

ANOKA HENNEPIN SCHOOLS

Wilson Elementary School

Restroom Renovations

RFQ #25042Q

Anoka-Hennepin School District 11

District Purchasing Office

2727 North Ferry Street

Anoka, MN 55303

Telephone 763-506-1300

Fax 763-506-1333

PROJECT MANUAL

Mike Kraft Architects, P.A.

QUOTES DUE TO

PURCHQUOTES@AHSCHOOLS.COM

MARCH 26, 2025 4:00 PM

All inquiries concerning this RFQ, including all questions/substitution requests must be submitted via email to PurchQuotes@AHSchools.us by **4:00 PM on March 18, 2025**. The district will not be responsible for, nor honor any claims resulting from, or alleged to be the result of misunderstanding by the Vendor. To ensure a transparent bidding process, no phone or in person inquiries will be accepted. It is the Vendor's responsibility to bring all discrepancies, ambiguities, omissions, or matters that need clarification to the District's attention. Responses to all questions received will be captured in an addendum, and available to all Vendors no later than **March 19, 2025 at 4:00 PM** local time.

Quotes may not be withdrawn for sixty (60) days after the scheduled closing time for the receipt of quotes without the consent of the Anoka Hennepin School District. The School Board reserves the right to accept any quote, to reject any or all quotes, to waive irregularities and informalities in the procedures, and to act in its best interest.

SUMMARY OF WORK

PART 1 GENERAL

1.1 PROJECT

- A. Project Name: **Anoka Hennepin Schools – Wilson Elementary School Restroom Renovations**
- B. Owner's Name: Independent School District #11, Anoka, MN.
- C. Architect's Name: Mike Kraft Architects, P.A.
- D. The Project: **The Project consists of renovations to the existing stage and nearby spaces at Wilson Elementary School, 1025 Sunny Lane, Anoka, MN,**

1.2 CONTRACT DESCRIPTION

- A. Contract Type: A single prime contract based on a Stipulated Price.
- B. Bonds: Payment and Performance Bonds are **not** required for this project.
- C. The Contract will be awarded to the lowest responsive and responsible base quote, if any.

1.3 OWNER OCCUPANCY

- A. Owner intends to continue to occupy other areas of the building during the entire construction period. Cooperate with Owner to minimize conflict and to Schedule the Work to accommodate Owner occupancy.

1.4 CONTRACTOR USE OF SITE AND PREMISES

- A. Construction Operations: Limited to areas noted on Drawings.
- B. Arrange use of site and premises to allow:
 - 1. Owner occupancy.
- C. Provide access to and from site as required by law and by Owner:
 - 1. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary protection, enclosures, pathways, egress doors/gates, exit signs, etc. if exit routes are temporarily altered. This may include clear exit paths and exit devices through the fenced construction area.
 - 2. Do not obstruct roadways, sidewalks, or other public ways without permit.
- D. Time Restrictions:
 - 1. Limit conduct of noisy exterior work to the hours of what is allowable by local City Ordinance, and outside of school hours when school is in session.
 - 2. See also individual Specification sections for additional time restrictions.
 - 3. Work that will involve noises louder than a typical screw gun shall be limited to hours when school is not in session. Hours for work louder than a typical screw gun on days school is in session are before 7:30 AM and after 2:30 PM.
- E. Utility Outages and Shutdown:
 - 1. Limit disruption of utility services to hours the building is unoccupied.
 - 2. Do not disrupt or shut down life safety systems, including but not limited to fire sprinklers and fire alarm system, without 7 days' notice to Owner and authorities having jurisdiction.
 - 3. Prevent accidental disruption of utility services to other facilities.

