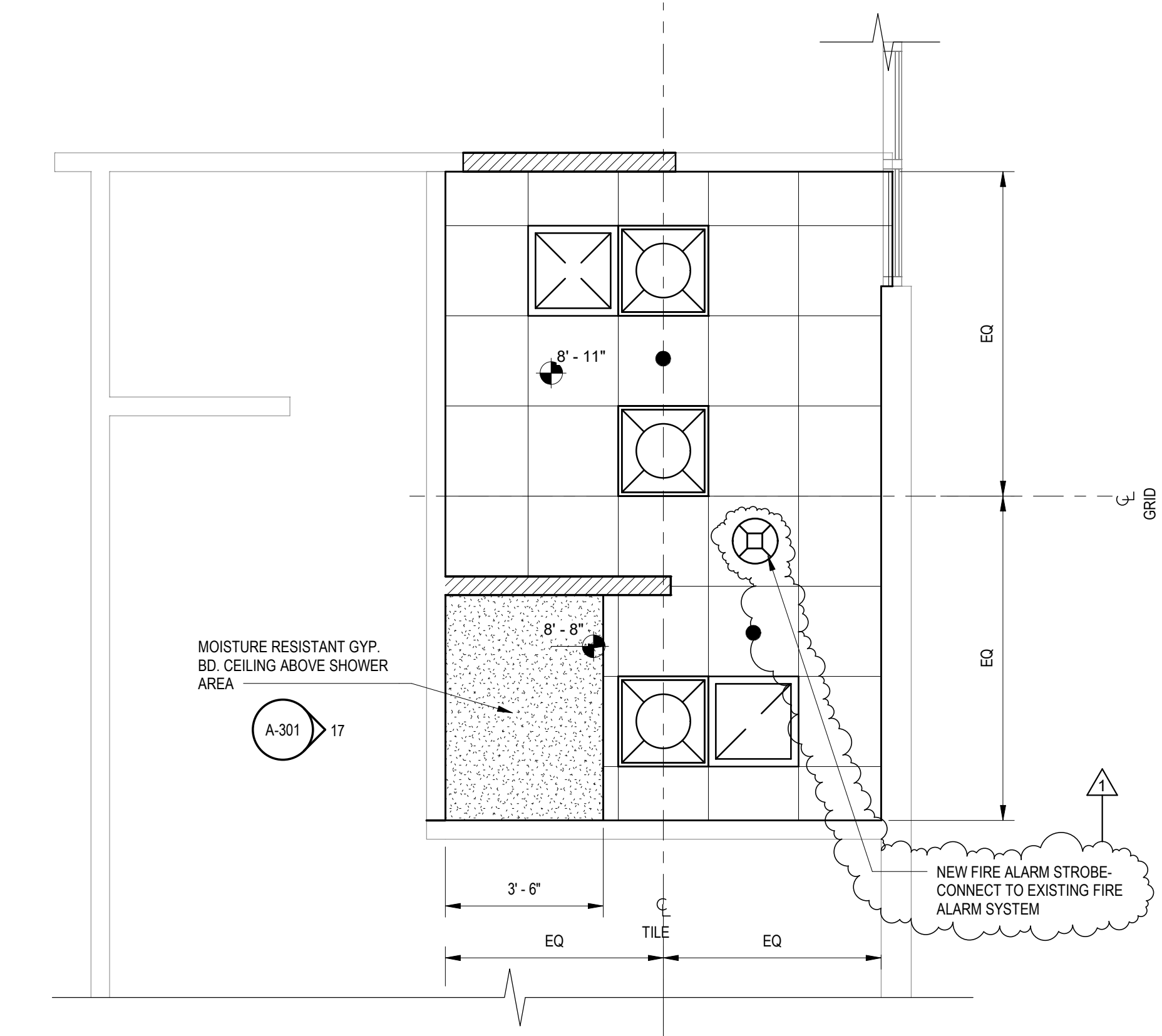
SCALE: 3/8" = 1'-0"



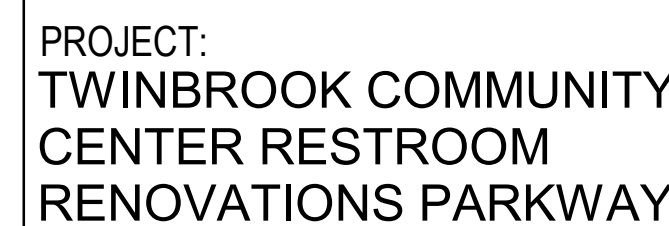
SCALE: 3/8" = 1'-0"



SCALE: 3/8" = 1'-0"



SCALE: 3/8" = 1'-0"



PROJECT ADDRESS:
12920 TWINBROOK PARKWAY
ROCKVILLE, MARYLAND 20851

8401 Connecticut Ave. Suite 350
Chevy Chase, Maryland
Phone: 301-718-0080
Fax: 301-718-9520
www.delta-eas.com



I certify that these documents were prepared or approved by me, and that I am a duly licensed professional under the laws of the State of Maryland.
license number 13892 , expiration date 2026-06-24

[illegible]

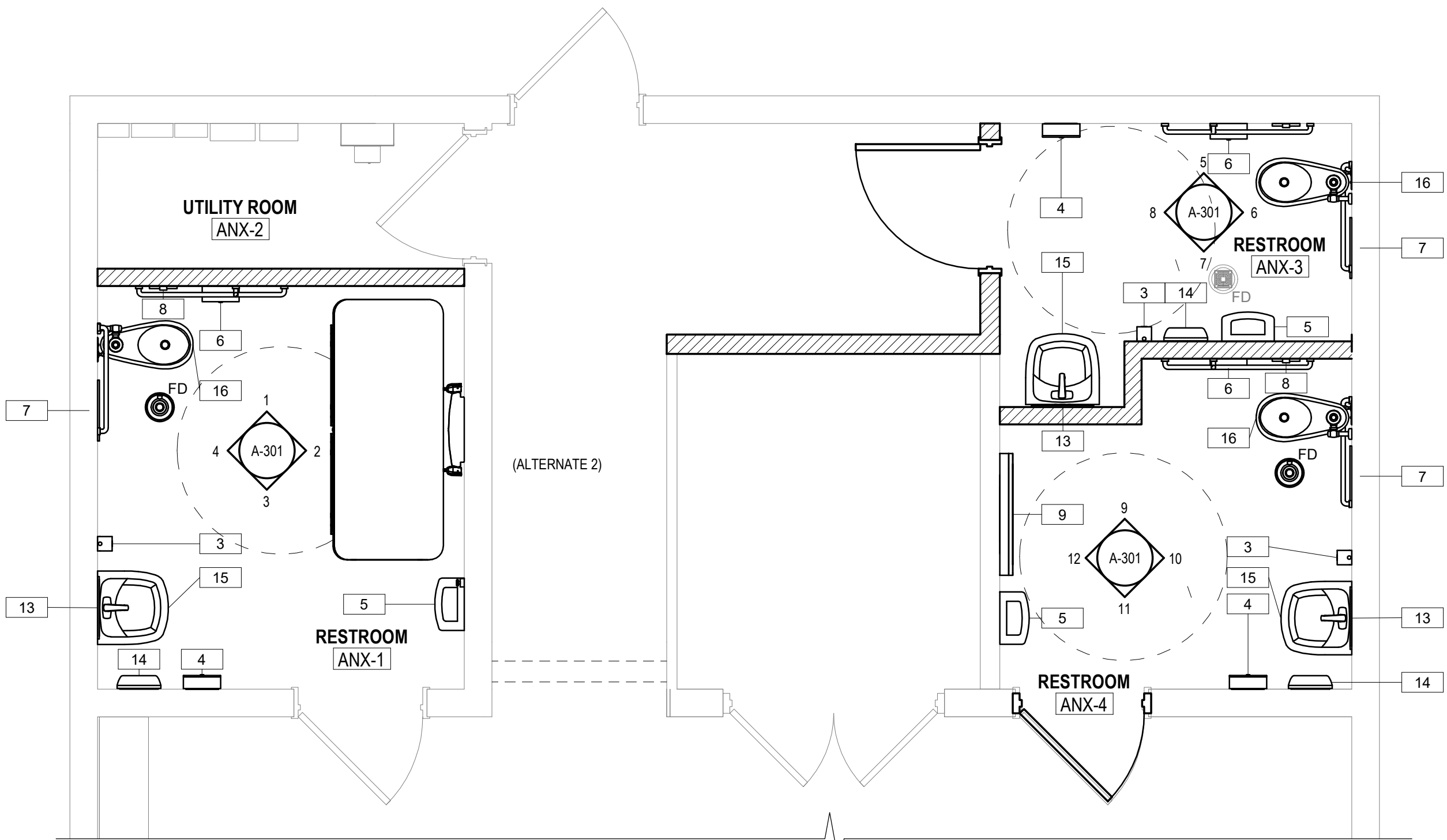
PROJECT NO:	2019.331.012
DRAWN BY:	LA
CHECKED BY:	DDA

RESUBMISSION: 100% 07-22-2024

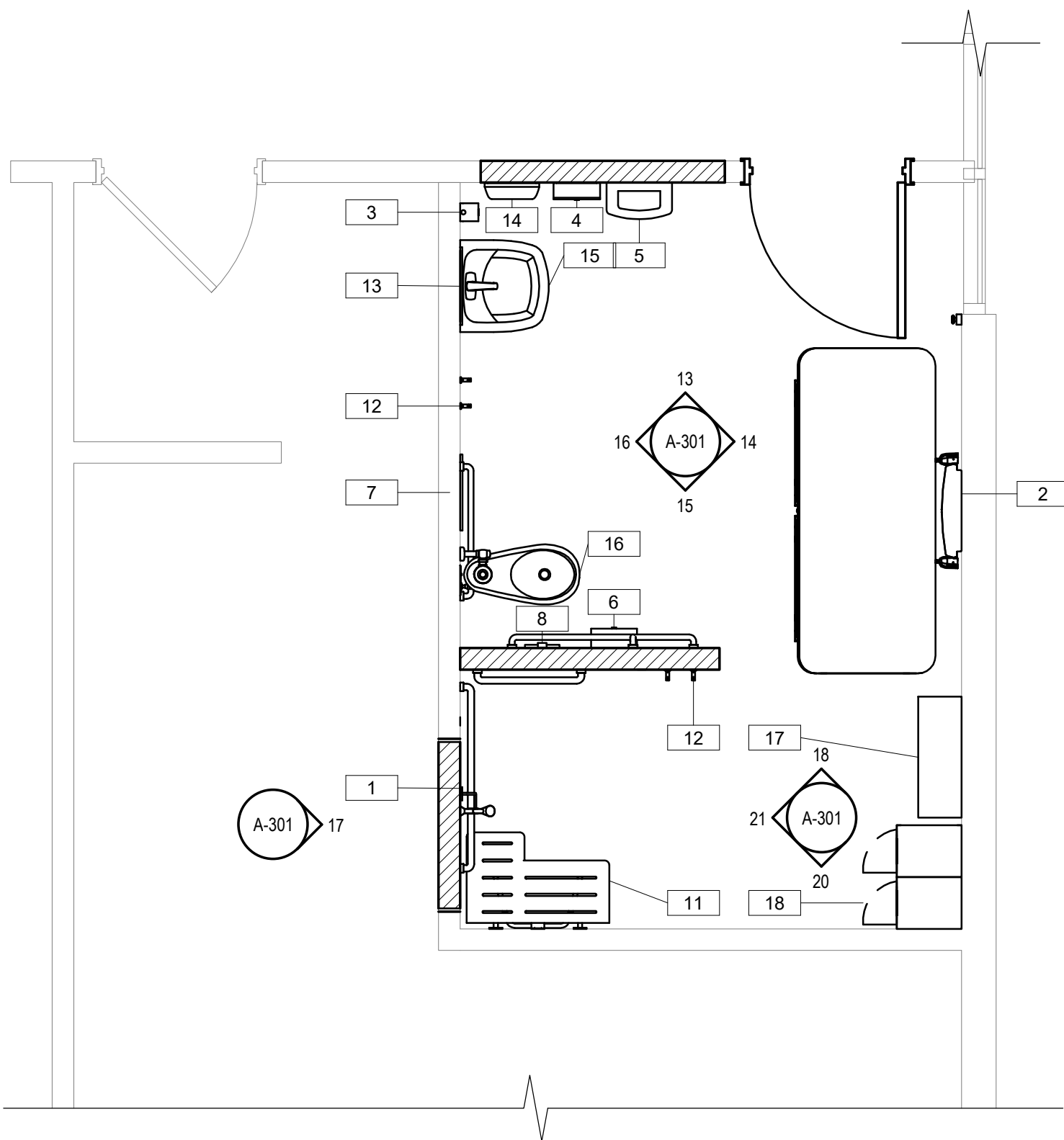
SHEET TITLE: PLANS

A-102

EQUIPMENT SCHEDULE				
EQUIPMENT NUMBER	EQUIPMENT NAME	Manufacturer	Model	COMMENTS
1	GRAB BARS	Bobrick Washroom Equipment, Inc.	B-5806	REFER TO INTERIOR ELEVATION FOR QTY, LENGTH & ORIENTATION
3	SOAP DISPENSER	Bobrick Washroom Equipment, Inc.	B-2012	
4	PAPER TOWEL DISPENSER	Bobrick Washroom Equipment, Inc.	B-262	
5	WASTE RECEPTACLE	American Specialties Inc.	20826-T	
6	TOILET TISSUE DISPENSER	American Specialties Inc.	0046	
7	TOILET SEAT COVER DISPENSER	Bobrick Washroom Equipment, Inc.	B-3013	
8	SANITARY NAPKIN DISPOSAL	Bobrick Washroom Equipment, Inc.	B-3513	
9	BABY CHANGING TABLE	Koala Care	KB200-55SS	
10	SHOWER ROD	Bobrick Washroom Equipment, Inc.	B-6047x60	
11	FOLDING SHOWER SEAT	Bobrick Washroom Equipment, Inc.	B-5181	
12	COAT HOOK	Bobrick Washroom Equipment, Inc.	B-5642	
13	MIRROR	Bobrick Washroom Equipment, Inc.	B-165	
14	HAND DRYER	Bobrick	B-7125	
15	LAVATORY	American Standard	0954.004EC	
16	WATER CLOSET W/ FLUSH VALVE	Sloan Valve	WETS-2000, 1301	
17	BENCH	American Standard (WC) & Sloan (Flush Valve)	SEE NOTES	WC=Madera Flowise 16 1/2" high Elongated bowl, Flush Valve = 111 ess-1.28 TMO-HW
18	LOCKERS	Holman, Incorporated	PA-1	



1 ANNEX FIRST FLOOR PLAN - EQUIPMENT
A-103 SCALE: 3/8" = 1'-0"



2 Y-MAIN BLDG. FIRST FLOOR PLAN - EQUIPMENT PLAN
A-103 SCALE: 3/8" = 1'-0"



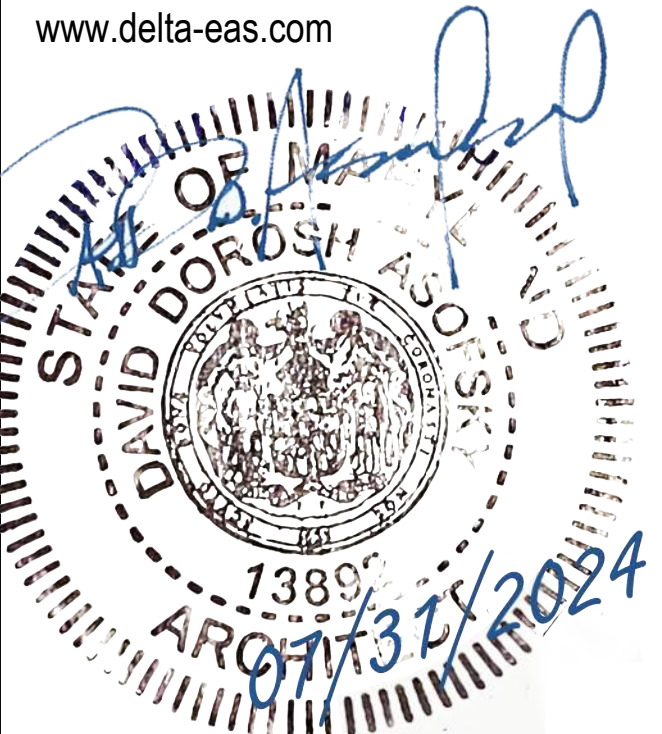
PROJECT:
TWINBROOK COMMUNITY
CENTER RESTROOM
RENOVATIONS PARKWAY

PROJECT ADDRESS:
12920 TWINBROOK PARKWAY
ROCKVILLE, MARYLAND 20851

ARCHITECT:



8401 Connecticut Ave. Suite 350
Chevy Chase, Maryland
Phone: 301-718-0080
Fax: 301-718-9520
www.delta-eas.com



REGISTRATION:

I certify that these documents were prepared or approved by me, and that I am a duly licensed professional under the laws of the State of Maryland. License number 13892, expiration date 2026-06-24

Revision

Number	Description	Date

PROJECT NO: 2019.331.012
DRAWN BY: LA
CHECKED BY: DDA

RESUBMISSION: 100% 07-22-2024

SHEET TITLE:
EQUIPMENT PLAN

A-103

Construction/Installation subject to inspection by Fire Marshal. Schedule all fire inspections online through My Government On-line Customer Service Portal.