1.5 CONTRACT TIME

- A. The Owner expects to provide a notice to proceed by **April 16, 2025**. Work on site may begin upon execution, completion and acceptance of all of the following:
 - 1. Construction Agreement
 - 2. Certificates of Insurance
 - 3. Payment and Performance Bonds
 - 4. Building Permits by each Authority Having Jurisdiction related to the Work being commenced.
 - 5. Project Schedule

6. Schedules of Values
 7. Subcontractor and Supplier List
-
- B. The school will be available for field verifications outside of the project area each weekday before 8:30 AM and after 4:00 PM. All visits must be coordinated at least 72 hours in advance with the school district.
 - C. It is expected that school will not be in session the following weekdays:
 1. March 7 – 14, 2025
 2. April 18, 2025
 3. May 26, 2025
 - D. The last day of classes for the **2024/25 school year is June 6, 2025**. The building will be occupied through **June 9, 2025**. Prior to that date no work is to take place within occupied portions of the building, except as coordinated with the Owner. Any work in the building is to be arranged in advance with the Owner and cannot result in loss of service to any part of the existing building.
 - E. Substantial Completion for work in the spaces shall be no later than **August 11, 2025**. The building and spaces shall be ready for punch list review at those times, including receipt of all final permit inspections and receipt of Certificates of Occupancy where they are required by the authority having jurisdiction.
 - F. Final date of work on site shall be **August 28, 2025**.
 - G. Final Completion, including resolution of all potential change orders and submittal of Close-out documents shall be **November 28, 2025**.

END OF SECTION

PROJECT

Anoka Hennepin Schools – Wilson Elementary School Restroom Renovations

OWNER

ANOKA-HENNEPIN INDEPENDENT SCHOOL DISTRICT 11

2727 NORTH FERRY STREET

ANOKA, MN 55303

TELEPHONE (763) 506-1200

ARCHITECT

MIKE KRAFT ARCHITECTS, P.A.

1442 98TH LANE NW

COON RAPIDS, MN 55433

TELEPHONE (612) 309-6002

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA.



MICHAEL F. KRAFT, ARCHITECT
MIKE KRAFT ARCHITECTS, P.A.

23538 MN REGISTRATION NUMBER

END OF CERTIFICATIONS SHEET

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QUOTE FORM

1.1 TO:

- A. Mike Kraft Architects, on behalf of
Anoka-Hennepin School District
Buildings and Grounds
2727 North Ferry Street
Anoka Minnesota 55303

1.2 PROJECT:

- A. Anoka Hennepin Schools - Wilson Elementary School Restroom Renovations

1.3 DATE: _____

1.4 SUBMITTED BY: (Quote Provider to enter name and address)

- A. Full Company Name _____
1. Address _____
2. City, State, Zip _____

1.5 BASE QUOTE

- A. Having examined the Place of The Work and all matters referred to in the Instructions to Quote Providers and the Contract Documents for the above mentioned project, we, the undersigned, hereby offer to enter into a Contract to perform the Work for the Price listed in this Quote form of:

- B. Crooked Lake Elementary School

_____ dollars
(\$ _____), in lawful money of the United States of America.

1.6 NOT USED

1.7 ACCEPTANCE

- A. This offer shall be open to acceptance and is irrevocable for thirty days from the quote closing date.

1.8 ADDENDA

- A. The following Addenda have been received. The modifications to the Documents noted below have been considered and all costs are included in the Quote.

1. Addendum # _____ Dated _____.
2. Addendum # _____ Dated _____.
3. Addendum # _____ Dated _____.

1.9 SUBCONTRACTORS. LIST ALL FIRST-TIER SUBCONTRACTORS (NAMES AND TRADES/WORK TO BE PERFORMED). IF MORE SPACE IS NEEDED AN ADDITIONAL SHEET IS ACCEPTABLE.

A. _____

B. _____

C. _____

D. _____

E. _____

1.10 QUOTE FORM SIGNATURE

A. _____

B. (print the full name of your firm)

C. _____

D. (Authorized signature of signing officer)

E. _____

F. (Name and title of signing officer)

1.11 ACCEPTANCE BY ANOKA-HENNEPIN SCHOOL DISTRICT: (to be filled out by Owner)

A. Signature _____

B. Name _____

C. Date _____

END OF QUOTE FORM

PRIME CONTRACTOR RESPONSE

All Prime Bidders submitting a bid for a construction project shall submit along with their bid a signed statement under oath by an owner or officer verifying compliance with each of the minimum criteria in subdivision 3 of Minnesota Statute §16C.285, at the time that they submit their bid. This sworn statement is to be included as part of the Bid Form.