PROJECT:
TWINBROOK COMMUNITY
CENTER RESTROOM
RENOVATIONS PARKWAY

PROJECT ADDRESS:
12920 TWINBROOK PARKWAY
ROCKVILLE, MARYLAND 20851

ARCHITECT:

DELTA

8401 Connecticut Ave. Suite 350
Chevy Chase, Maryland
Phone: 301-718-0080
Fax: 301-718-9520
www.delta-eas.com



REGISTRATION:

I certify that these documents were prepared or approved by me, and that I am a duly licensed professional under the laws of the State of Maryland. License number 13892, expiration date 06/13/2024

Revision

Number Description Date

PROJECT NO: 2019.331.012

DRAWN BY: LA

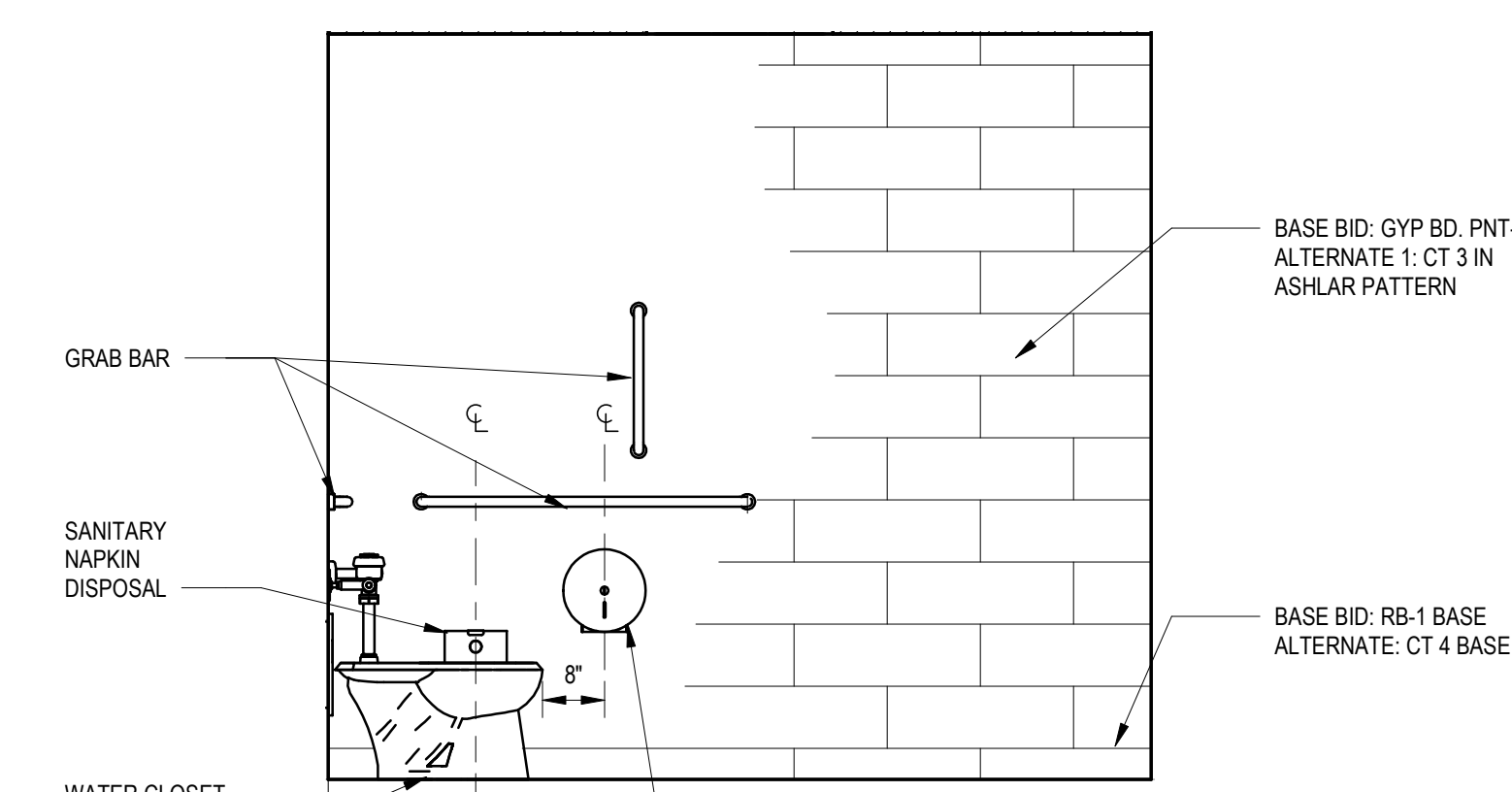
CHECKED BY: DDA

RESUBMISSION: 100% 07-22-2024

SHEET TITLE:
ELEVATIONS

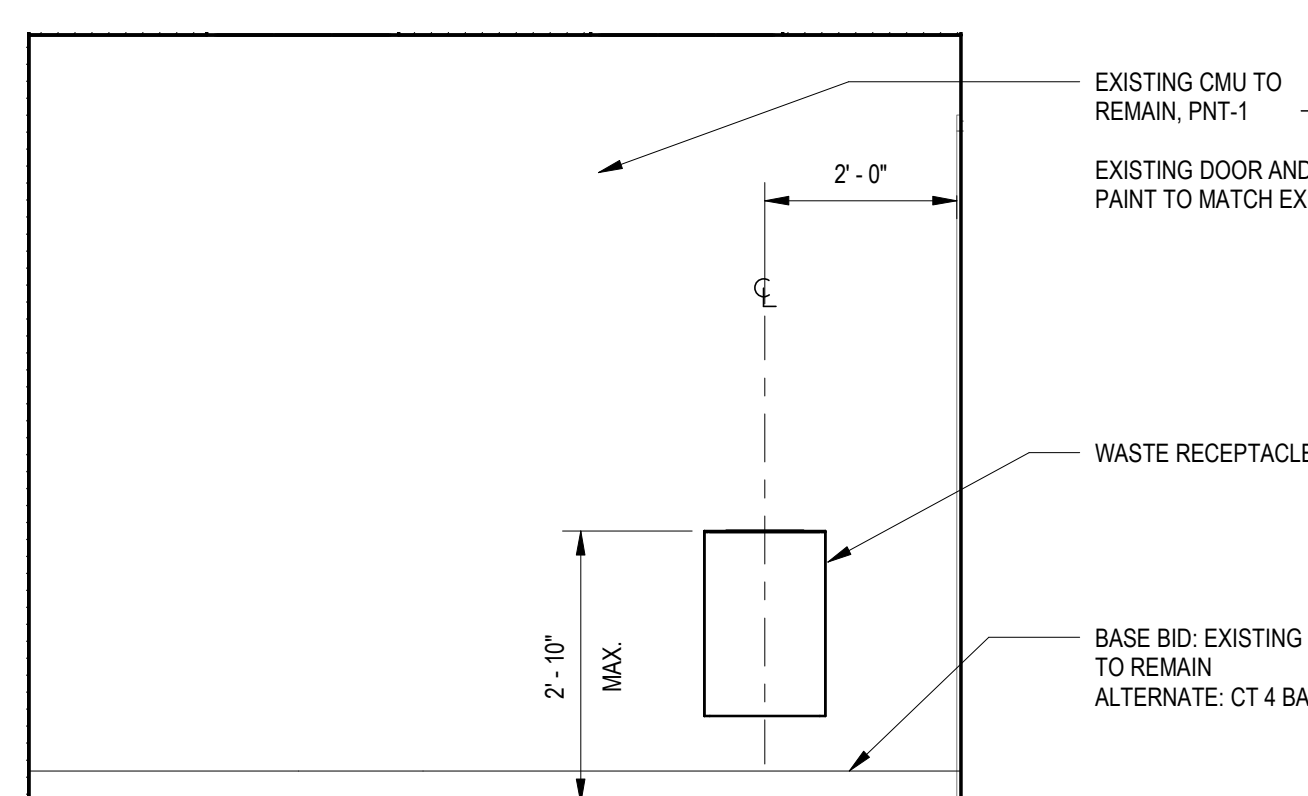
A-301

Construction/Installation subject to inspection by Fire Marshal. Schedule all fire inspections online through My Government On-line Customer Service Portal.



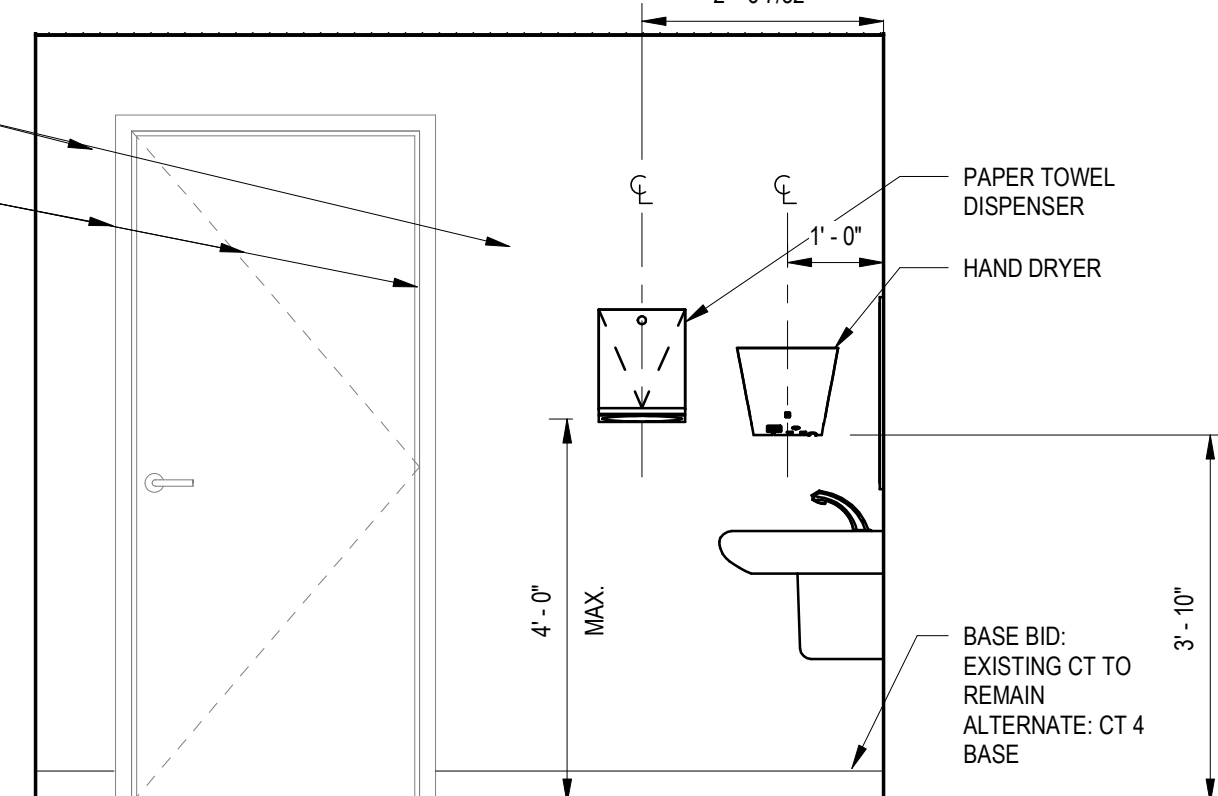
1 RESTROOM ANX-1 - NORTH ELEV.

A-301 SCALE: 1/2" = 1'-0"



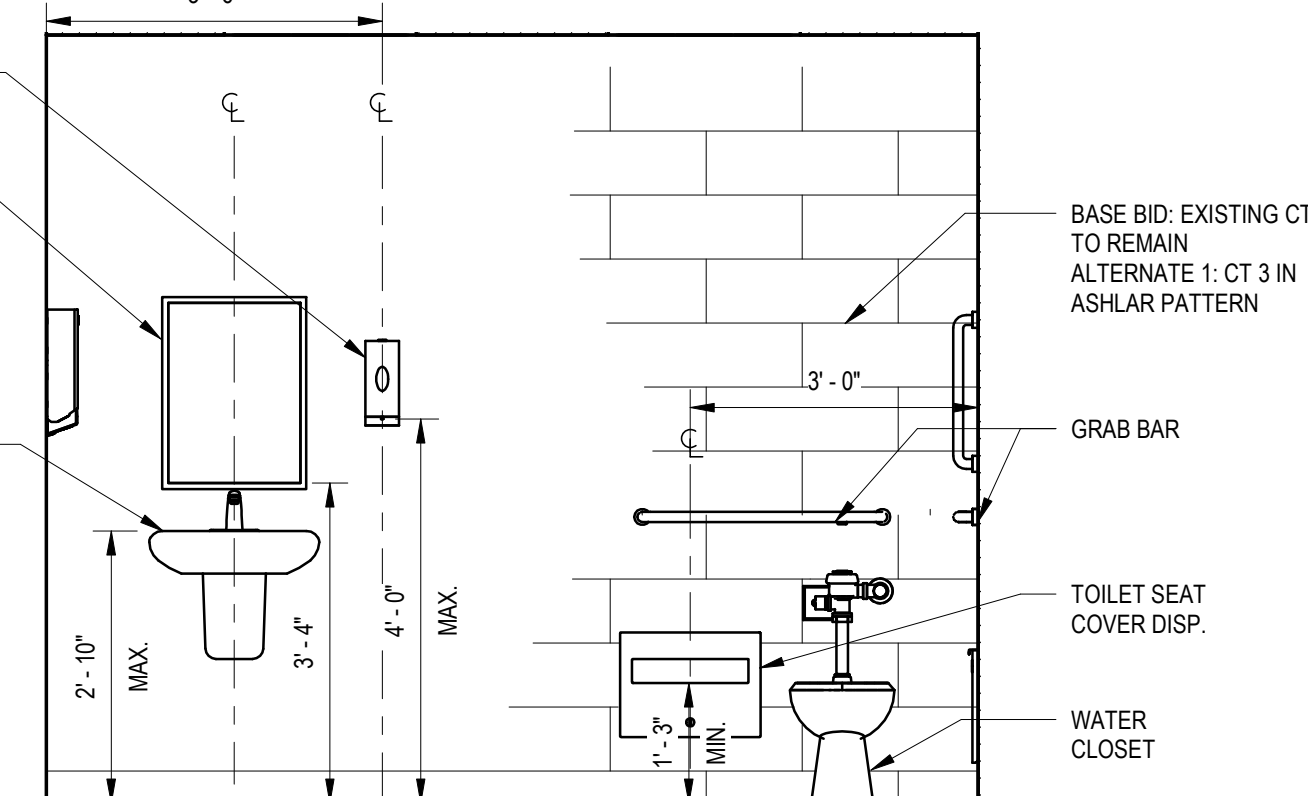
2 RESTROOM ANX-1 - EAST ELEV.