All subcontractors that the contractor intends to use to perform project work must have verified to the contractor through a signed statement under oath by an owner or officer that they meet the minimum criteria listed in clauses (1) to (6) of Subd. 3 of §16C.285. A Bidder or subcontractor who does not meet the minimum criteria established in Minnesota Statutes §16C.285, subdivision 3, or who fails to verify compliance with the minimum requirements will not be a “responsible contractor” and will be ineligible to be awarded the Contract for this Project or to work on this Project.

Bidders and subcontractors are also advised that making a false statement verifying compliance with any of the minimum criteria will render the Bidder or subcontractor ineligible to be awarded a construction contract for this Project and may result in the termination of a contract awarded to a Bidder or subcontractor that makes a false statement.

A prime contractor shall submit to the Owner upon request, copies of the signed verifications of compliance from all sub bidders of any tier pursuant to subdivision 3, clause (7) of §16C.285.

Definition of Responsible Bidder: Responsible Bidder shall be defined as those entities which meet the minimum criteria set forth in Subparagraph 3 of Minnesota Statute §16C.285, which can be found at <https://www.revisor.mn.gov/laws/?id=253&doctype=Chapter&year=2014&type=0>

RESPONSIBLE CONTRACTOR VERIFICATION AND CERTIFICATION OF COMPLIANCE

PROJECT NAME: _____

This form must be submitted with the response to this Request for Bids. A response received without this form will be rejected.

Minn. Stat. § 16C.285, Subd. 7. IMPLEMENTATION. ... any prime contractor or subcontractor or motor carrier that does not meet the minimum criteria in subdivision 3 or fails to verify that it meets those criteria is not a responsible contractor and is not eligible to be awarded a construction contract for the project or to perform work on the project...

Minn. Stat. § 16C.285, Subd. 3. RESPONSIBLE CONTRACTOR, MINIMUM CRITERIA. "Responsible contractor" means a contractor that conforms to the responsibility requirements in the solicitation document for its portion of the work on the project and verifies that it meets the following minimum criteria:

(1)	<p>The Contractor:</p> <ul style="list-style-type: none"> (i) is in compliance with workers' compensation and unemployment insurance requirements. (ii) is in compliance with Department of Revenue and Department of Employment and Economic Development registration requirements if it has employees. (iii) has a valid federal tax identification number or a valid Social Security number if an individual; and (iv) has filed a certificate of authority to transact business in Minnesota with the Secretary of State if a foreign corporation or cooperative.
(2)	<p>The contractor or related entity is in compliance with and, during the three-year period before submitting the verification, has not violated section 177.24, 177.25, 177.41 to 177.44, 181.13, 181.14, or 181.722, and has not violated United States Code, title 29, sections 201 to 219, or United States Code, title 40, sections 3141 to 3148. For purposes of this clause, a violation occurs when a contractor or related entity:</p> <ul style="list-style-type: none"> (i) repeatedly fails to pay statutorily required wages or penalties on one or more separate projects for a total underpayment of \$25,000 or more within the three-year period, provided that a failure to pay is "repeated" only if it involves two or more separate and distinct occurrences of underpayment during the three-year period. (ii) has been issued an order to comply by the commissioner of Labor and Industry that has become final. (iii) has been issued at least two determination letters within the three-year period by the Department of Transportation finding an underpayment by the contractor or related entity to its own employees. (iv) has been found by the commissioner of Labor and Industry to have repeatedly or willfully violated any of the sections referenced in this clause pursuant to section 177.27. (v) has been issued a ruling or findings of underpayment by the administrator of the Wage and Hour Division of the United States Department of Labor that have become final or have been upheld by an administrative law judge or the Administrative Review Board; or (vi) has been found liable for underpayment of wages or penalties or misrepresenting a construction worker as an independent contractor in an action brought in a court having jurisdiction. Provided that, if the contractor or related entity contests a determination of underpayment by the Department of Transportation in a contested case proceeding, a violation does not occur until the contested case proceeding has concluded with a determination that the contractor or related entity underpaid wages or penalties; *