A-301 SCALE: 1/2" = 1'-0"



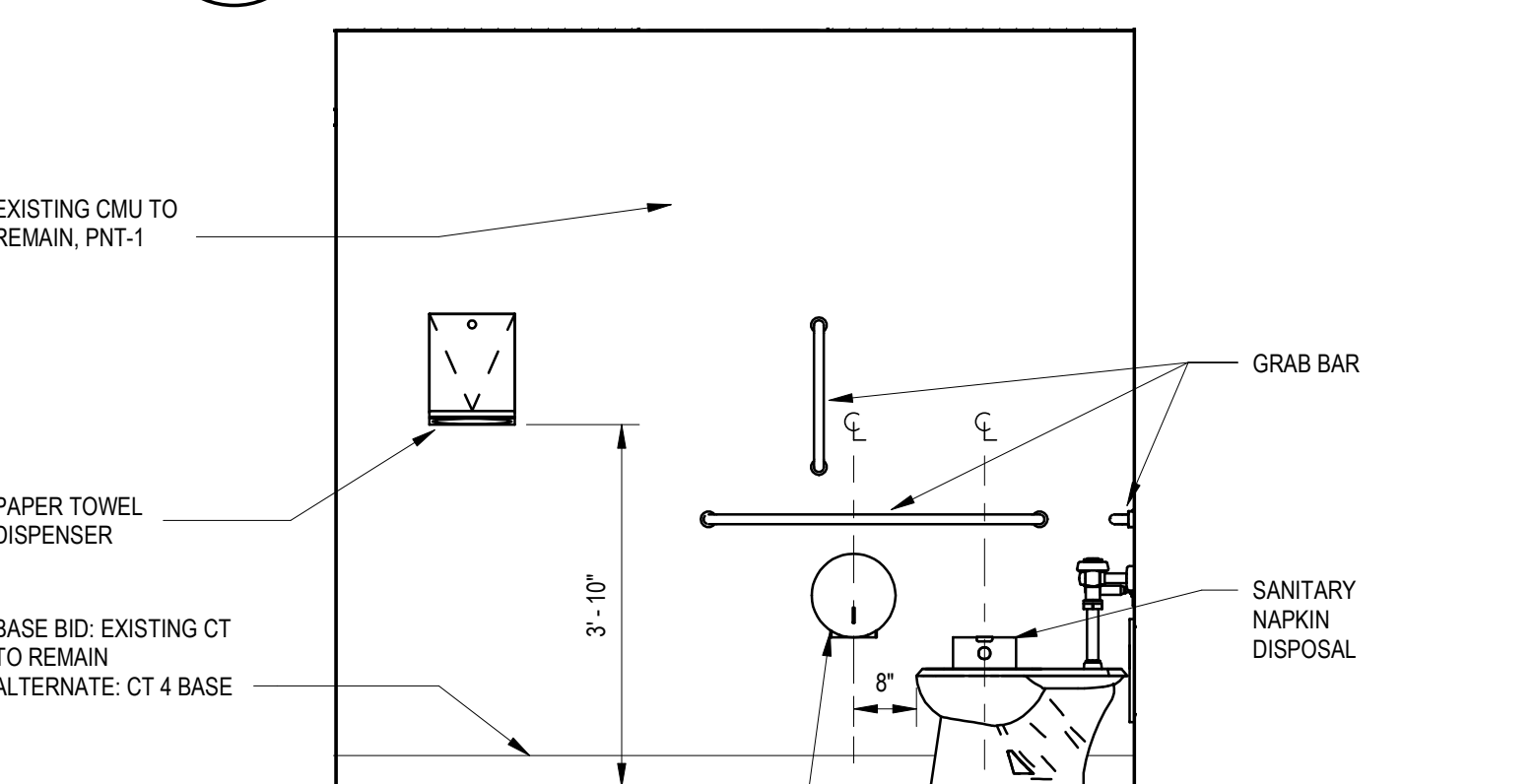
3 RESTROOM ANX-1 - SOUTH ELEV.

A-301 SCALE: 1/2" = 1'-0"



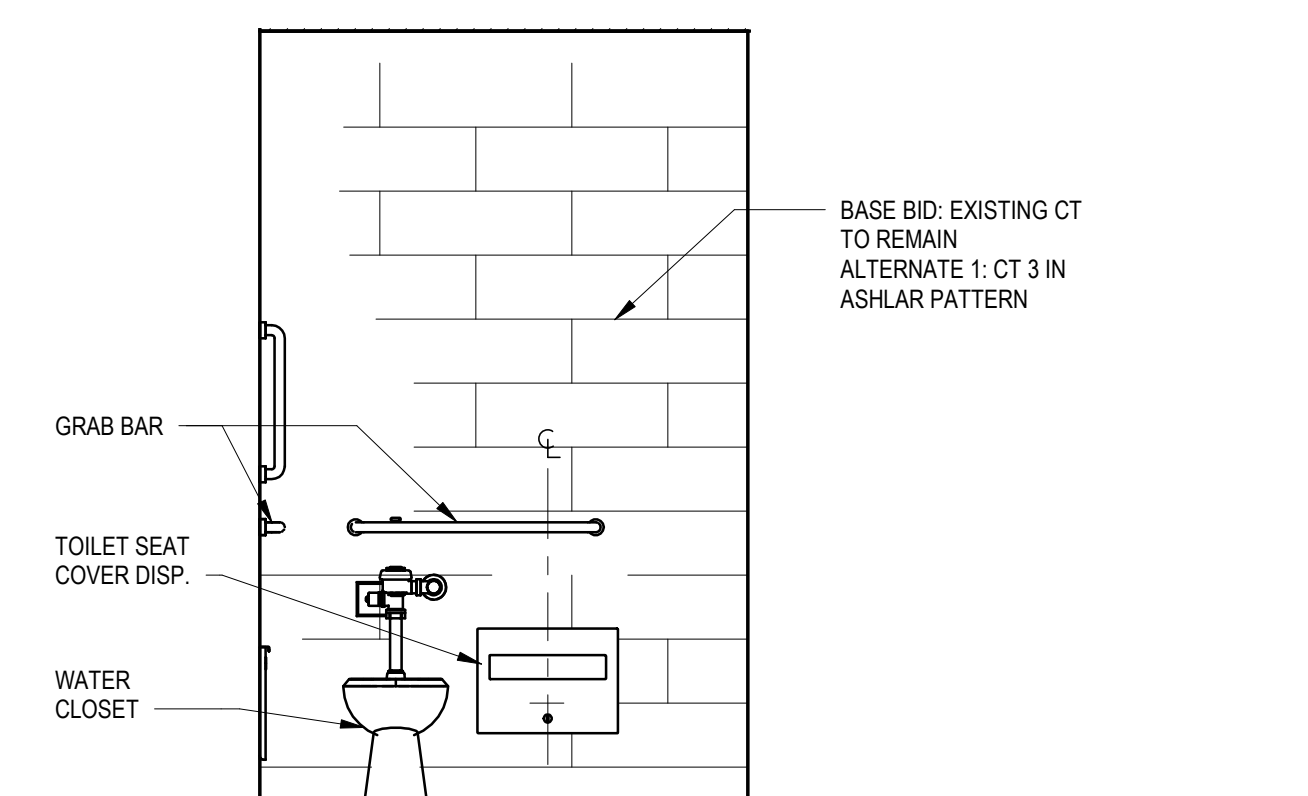
4 RESTROOM ANX-1 - WEST ELEV.

A-301 SCALE: 1/2" = 1'-0"



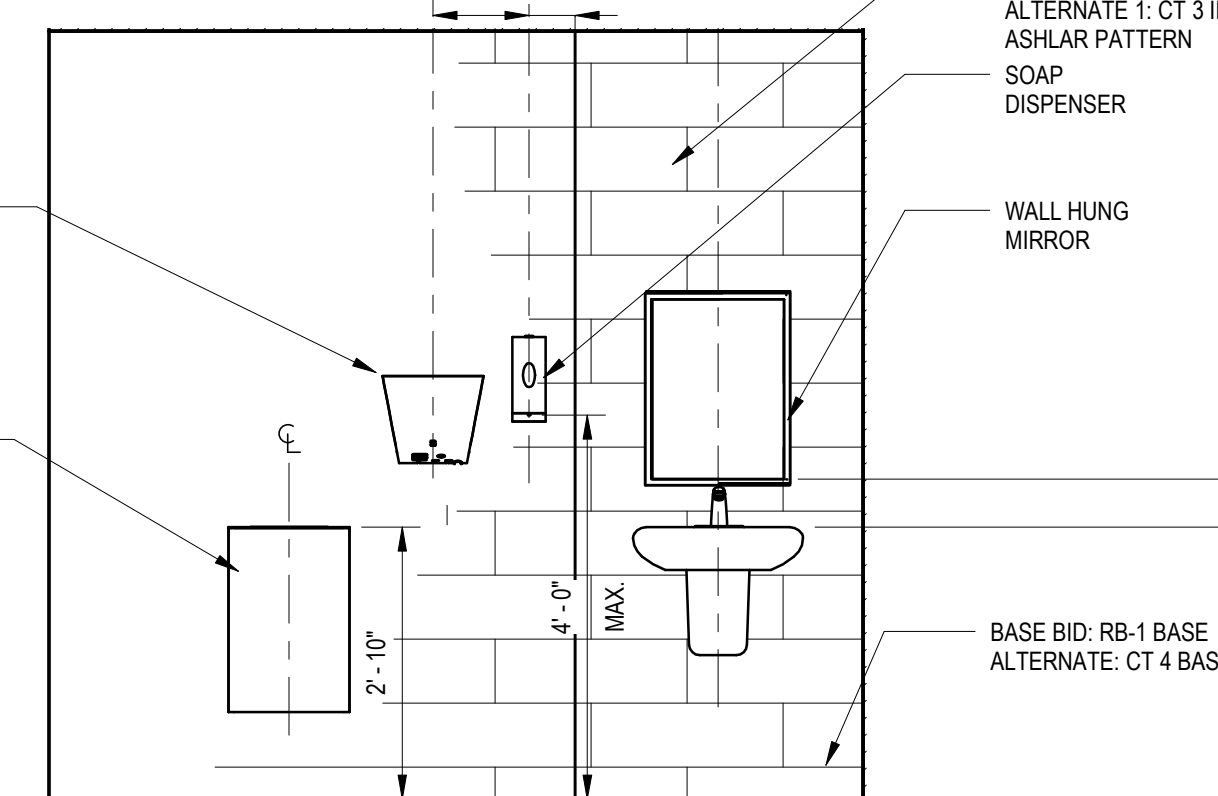
5 RESTROOM ANX-3 - NORTH ELEV.

A-301 SCALE: 1/2" = 1'-0"



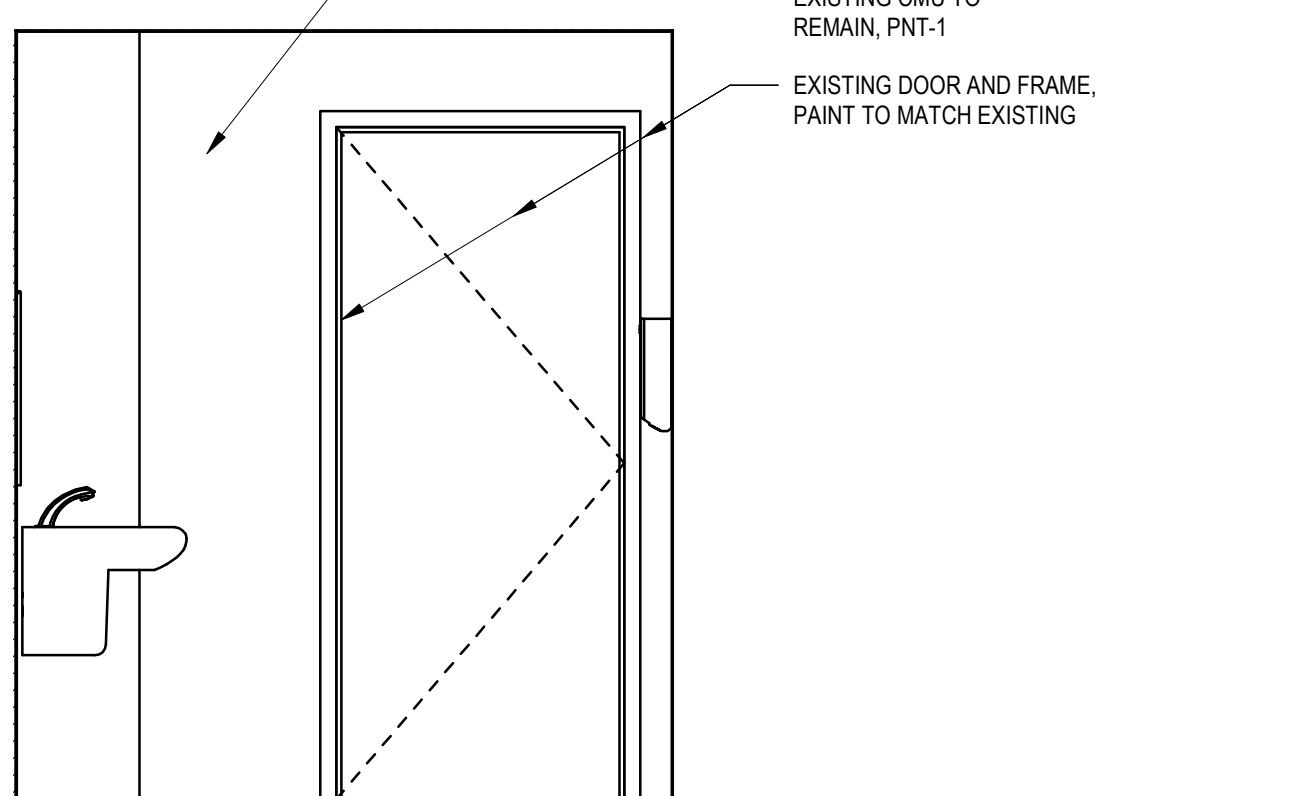
6 RESTROOM ANX-3 - EAST ELEV.

A-301 SCALE: 1/2" = 1'-0"



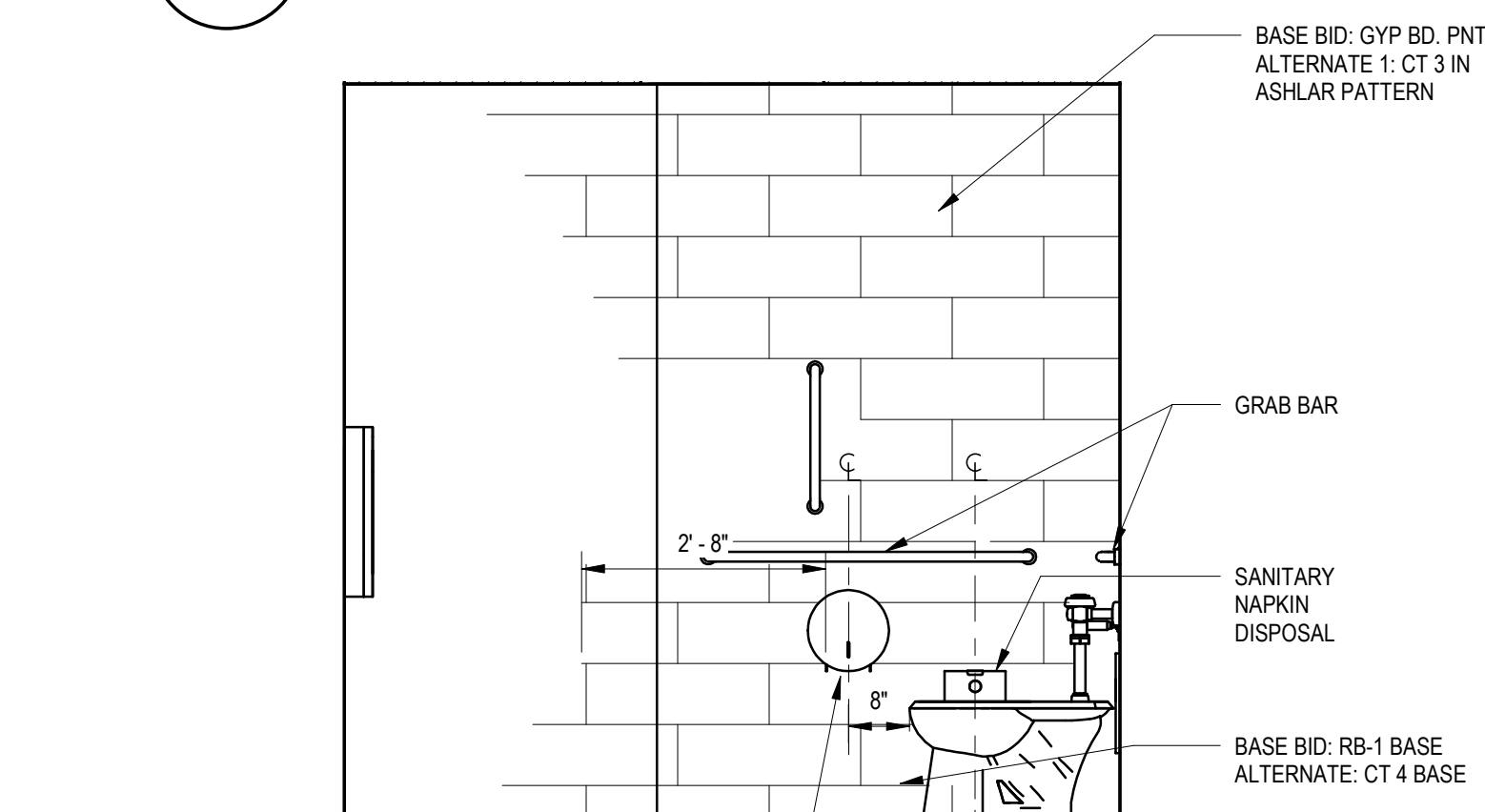
7 RESTROOM ANX-3 - SOUTH ELEV.

A-301 SCALE: 1/2" = 1'-0"



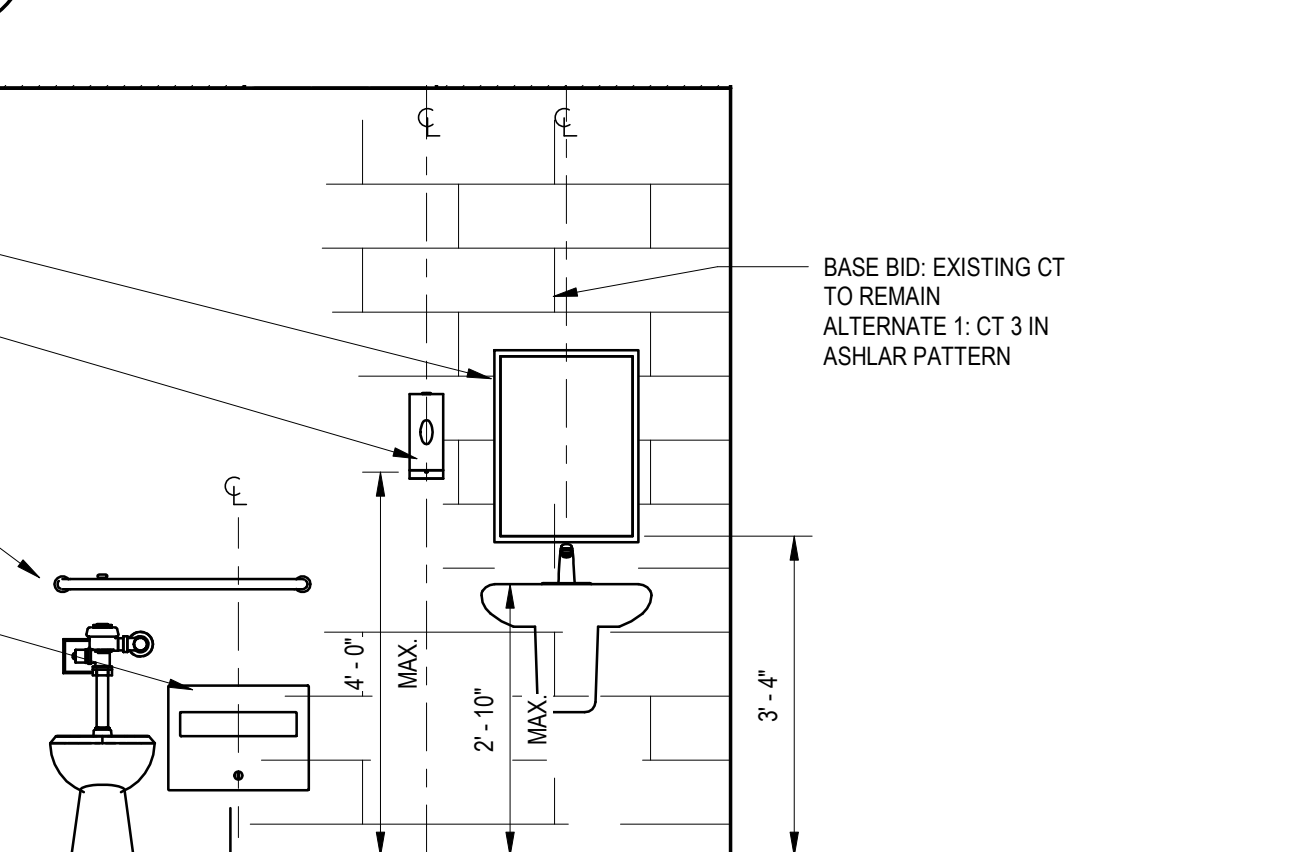
8 RESTROOM ANX-3 - WEST ELEV.

A-301 SCALE: 1/2" = 1'-0"



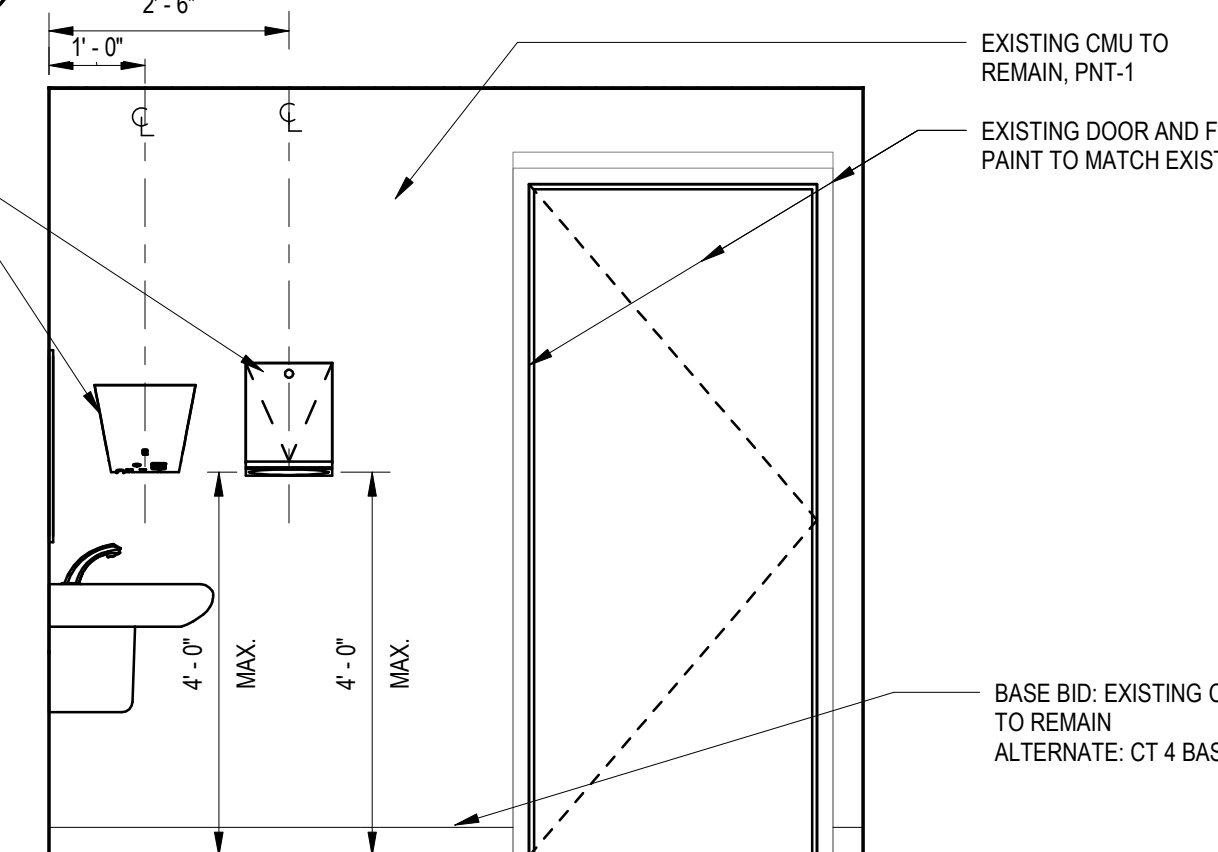
9 RESTROOM ANX-4 - NORTH ELEV.

A-301 SCALE: 1/2" = 1'-0"



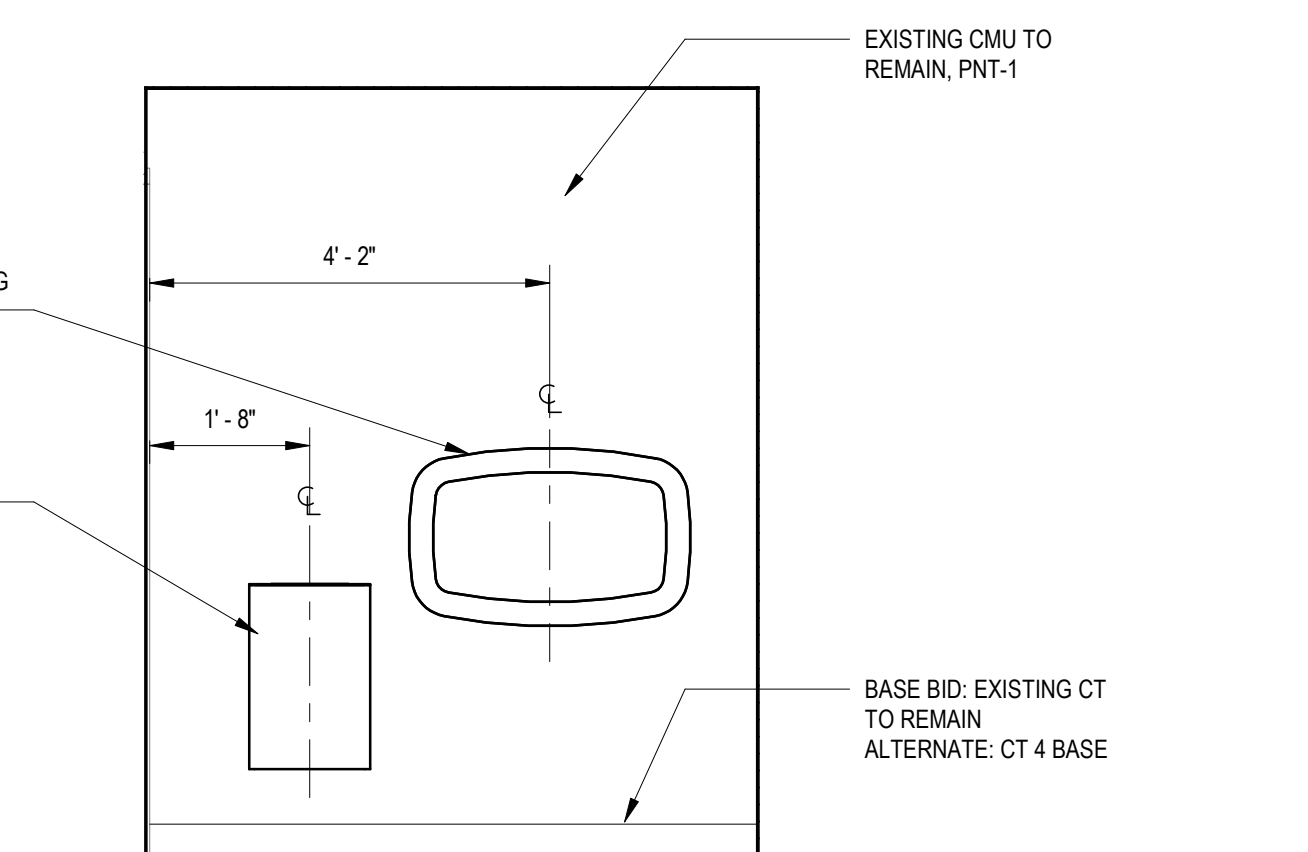
10 RESTROOM ANX-4 - EAST ELEV.

A-301 SCALE: 1/2" = 1'-0"



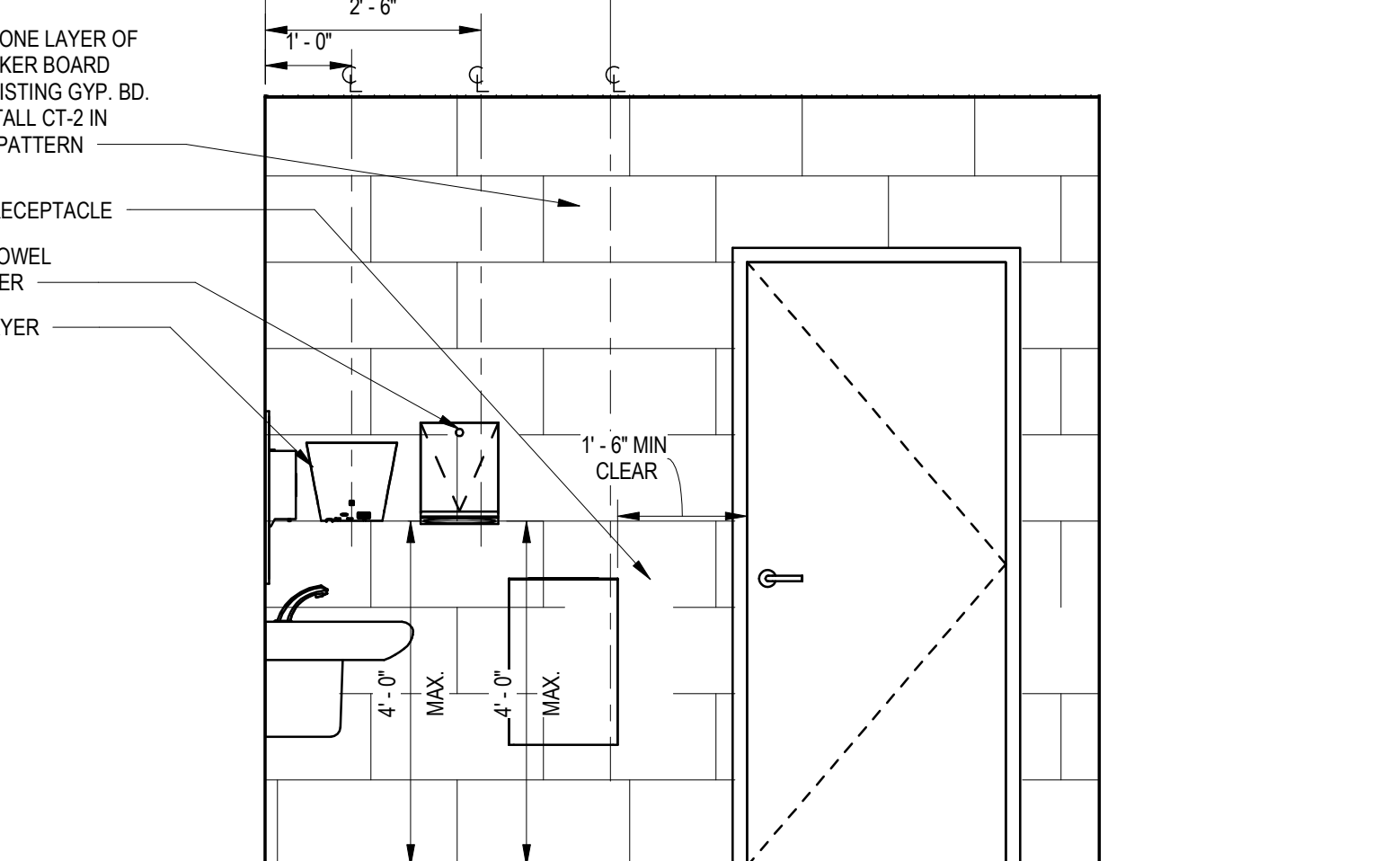
11 RESTROOM ANX-4 - SOUTH ELEV.