(3)	The contractor or related entity is in compliance with and, during the three-year period before submitting the verification, has not violated section 181.723 or chapter 326B. For purposes of this clause, a violation occurs when a contractor or related entity has been issued a final administrative or licensing order; *
(4)	The contractor or related entity has not, more than twice during the three-year period before submitting the verification, had a certificate of compliance under section 363A.36 revoked or suspended based on the provisions of section 363A.36, with the revocation or suspension becoming final because it was upheld by the Office of Administrative Hearings or was not appealed to the office; *
(5)	The contractor or related entity has not received a final determination assessing a monetary sanction from the Department of Administration or Transportation for failure to meet targeted group business, disadvantaged business enterprise, or veteran-owned business goals, due to a lack of good faith effort, more than once during the three-year period before submitting the verification; *
	* Any violations, suspensions, revocations, or sanctions, as defined in clauses (2) to (5), occurring prior to July 1, 2014, shall not be considered in determining whether a contractor or related entity meets the minimum criteria.
(6)	The contractor or related entity is not currently suspended or debarred by the federal government or the state of Minnesota or any of its departments, commissions, agencies, or political subdivisions that have authority to debar a contractor; and
(7)	All subcontractors and motor carriers that the contractor intends to use to perform project work have verified to the contractor through a signed statement under oath by an owner or officer that they meet the minimum criteria listed in clauses (1) to (6).

Minn. Stat. § 16C.285, Subd. 5. SUBCONTRACTOR VERIFICATION.

A prime contractor or subcontractor shall include in its verification of compliance under subdivision 4 a list of all of its first-tier subcontractors that it intends to retain for work on the project. Prior to execution of a construction contract, and as a condition precedent to the execution of a construction contract, the apparent successful prime contractor shall submit to the contracting authority a supplemental verification under oath confirming compliance with subdivision 3, clause (7). Each contractor or subcontractor shall obtain from all subcontractors with which it will have a direct contractual relationship a signed statement under oath by an owner or officer verifying that they meet all of the minimum criteria in subdivision 3 prior to execution of a construction contract with each subcontractor.

If a prime contractor or any subcontractor retains additional subcontractors on the project after submitting its verification of compliance, the prime contractor or subcontractor shall obtain verifications of compliance from each additional subcontractor with which it has a direct contractual relationship and shall submit a supplemental verification confirming compliance with subdivision 3, clause (7), within 14 days of retaining the additional subcontractors.

A prime contractor shall submit to the contracting authority upon request copies of the signed verifications of compliance from all subcontractors of any tier pursuant to subdivision 3, clause (7). A prime contractor and subcontractors shall not be responsible for the false statements of any subcontractor with which they do not have a direct contractual relationship. A prime contractor and subcontractors shall be responsible for false statements by their first-tier subcontractors with which they have a direct contractual relationship only if they accept the verification of compliance with actual knowledge that it contains a false statement.

Subd. 5a. Motor carrier verification. A prime contractor or subcontractor shall obtain annually from all motor carriers with which it will have a direct contractual relationship a signed statement under oath by an owner or officer verifying that they meet all of the minimum criteria in subdivision 3 prior to execution of a construction contract with each motor carrier. A prime contractor or subcontractor shall require each such motor carrier to provide it with immediate written notification in the event that the motor carrier no longer meets one or more of the minimum criteria in subdivision 3 after submitting its annual verification. A motor carrier shall be ineligible to perform work on a project covered by this section if it does not meet all the minimum criteria in subdivision 3. Upon request, a prime contractor or subcontractor shall submit to the contracting authority the signed verifications of compliance from all motor carriers providing for-hire transportation of materials, equipment, or supplies for a project.

Minn. Stat. § 16C.285, Subd. 4. VERIFICATION OF COMPLIANCE.

A contractor responding to a solicitation document of a contracting authority shall submit to the contracting authority a signed statement under oath by an owner or officer verifying compliance with each of the minimum criteria in subdivision 3, with the exception of clause (7), at the time that it responds to the solicitation document.

A contracting authority may accept a signed statement under oath as sufficient to demonstrate that a contractor is a responsible contractor and shall not be held liable for awarding a contract in reasonable reliance on that statement. A prime contractor, subcontractor, or motor carrier that fails to verify compliance with any one of the required minimum criteria or makes a false statement under oath in a verification of compliance shall be ineligible to be awarded a construction contract on the project for which the verification was submitted.

A false statement under oath verifying compliance with any of the minimum criteria may result in termination of a construction contract that has already been awarded to a prime contractor or subcontractor or motor carrier that submits a false statement. A contracting authority shall not be liable for declining to award a contract or terminating a contract based on a reasonable determination that the contractor failed to verify compliance with the minimum criteria or falsely stated that it meets the minimum criteria. A verification of compliance need not be notarized. An electronic verification of compliance made and submitted as part of an electronic bid shall be an acceptable verification of compliance under this section provided that it contains an electronic signature as defined in section 325L.02, paragraph (h).

CERTIFICATION

By signing this document, I certify that I am an owner or officer of the company, and I certify under oath that:

- 1) My company meets each of the Minimum Criteria to be a responsible contractor as defined herein and is in compliance with Minn. Stat. § 16C.285, and
- 2) if my company is awarded a contract, I will submit Attachment A-1 prior to contract execution, and
- 3) if my company is awarded a contract, I will also submit Attachment A-2 as required.

Authorized Signature of Owner or Officer:	Printed Name:
Title:	Date:
Company Name:	

NOTE: Minn. Stat. § 16C.285, Subd. 2, (c) If only one prime contractor responds to a solicitation document, a contracting authority may award a construction contract to the responding prime contractor even if the minimum criteria in subdivision 3 are not met.

ATTACHMENT A-1

FIRST-TIER SUBCONTRACTORS LIST

SUBMIT PRIOR TO EXECUTION OF A CONSTRUCTION CONTRACT

PROJECT NAME: _____

Minn. Stat. § 16C.285, Subd. 5. A prime contractor or subcontractor shall include in its verification of compliance under subdivision 4 a list of all of its first-tier subcontractors that it intends to retain for work on the project. Prior to execution of a construction contract, and as a condition precedent to the execution of a construction contract, the apparent successful prime contractor shall submit to the contracting authority a supplemental verification under oath confirming compliance with subdivision 3, clause (7). Each contractor or subcontractor shall obtain from all subcontractors with which it will have a direct contractual relationship a signed statement under oath by an owner or officer verifying that they meet all of the minimum criteria in subdivision 3 prior to execution of a construction contract with each subcontractor.

FIRST TIER SUBCONTRACTOR NAMES* (Legal name of company as registered with the Secretary of State)	Name of city where company home office is located

*Attach additional sheets as needed for submission of all first-tier subcontractors.

SUPPLEMENTAL CERTIFICATION FOR ATTACHMENT A-1	
By signing this document, I certify that I am an owner or officer of the company, and I certify under oath that: All first-tier subcontractors listed on attachment A-1 have verified through a signed statement under oath by an owner or officer that they meet the minimum criteria to be a responsible contractor as defined in Minn. Stat. § 16C.285.	
Authorized Signature of Owner or Officer:	Printed Name:
Title:	Date:
Company Name:	

ATTACHMENT A-2

ADDITIONAL SUBCONTRACTORS LIST

PRIME CONTRACTOR TO SUBMIT AS SUBCONTRACTORS ARE ADDED TO THE PROJECT

PROJECT NAME: _____**This form must be submitted to the Architect.**

Minn. Stat. § 16C.285, Subd. 5 If a prime contractor or any subcontractor retains additional subcontractors on the project after submitting its verification of compliance, the prime contractor or subcontractor shall obtain verifications of compliance from each additional subcontractor with which it has a direct contractual relationship and shall submit a supplemental verification confirming compliance with subdivision 3, clause (7), within 14 days of retaining the additional subcontractors.