A-301 SCALE: 1/2" = 1'-0"



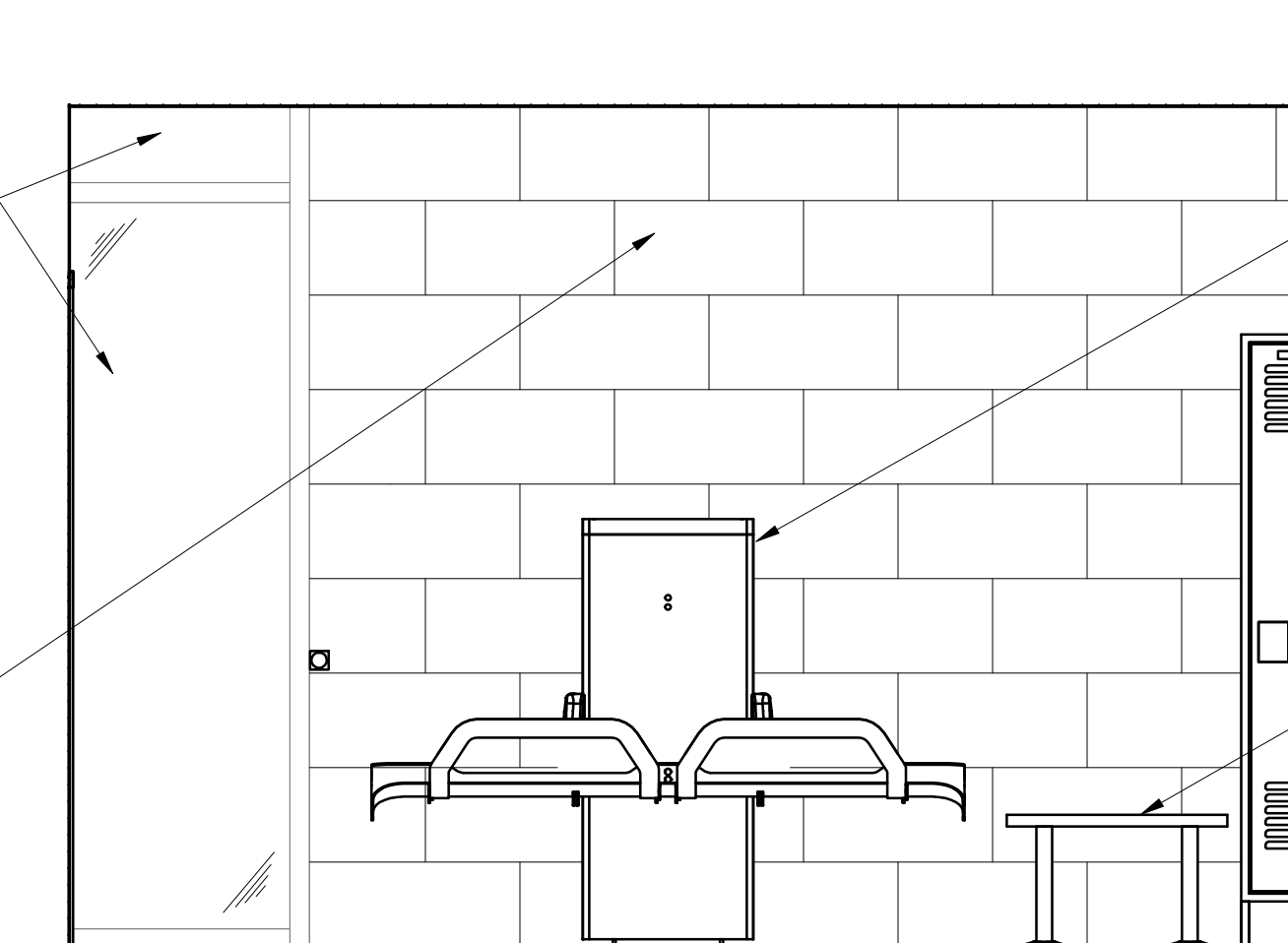
12 RESTROOM ANX-4 - WEST ELEV.

A-301 SCALE: 1/2" = 1'-0"



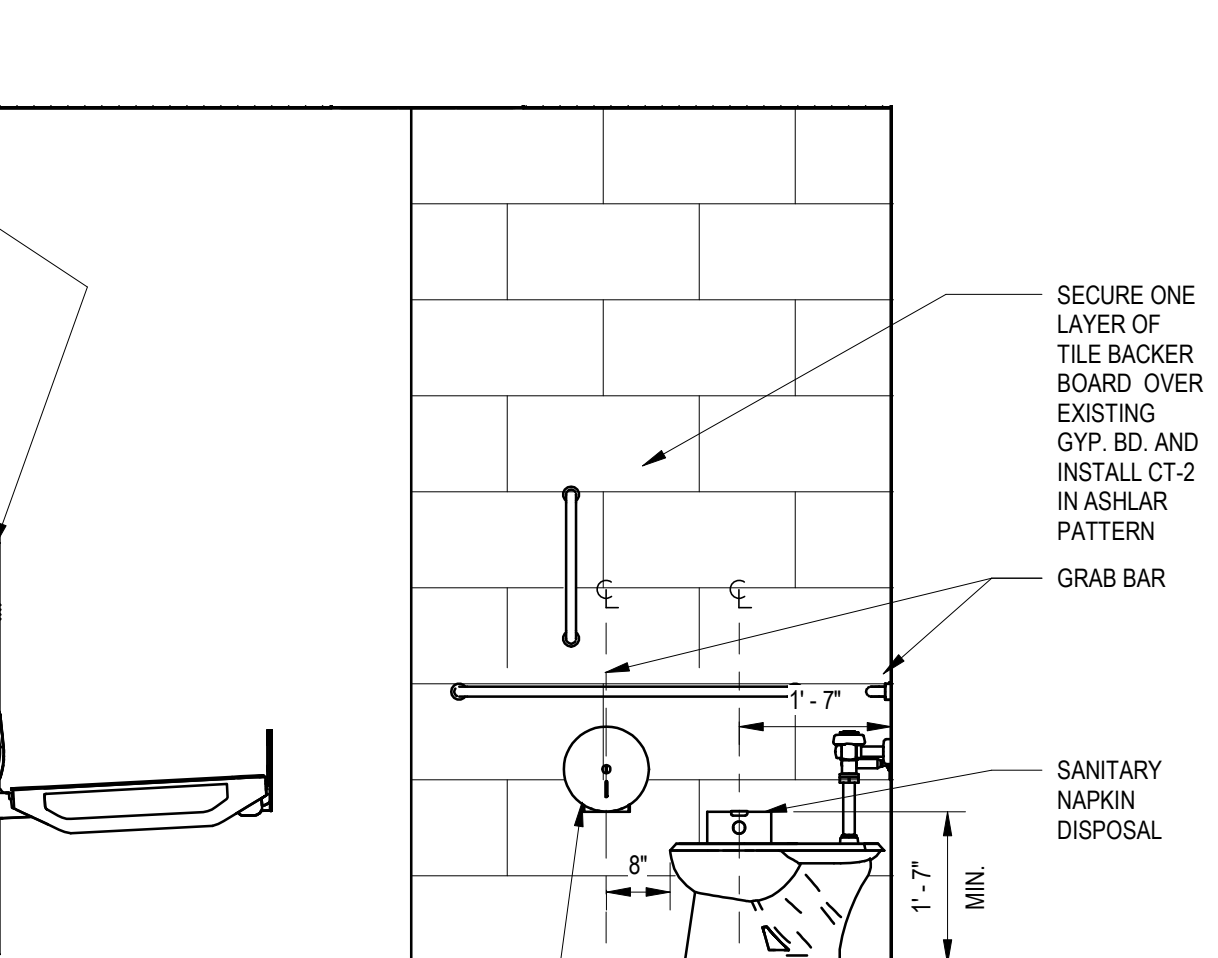
13 RESTROOM REC-1- NORTH ELEV. - TOILET AREA

A-301 SCALE: 1/2" = 1'-0"



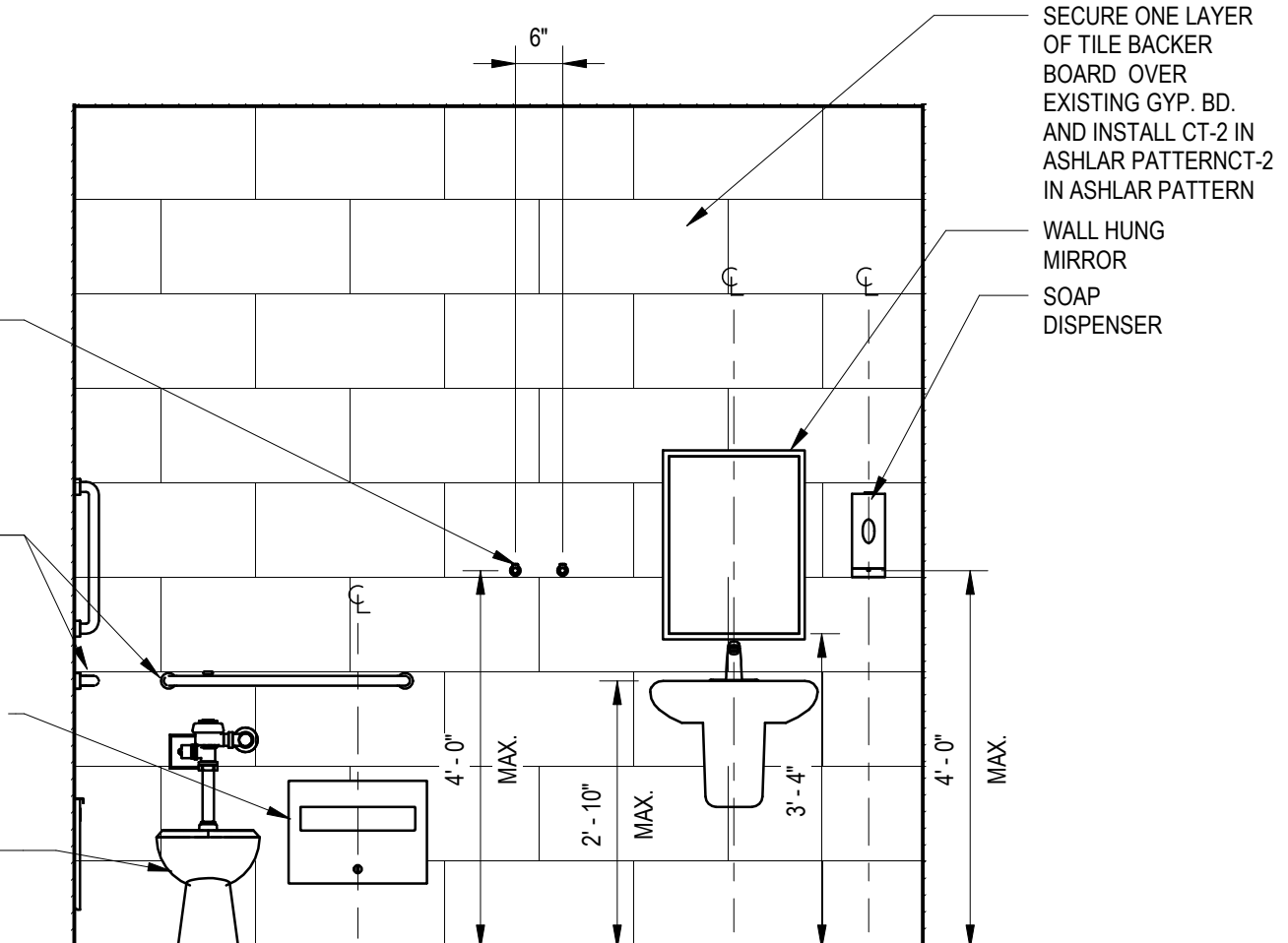
14 RESTROOM REC-1- EAST ELEV. - TOILET AREA

A-301 SCALE: 1/2" = 1'-0"



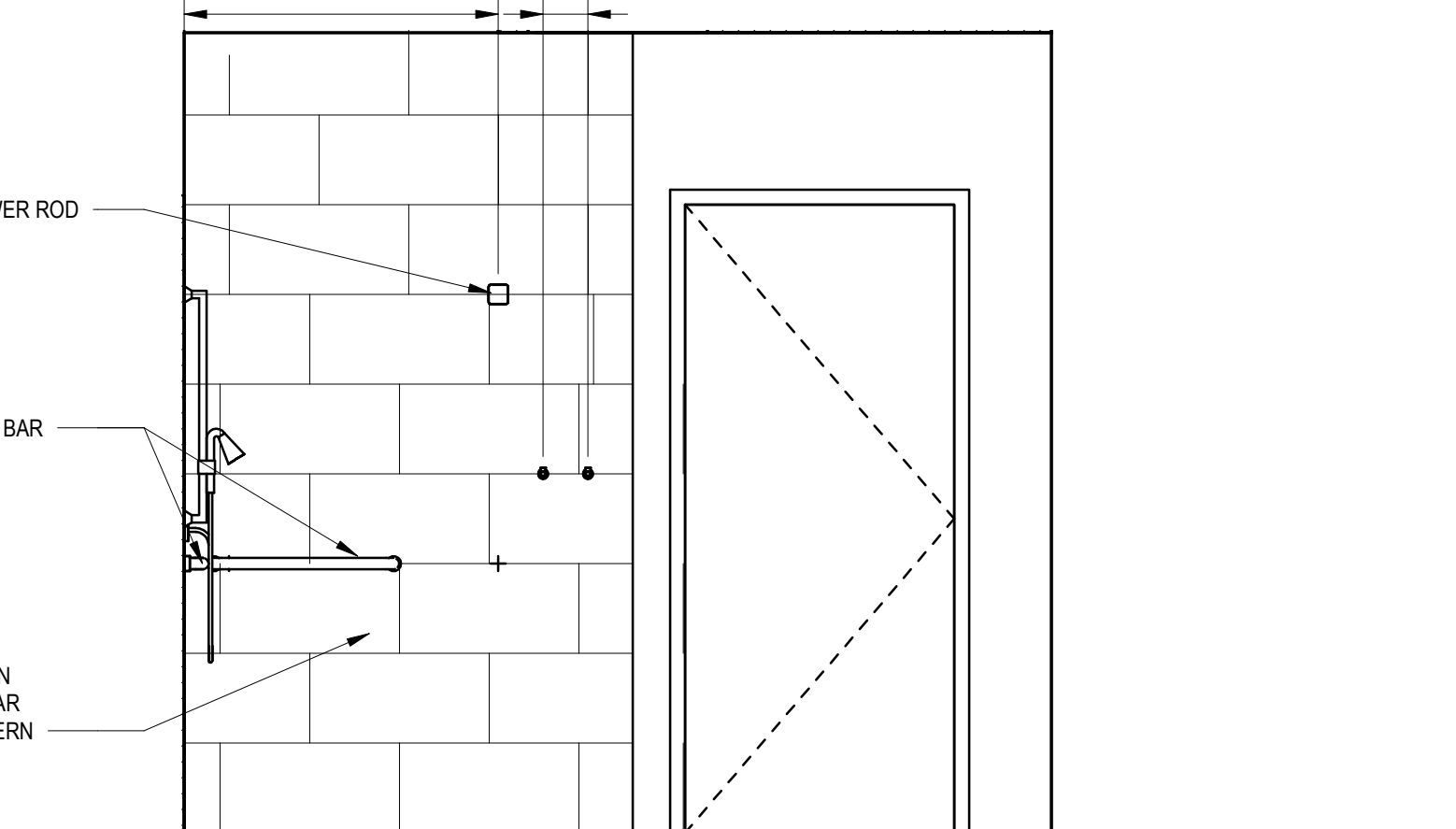
15 RESTROOM REC-1- SOUTH ELEV. - TOILET AREA

A-301 SCALE: 1/2" = 1'-0"



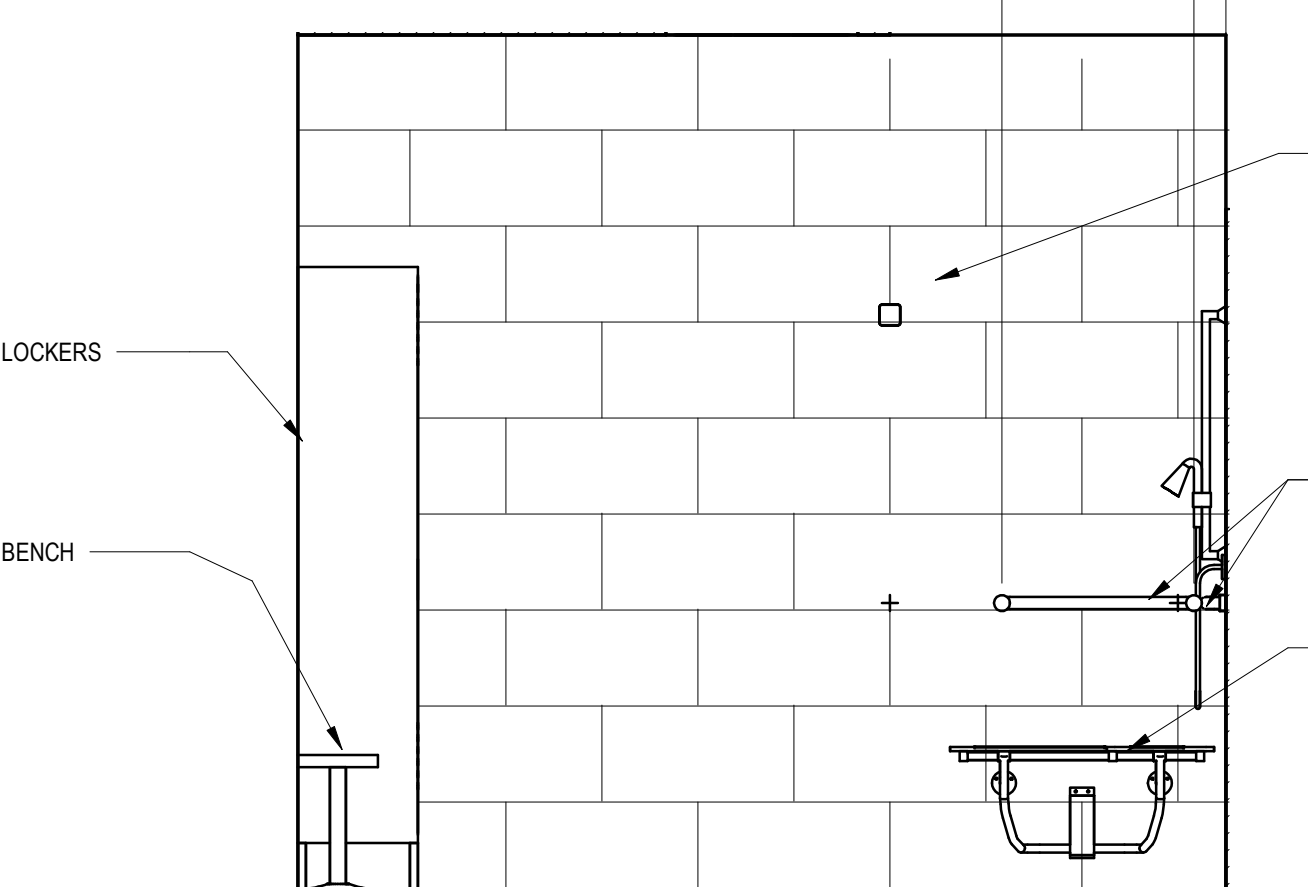
16 RESTROOM REC-1- WEST ELEV. - TOILET AREA