ADDITIONAL SUBCONTRACTOR NAMES* (Legal name of company as registered with the Secretary of State)	Name of city where company home office is located

*Attach additional sheets as needed for submission of all additional subcontractors.

SUPPLEMENTAL CERTIFICATION FOR ATTACHMENT A-2	
<p>By signing this document, I certify that I am an owner or officer of the company, and I certify under oath that:</p> <p>All additional subcontractors listed on Attachment A-2 have verified through a signed statement under oath by an owner or officer that they meet the minimum criteria to be a responsible contractor as defined in Minn. Stat. § 16C.285.</p>	
Authorized Signature of Owner or Officer:	Printed Name:
Title:	Date:
Company Name:	

GENERAL CONDITIONS

1. General Conditions: AIA A201, General Conditions of the Contract for Construction as issued by the American Institute of Architects, 2017 edition is hereby made part of this contract as though fully contained in this document.
2. General Conditions Forms: General Conditions are available from the AIA Minnesota, <http://www.aia-mn.org> or the American Institute of Architects, Washington, D.C.

END OF DOCUMENT

DOCUMENT 00 7300

SUPPLEMENTARY CONDITIONS

Supplementary Conditions: The following supplements modify AIA Document A201–2017, General Conditions of the Contract for Construction. Where a portion of the General Conditions is modified or deleted by these Supplementary Conditions, the unaltered portions of the General Conditions shall remain in effect.

ARTICLE 1 GENERAL PROVISIONS

1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

Add the following Subparagraphs 1.2.4 and 1.2.5:

- 1.2.4 The Contract Documents are prepared with enough detail to portray the general intent of quality and form. It is the intention of this specification and accompanying drawings to provide a job complete in every respect. The Contractor shall be responsible for this result and shall turn over the project in complete operating condition irrespective of whether drawings and specifications cover every individual item in minute detail or clarity.
- 1.2.5 If an instance occurs where the documents seem to conflict within themselves in terms of quality, quantity or installation expectations, the more restrictive, higher quality and higher quantity as determined by the Architect shall be provided with no addition to the Contract Sum or Contract Time.

Add the following paragraph 1.7

1.7 EXECUTION OF THE AGREEMENT AND MODIFICATIONS

The Agreement and all Modifications shall be drafted by the Contractor on original American Institute of Architects forms procured by the Contractor. Contractor shall submit drafts of Agreement and Modifications forms to the Architect and Owner for review. Contractor shall make revisions to the documents and resubmit for execution after receipt of comments from Owner and Architect.

ARTICLE 2 OWNER

2.3 INFORMATION AND SERVICES REQUIRED OF OWNER

Delete Subparagraph 2.2.5 and replace with the following:

- 2.3.6 General Contractor is responsible for procuring all sets of Contract Documents required for complete execution of the work at their own expense.

ARTICLE 3 CONTRACTOR

3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

Add the following Subparagraphs 3.2.5, 3.2.6 and 3.2.7:

- 3.2.5 Should it appear that portions of the Work are not sufficiently detailed or explained in the Contract Documents, the Contractor shall apply to the Architect for Supplementary drawings or clarifications as may be necessary and shall meet the requirements of these documents as far as they are consistent with the original Contract Documents. In such areas the Contractor shall interpret the Contract Documents for such areas in a manner that is consistent with the intent of similar conditions expressed elsewhere and shall in all cases provide systems that are complete, permanent, durable and weather tight, consistent with other similar areas of the Work.
- 3.2.6 Where applicable to the Work, the Contractor shall engage a professional utilities locator to investigate and verify existing utility locations prior to earthwork operations, excavations, trenching or other activities which could result in encountering or damaging existing utilities. Not all site utilities may be identified on the Drawings or surveys provided, and as such, verification of the presence of utilities is the responsibility of the

Contractor, including verification with the Owner before proceeding with the Work.

3.2.7 Contractor shall be responsible for site verifying and marking the exact locations of existing site utilities, including depths and locations relative to other site features. The general location of existing utilities is noted on furnished surveys or in the Contract Documents are for the Contractor's reference and represent the general location of site utilities to the best of the Owner's knowledge at the time those documents were created. The Contractor shall engage the services of professional utilities locators, GPR services, sewer cameras, excavation techniques, etc. to confirm the exact locations of utilities prior to executing the Work.

3.2.8 Prior to submittal of a Request for Information, the Contractor shall thoroughly review the Documents to confirm whether the information requested is described and/or reasonably inferable from the Documents. Time spent by the design team responding to excessive Requests for Information already described and/or reasonably inferable from the Documents, as determined by the Architect will be reduced from the Contract by Change Order, using the design team members' normal billable rates.

3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

Add the following Subparagraph 3.3.4:

3.3.4 The Contractor shall provide at least until Substantial Completion, a competent, full-time superintendent with at least 10 years of experience as a superintendent on projects of similar scale and complexity, and at least three (3) projects of similar scale and scope with the General Contractor. The superintendent shall be an employee of the General Contractor, not an independent contractor. This superintendent shall be on the project site at all times when work is being conducted. The superintendent is not to coordinate other projects or operate other business while on site. The primary role of the superintendent is coordination of the project, schedule and subcontractors/suppliers. The superintendent shall not be changed except with consent of the Architect unless the superintendent proves to be unsatisfactory to the Contractor and/or ceases to be in his/her employ. The superintendent shall represent the Contractor in his/her absence, and all directions given by the superintendent shall be as binding as if given by the Contractor. Important directions shall be confirmed by written request in each case.

3.7 PERMITS, FEES, NOTICES, AND COMPLIANCE WITH LAWS

Add the following Paragraph 3.7.6:

3.7.6 Owner will submit and pay for review of plumbing documents by the Minnesota Department of Labor and Industry. The Contractor shall submit documents to the authorities responsible for permit review in the type, format and quantity required. The Contractor shall be responsible for transmitting requests for additional information and modifications to the documents to both the design team and the permitting authority. All costs for the review and the building permit as well as the time required to coordinate this process are to be part of the costs included in the Contract for Construction.

Add the following Paragraph 3.7.7:

3.7.7 Owner has no control over the duration of permit reviews by the authorities having jurisdiction over the project. Claims related to durations for securing the necessary permits shall not be part of this project.

3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

Add the following sentence to the end of Subparagraph 3.12.6:

3.12.6 Submittals shall include the Contractor's stamp confirming that the submittal has been reviewed and verified to be in compliance relative to the items described in this paragraph.

Add the following Subparagraph 3.12.11:

3.12.11 All Shop Drawings and Product Data, except color charts shall be submitted to the architect as electronic files, with information identifying the following:

- a. Project name

- b. Contractor name
- c. Subcontractor/Supplier name, address, phone number and email address
- d. Related Specification section
- e. Date of submittal

3.19 PUBLICITY AND ADVERTISING

Add the following Paragraph 3.19:

3.19 Contractor shall not use in its external advertising, marketing programs, or other promotional efforts, any data, pictures or other representation of the District except on the specific, written authorization, in advance, of the Districts Department of Public Relations.