A-301 SCALE: 1/2" = 1'-0"



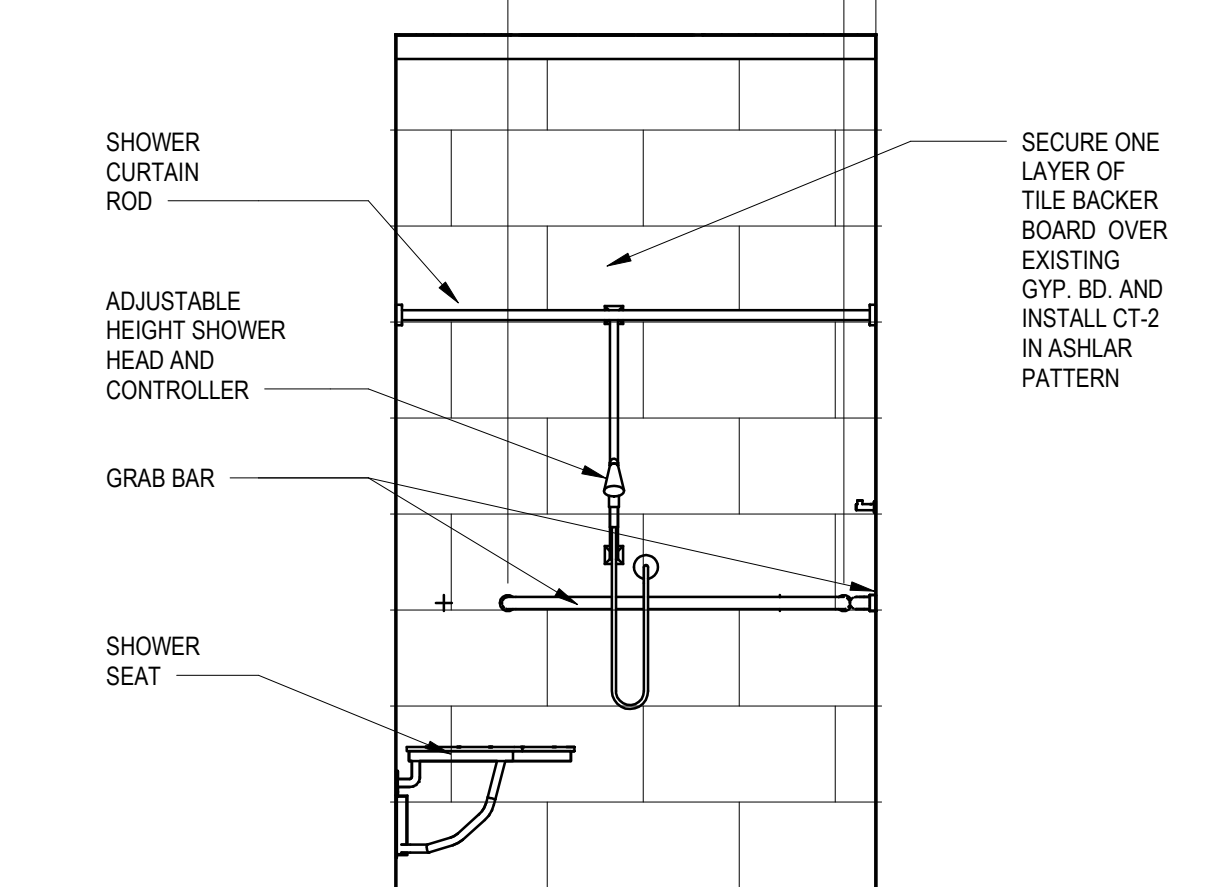
17 EXISTING RESTROOM

A-301 SCALE: 1/2" = 1'-0"



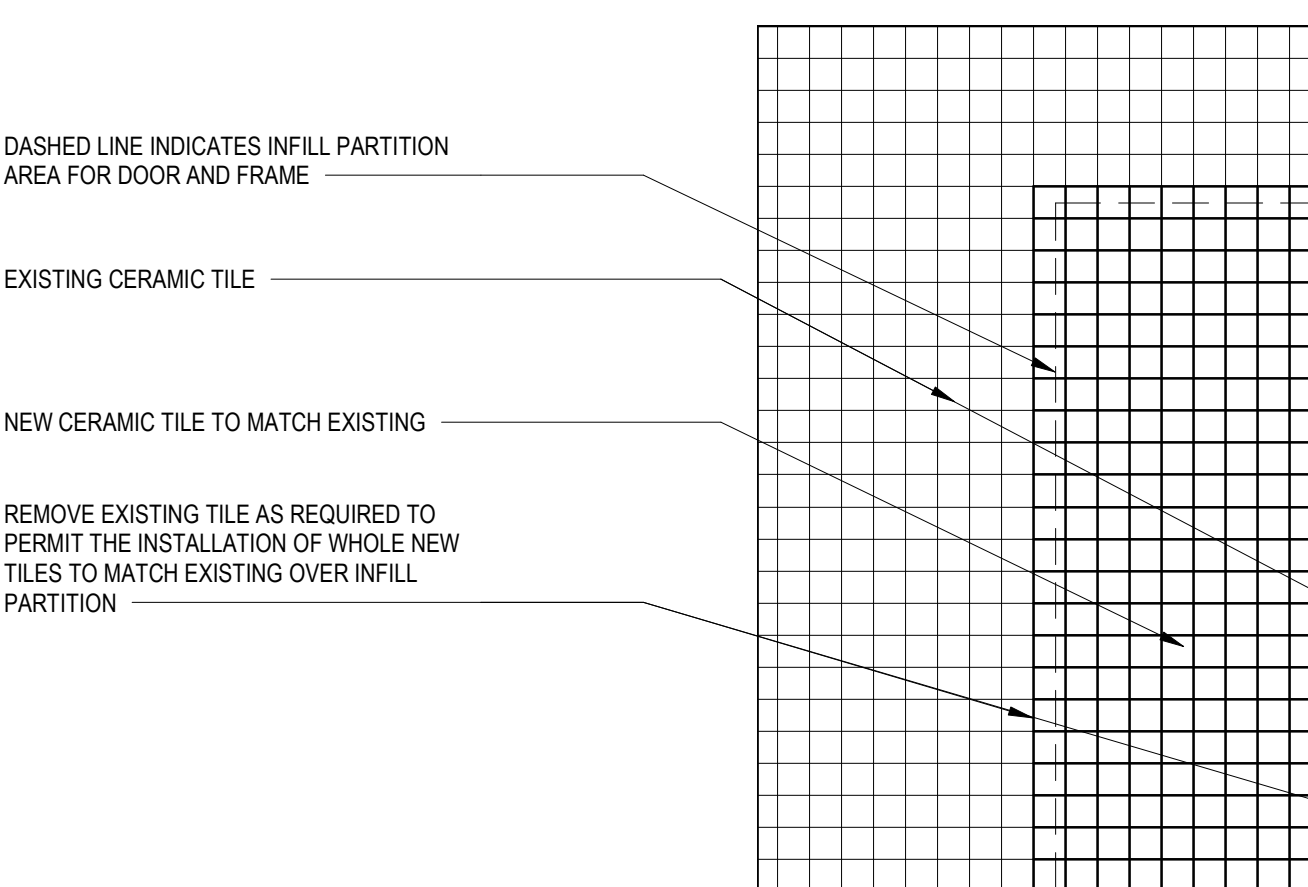
18 RESTROOM REC-1- NORTH ELEV. - SHOWER AREA

A-301 SCALE: 1/2" = 1'-0"



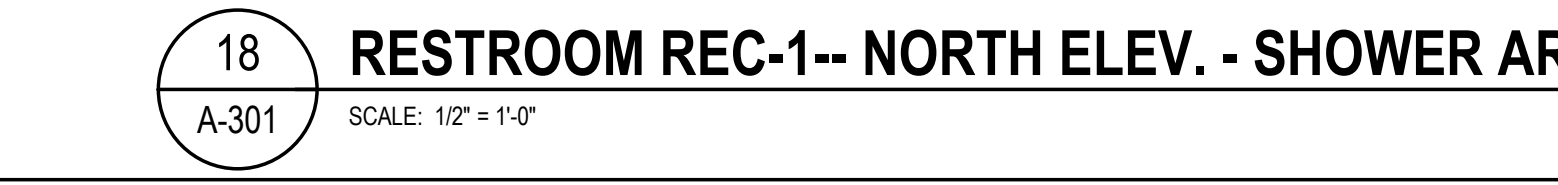
19 RESTROOM REC-1- SOUTH ELEV. - SHOWER AREA

A-301 SCALE: 1/2" = 1'-0"



20 RESTROOM REC-1- WEST ELEV. - SHOWER AREA

A-301 SCALE: 1/2" = 1'-0"



21 RESTROOM REC-1- NORTH ELEV. - SHOWER AREA

A-301 SCALE: 1/2" = 1'-0"



22 RESTROOM REC-1- SOUTH ELEV. - SHOWER AREA

A-301 SCALE: 1/2" = 1'-0"



23 RESTROOM REC-1- WEST ELEV. - SHOWER AREA

A-301 SCALE: 1/2" = 1'-0"

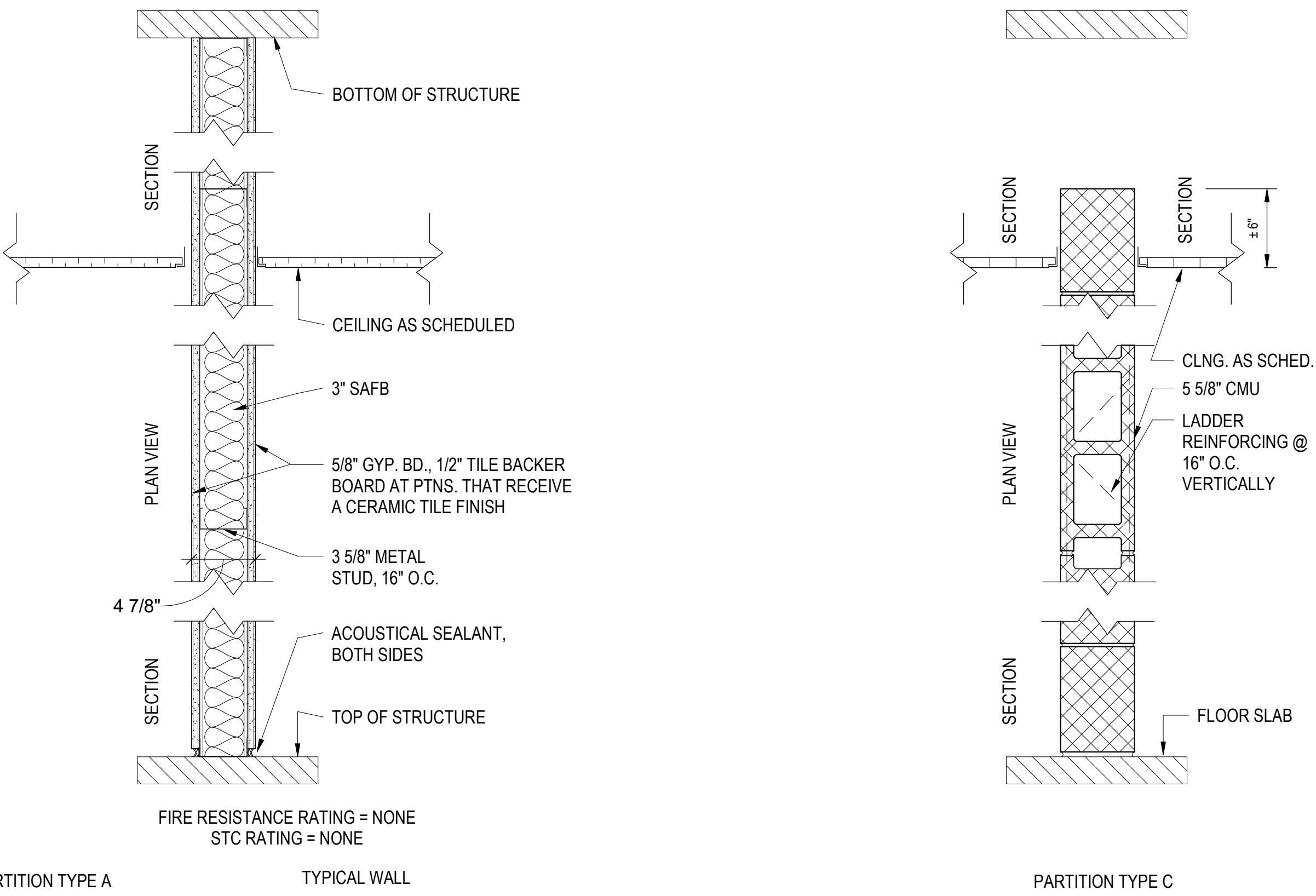
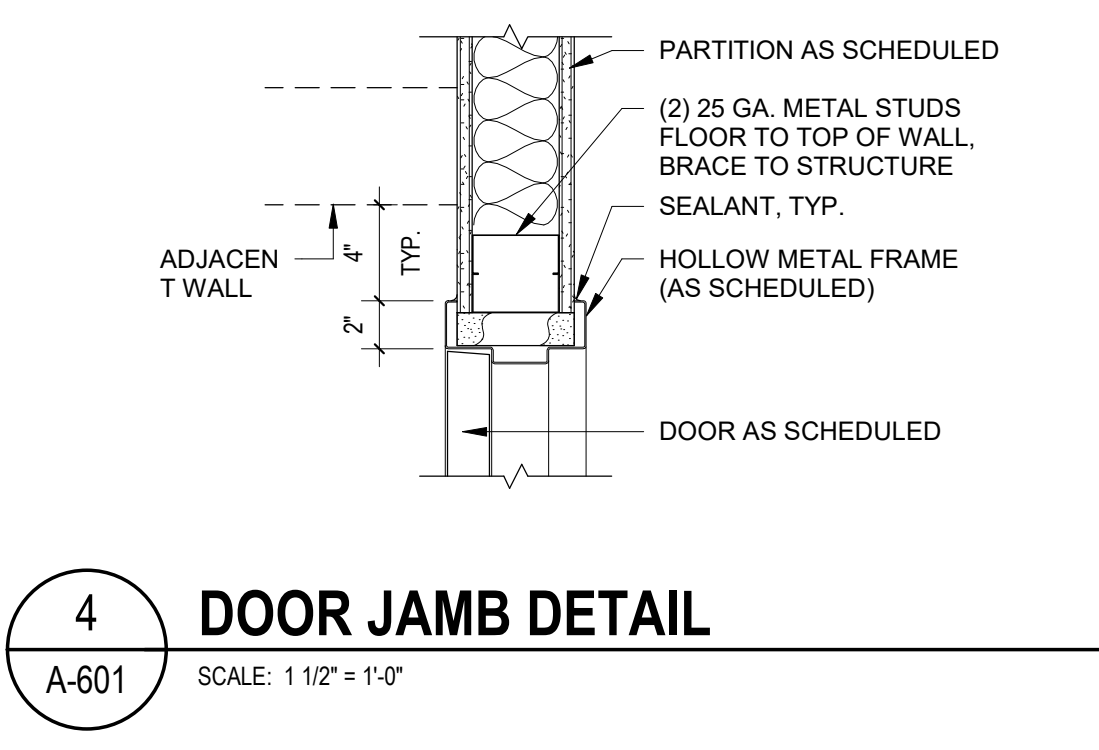
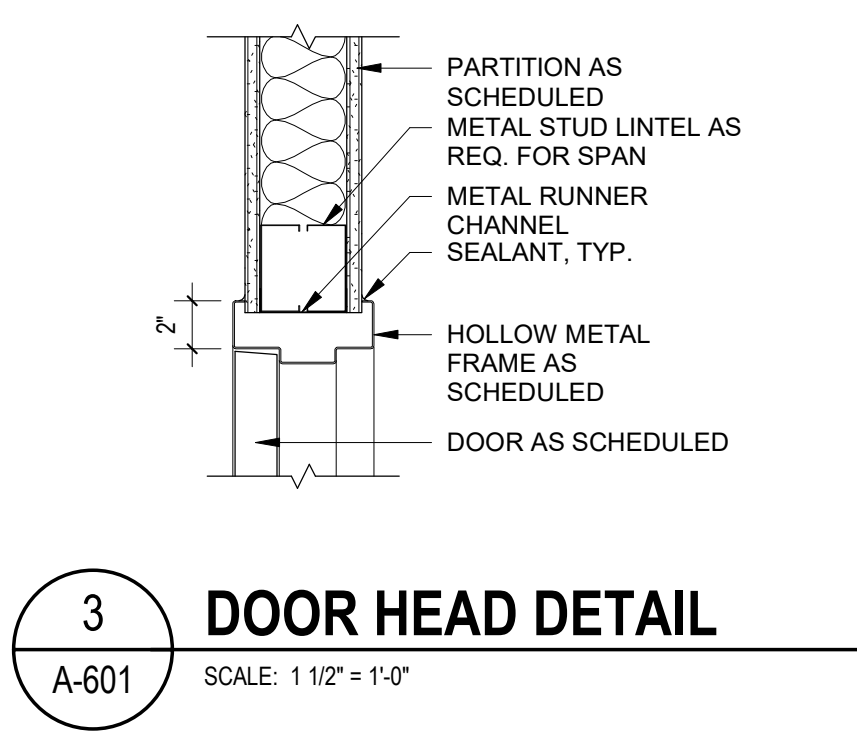
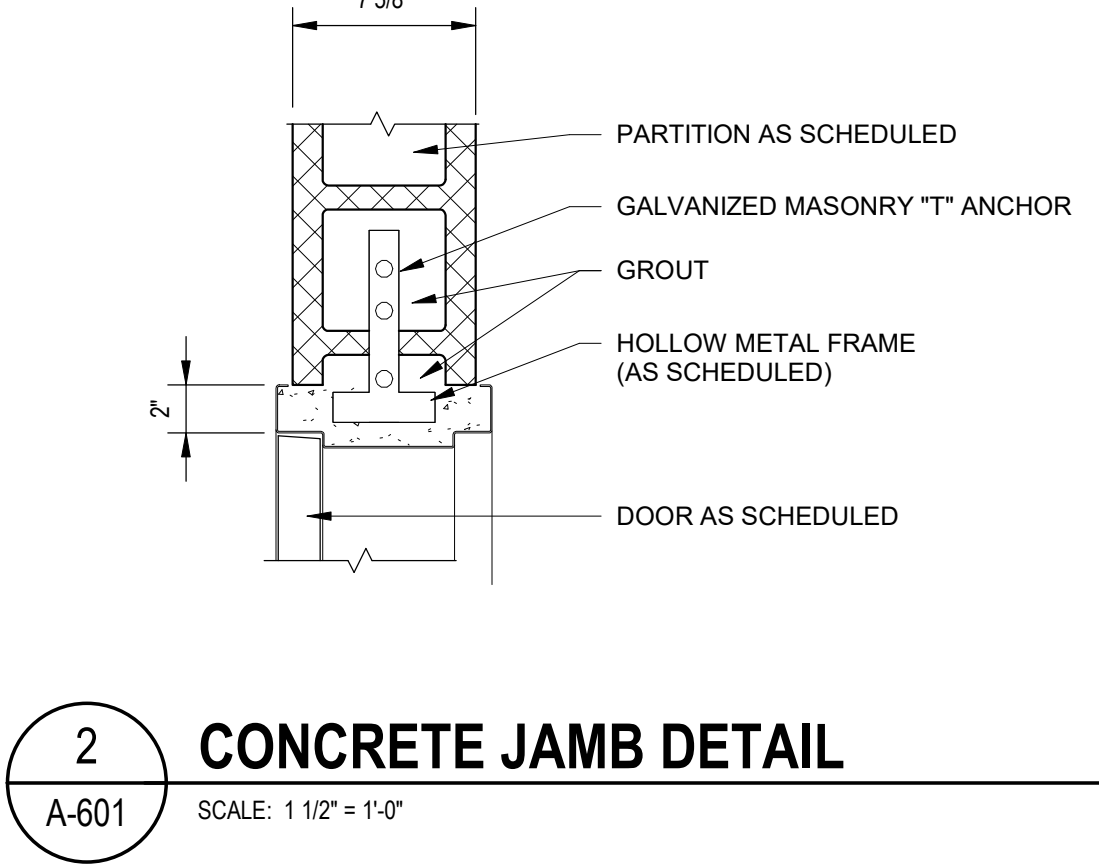
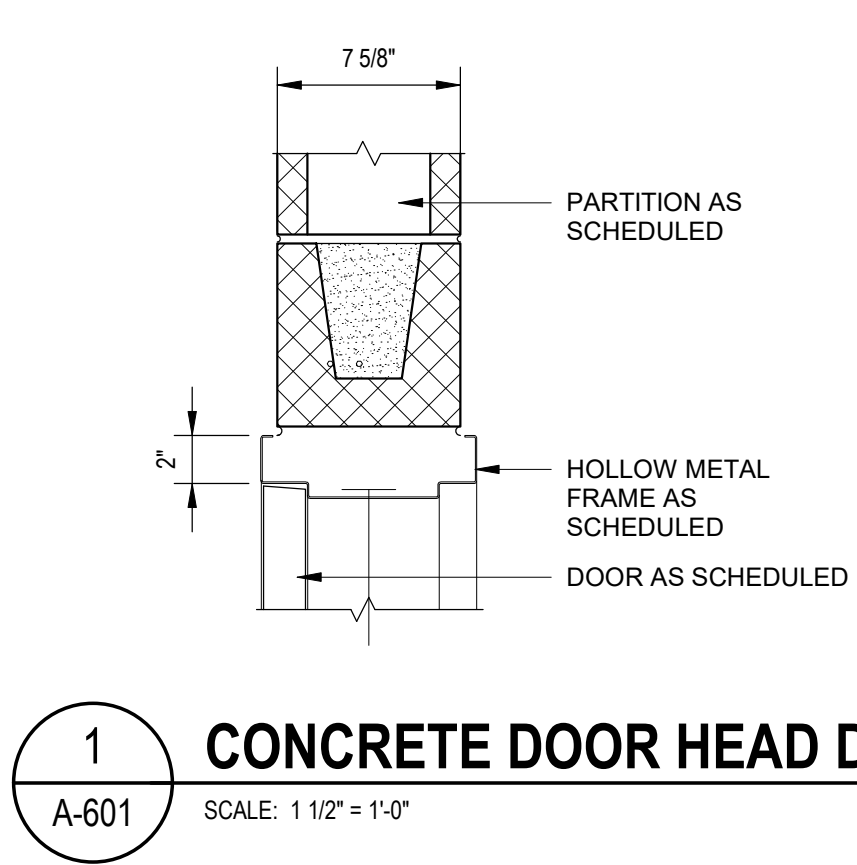
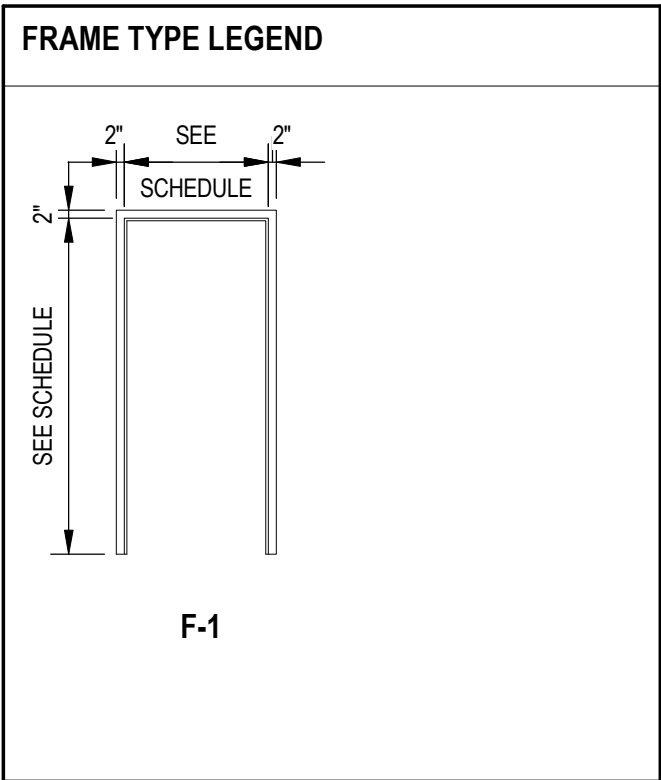
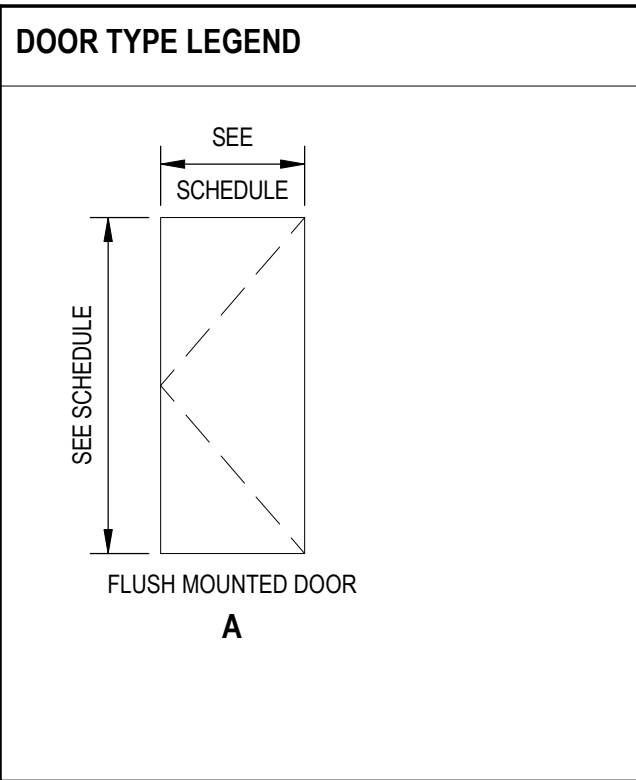


24 RESTROOM REC-1- NORTH ELEV. - SHOWER AREA

A-301 SCALE: 1/2" = 1'-0"

DOOR SCHEDULE																		
DOOR NUMBER	OPENING SIZE			THICKNESS	DOOR		DOOR MATERIAL	DOOR FINISH	FRAME			FIRE RATING	GLASS	DETAILS			HARDWARE GROUP	COMMENTS
	HEIGHT	WIDTH			DOOR TYPE				FRAME TYPE	FRAME MATERIAL	FRAME FINISH			HEAD	JAMB	THRESHOLD		
1	7'-0"	3'-0"	1 3/4"	A	WD		PNT	F-1	HM	PNT			1/A601	2/A601		1	NEW DOOR IN ANNEX BUILDING	
2	7'-0"	3'-0"	1 3/4"	A	WD		STN	F-1	HM	PNT			3/A601	4/A601		1	NEW DOOR IN RECREATION CENTER	

ROOM SCHEDULE																	
ROOM NUMBER	ROOM NAME	FLOOR		BASE	WALLS								CEILING		COMMENTS		
		MATERIAL	FINISH		NORTH		SOUTH		EAST		WEST		MATERIAL	FINISH			
ANX-1	RESTROOM	SEE NOTES		SEE ELEVATIONS	GYP (SEE NOTES)	PNT (SEE NOTES)	ETR	PNT	ETR	PNT	ETR (SEE NOTES)	ACP	ACP	UNDER ALTERNATE 1 THE FLOOR, NORTH AND WEST WALLS RECEIVE A CT FINISH			
ANX-2	UTILITY ROOM	ETR		ETR/RB	ETR	PNT	GYP	PNT	ETR	PNT	ETR	PNT	ACP	ACP			
ANX-3	RESTROOM	SEE NOTES		SEE ELEVATIONS	ETR	PNT	GYP (SEE NOTES)	PNT	ETR	PNT	CMU	PNT	ACP	ACP	UNDER ALTERNATE 1 THE FLOOR, SOUTH AND EAST WALLS RECEIVE A CT FINISH		
ANX-4	RESTROOM	SEE NOTES		SEE ELEVATIONS	GYP (SEE NOTES)	PNT (SEE NOTES)	ETR	PNT	ETR (SEE NOTES)	PNT (SEE NOTES)	ETR	PNT	ACP	ACP	UNDER ALTERNATE 1 THE FLOOR, NORTH AND EAST WALLS RECEIVE A CT FINISH		
REC-1	RESTROOM	CT-1 AND CT-1A	MFR	CT-2	CT-2	MFR	CT-2	MFR	CT-2	MFR	CT-2	MFR	ACP	ACP			



NON-RATED PARTITION

	FIRE	UL	STC	SAB	NOTES
C2.2	N/A	N/A	N/A	N/A	
C2.3	N/A	N/A	N/A	N/A	
C2.4	N/A	N/A	N/A	N/A	
C2.5	N/A	N/A	N/A	N/A	



PROJECT:
TWINBROOK COMMUNITY
CENTER RESTROOM
RENOVATIONS PARKWAY

PROJECT ADDRESS:
12920 TWINBROOK PARKWAY
ROCKVILLE, MARYLAND 20851

ARCHITECT:
DELTA
8401 Connecticut Ave. Suite 350
Chevy Chase, Maryland
Phone: 301-718-0080
Fax: 301-718-9520
www.delta-eas.com



REGISTRATION:

I certify that these documents were prepared or approved by me, and that I am a duly licensed professional under the laws of the State of Maryland. license number 13892 , expiration date 2026-06-24

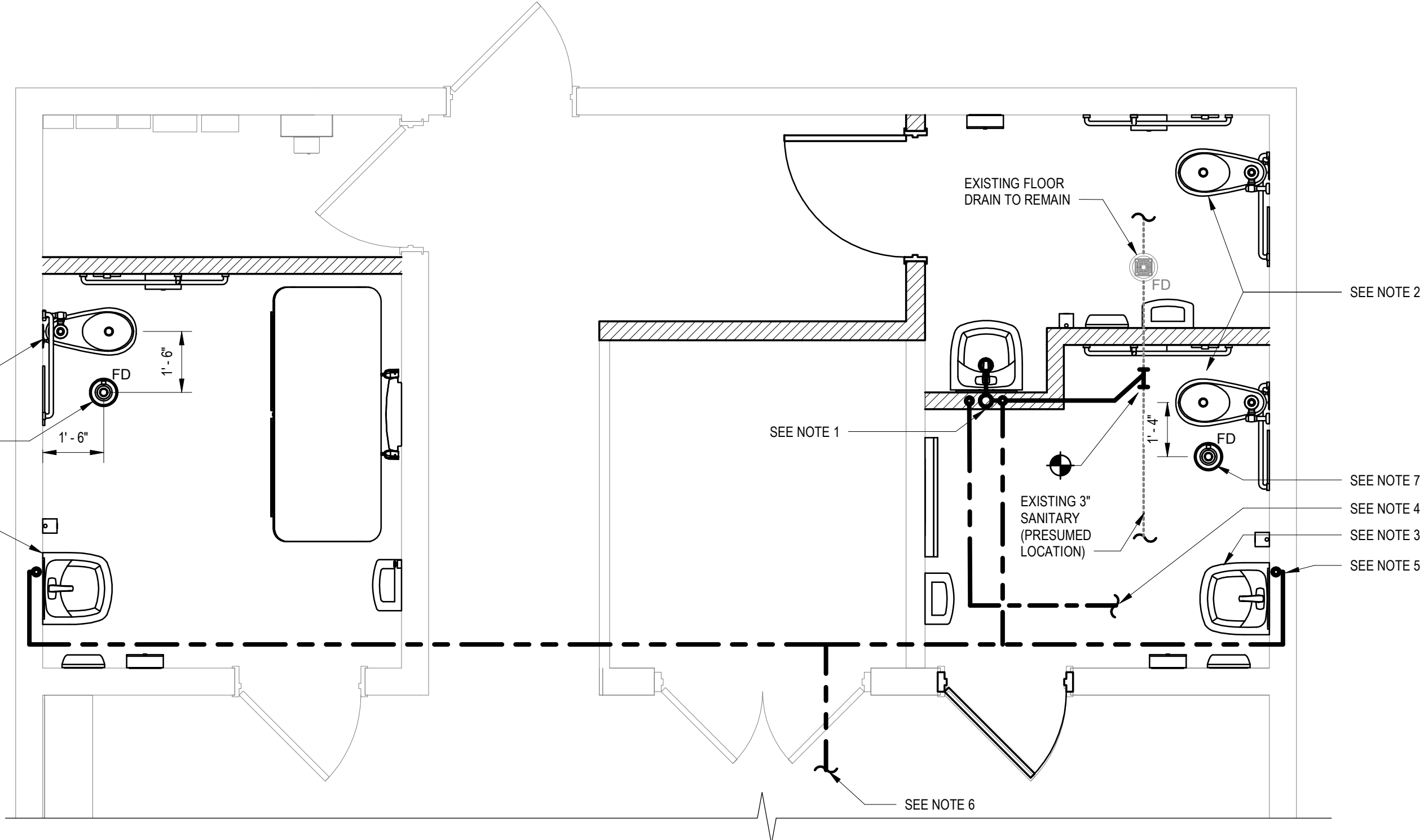
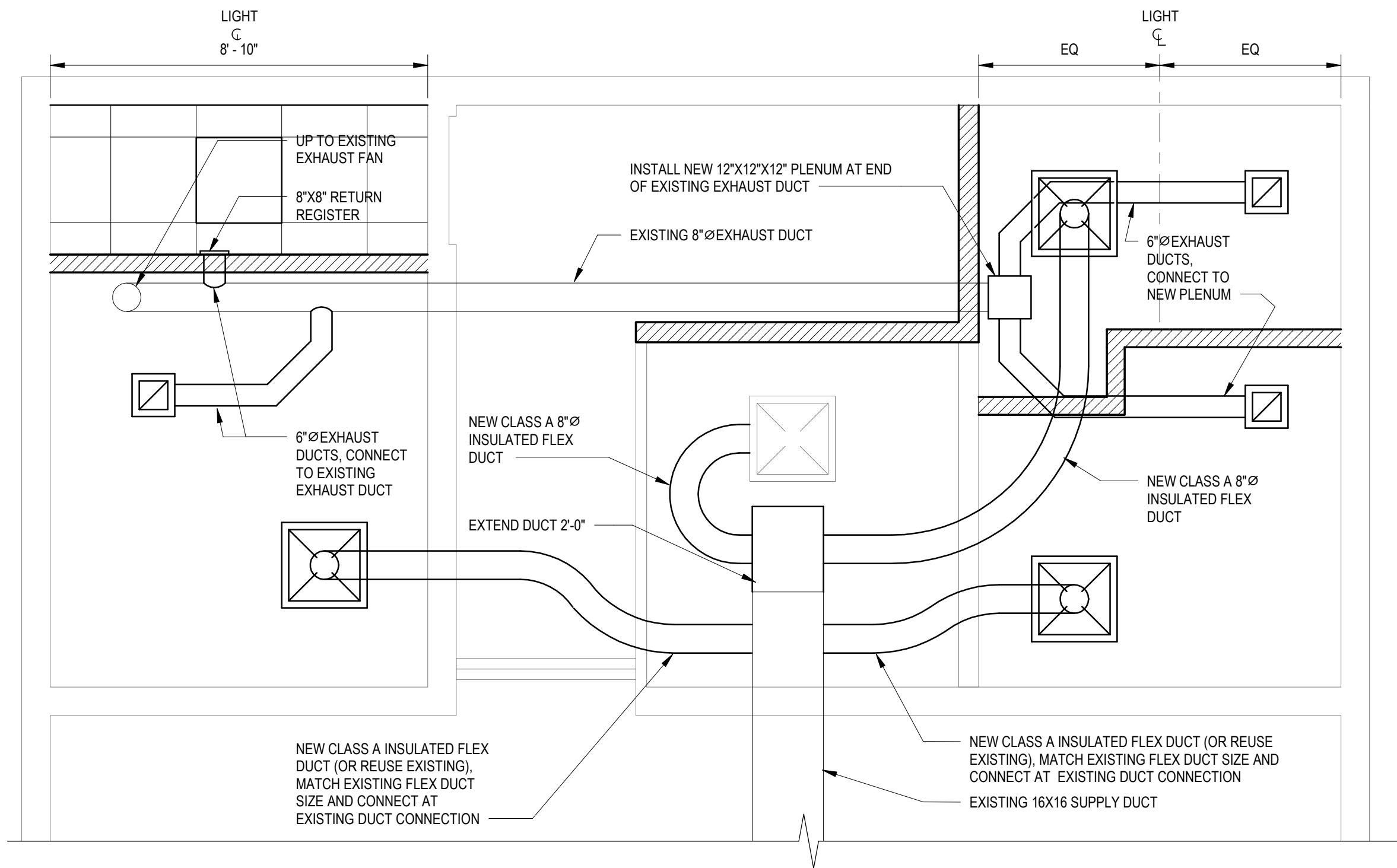
Revision		
Number	Description	Date

PROJECT NO: 2019.331.012
DRAWN BY: LA
CHECKED BY: DDA

RESUBMISSION: 100% 07-22-2024

SHEET TITLE:
SCHEDULES & DIAGRAMS

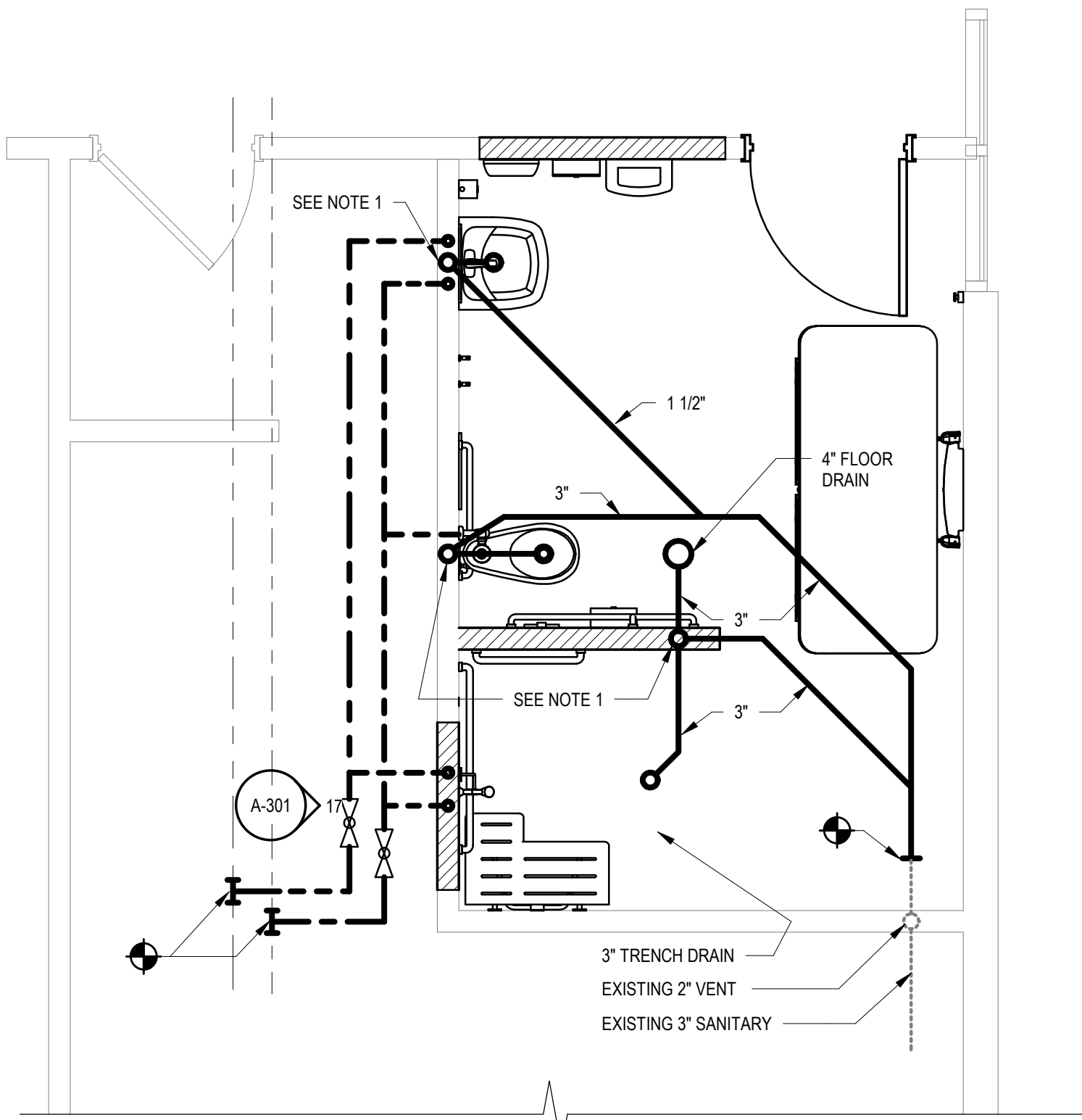
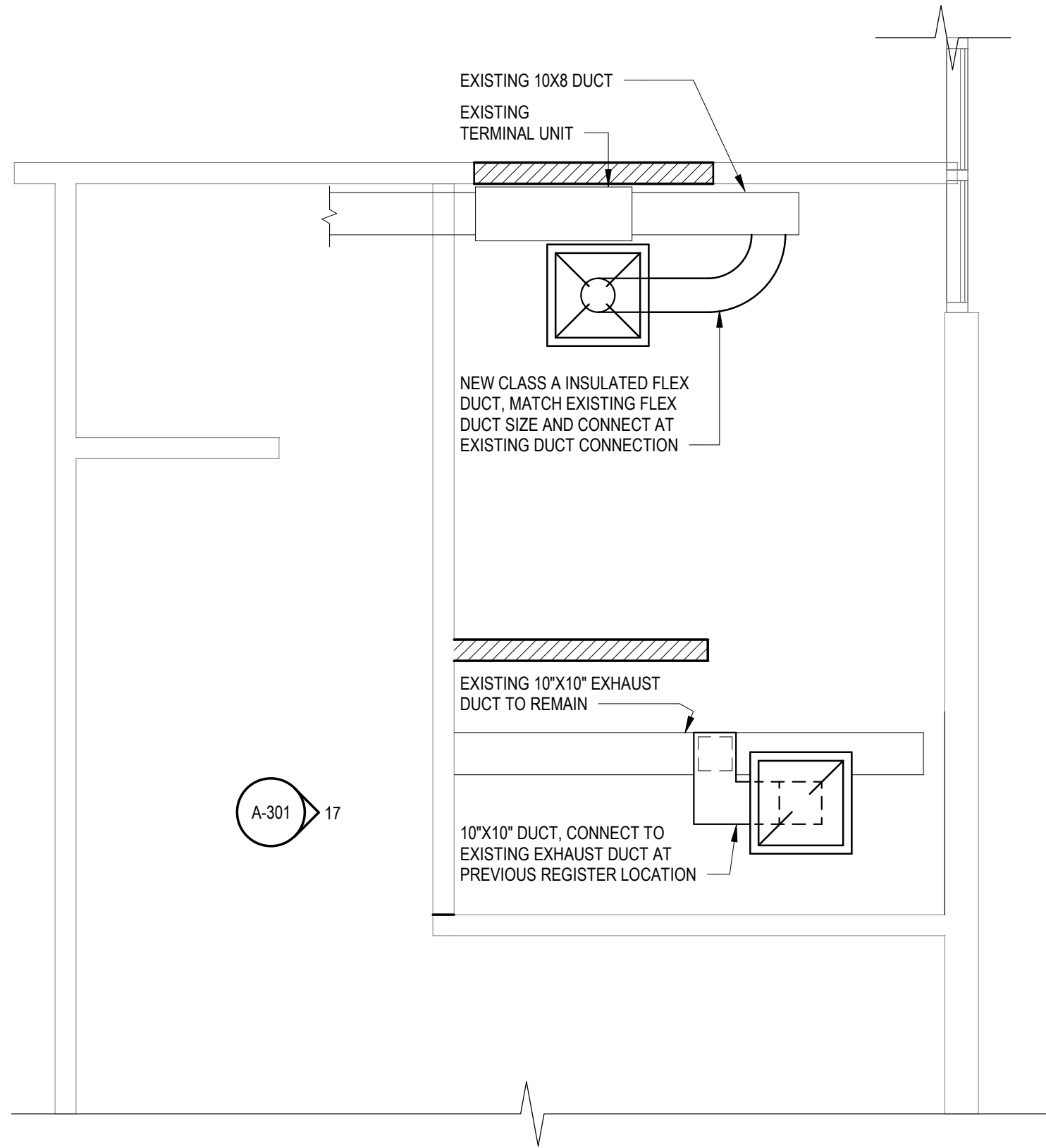
A-601



- KEY:**
- POINT OF CONNECTION (VERIFY ACTUAL LOCATION BASED ON FIELD CONDITIONS)
 - SHUT OFF VALVE
 - EXISTING COLD WATER LINE
 - NEW COLD WATER LINE
 - EXISTING HOT WATER LINE TO REMAIN
 - NEW HOT WATER LINE
 - NEW SANITARY LINE, SIZE AS INDICATED
- NOTES:**
- NOTE 1: 2" VENT UP, CONNECT TO EXISTING VENT SYSTEM ABOVE CEILING.
 - NOTE 2: NEW WATER CLOSET LOCATED PROXIMATE TO PREVIOUS WATER CLOSET LOCATION. PROVIDE NEW COLD WATER SUPPLY PIPING TO CONNECT TO EXISTING AS REQUIRED, AND NEW BELOW SLAB SANITARY CONNECTION CONNECTED TO EXISTING AS REQUIRED TO ACCOMMODATE NEW WATER CLOSET LOCATION.
 - NOTE 3: NEW LAVATORY LOCATED PROXIMATE TO PREVIOUS LAVATORY LOCATION. PROVIDE NEW COLD WATER SUPPLY PIPING TO CONNECT TO EXISTING AS REQUIRED, AND NEW SANITARY CONNECTION CONNECTED TO EXISTING AS REQUIRED TO ACCOMMODATE NEW LAVATORY LOCATION.
 - NOTE 4: PROVIDE NEW 1/2" COLD WATER PIPING, CONNECT TO ABOVE CEILING SUPPLY PIPING FOR EXISTING LAVATORY.
 - NOTE 5: PROVIDE NEW 1/2" HOT WATER PIPING FROM NEW ABOVE CEILING 3/4" HOT WATER PIPING (REFER TO NOTE 6). REMOVE EXISTING WALL TILE AND SAW CUT CMU WALL IF AS REQUIRED FOR PIPE INSTALLATION. INSULATE PIPE AND PATCH/REPAIR WALL AS REQUIRED TO MATCH EXISTING.
 - NOTE 6: PROVIDE NEW 3/4" HOT WATER SUPPLY PIPING ABOVE CEILING TO EXISTING HOT WATER HEATER IN BUILDING'S UTILITY ROOM (APPROXIMATELY 50 FEET FROM RESTROOMS). PROVIDE SHUT OFF VALVE FOR NEW NEW HOT WATER SUPPLY PIPING IN UTILITY ROOM.
 - NOTE 7: PROVIDE NEW 4" FLOOR DRAIN IN LOCATION INDICATED. PROVIDE EXTRA DEEP TRAP AND CONNECT TO EXISTING BELOW GRADE SANITARY PIPING AT ADJACENT WATER CLOSET.

1 ANNEX FIRST FLOOR-MECHANICAL PLAN
M-101 SCALE: 3/8" = 1'-0"

2 ANNEX FIRST FLOOR PLAN - PLUMBING PLAN
M-101 SCALE: 3/8" = 1'-0"



3 Y-MAIN BLDG. FIRST FLOOR-MECHANICAL PLAN
M-101 SCALE: 3/8" = 1'-0"

4 Y-MAIN BLDG. FIRST FLOOR PLAN - PLUMBING PLAN
M-101 SCALE: 3/8" = 1'-0"



PROJECT:
TWINBROOK COMMUNITY
CENTER RESTROOM
RENOVATIONS PARKWAY

PROJECT ADDRESS:
12920 TWINBROOK PARKWAY
ROCKVILLE, MARYLAND 20851

ARCHITECT:

DELTA

8401 Connecticut Ave. Suite 350
Chevy Chase, Maryland
Phone: 301-718-0080
Fax: 301-718-9520
www.delta-eas.com



REGISTRATION:

I certify that these documents were prepared or approved by me, and that I am a duly licensed professional under the laws of the State of Maryland. License number 13892, expiration date 07/13/2024.

Revision

Number	Description	Date

PROJECT NO: 2019.331.012
DRAWN BY: Author
CHECKED BY: Checker

RESUBMISSION: 100% 07-22-2024

SHEET TITLE:
MECHANICAL AND PLUMBING
PLANS

M-101

Construction/Installation subject to inspection by Fire Marshal. Schedule all fire inspections online through My Government On-line Customer Service Portal.