ARTICLE 7 CHANGES IN THE WORK

7.2 CHANGE ORDERS

7.2.1 In paragraph 7.2.1 Delete the first instance of the word "Architect" and insert the word "Contractor".

Add the following Subparagraph 7.2.2:

7.2.2 No requests for additional compensation will be considered unless proposals are received within 90 days of the first communication regarding potential changes in the work. Compensation to be included in Change Orders shall include actual labor hours for the work included in the changes multiplied by the subcontractor's standard hourly rates, actual material costs for the work included in the changes and 10 percent subcontractor overhead and profit, plus a percentage fee in accordance with General Conditions as follows:

1. 10 percent overhead and profit on the net cost of Work done by the General Contractor
2. 5 percent on the cost of work done by any Subcontractor.
3. Costs as incurred for insurance and bonds.
4. Profit and Overhead costs shall not be calculated on or added to insurance and bond costs.

In the event that the Contractor and the Owner cannot agree to a cost for the additional work, the Architect will determine the final cost for the work.

Add the following Subparagraph 7.2.3:

7.2.3 Change Orders shall be documented by the Contractor on three original printed AIA G701-2017 forms, and shall include as back-up, approved proposals for each item in the Change Order.

ARTICLE 8 TIME

8.1 DEFINITIONS

Delete Subparagraph 8.1.2 and add the following:

8.1.2 The date of commencement of the Work shall be the date established in the Agreement or as identified in the notice to proceed. However, work on site shall not proceed until the items identified in Section 01 1000 Par. 1.5 are completed and accepted and shall not proceed until the effective date of insurance required by Article 11. Neither of these dates will affect the dates required for Substantial Completion of occupancy by the Owner.

8.3 DELAYS AND EXTENSIONS OF TIME

Add the following to the end of Subparagraph 8.3.3:

No payment, compensation or adjustment of any kind (other than the extensions of time provided for) shall be made to the Contractor for damages because of hindrances or delays from any cause in the progress of the Work, whether such hindrances or delays be avoidable or unavoidable, and the Contractor agrees to make no such claim for compensation, damages or mitigation of liquidated damages for any such delays, and will accept in full satisfaction for such delays, said extension of time.

8.5 SUBSTANTIAL COMPLETION DATE LIQUIDATED DAMAGES

Add the following Paragraphs 8.5, 8.5.1 and 8.5.2 under Article 8 as follows:

8.5 Date for Commencement of Liquidated Damages Assessment Associated with Substantial Completion: The Contractor shall pay to the Owner as fixed agreed amount for each calendar day beyond the time of Substantial Completion until the work is

completed or accepted as substantially complete, the sum of five hundred dollars (\$500) per day and the Contractor and his sureties shall be liable for the amount thereof.

8.5.1 For purposes of determining project is substantially completed, substantial completion shall mean that the Work has been inspected by governing authorities with required certificates issued and is in a state of readiness for the Owner to resume normal owner operations on the day immediately following the specified substantial completion date.

8.5.2 Substantial Completion Liquidated Damages will be enacted if Work is not substantially completed by the date specified for the work in Article 8.2, Paragraph 8.2.6 at the Owners discretion.

8.6 FINAL COMPLETION LIQUIDATED DAMAGES

Add the following paragraph 8.6 to Article 8:

8.6 FINAL COMPLETION LIQUIDATED DAMAGES

8.6.1 The Contractor, upon entering into a Contract with the Owner for the Work under this Project, agrees to pay the Owner as a fixed and agreed amount for each calendar day of delay beyond the specified date of Final Completion, the sum of five hundred dollars (\$500.00) per calendar day the Contractor fails to achieve Final Completion under the requirements of the Contract Documents. It is understood by all parties to the Contract that these are liquidated damages relating to the Owner not being able to close-out the Project.

8.6.2 Refer to Article 8, Subparagraph 8.2.7, Clauses 8.2.7.1 through 8.2.7.3, for date of Final Completion and related information.

ARTICLE 9 PAYMENTS AND COMPLETION

9.2 SCHEDULE OF VALUES

Add the following sentences to the end of Subparagraph 9.3.1: "The Schedule of Values shall be submitted on AIA Form G703 and the Payment Requests shall be submitted on original AIA Forms G702 and G703. They shall be itemized for each section of the specifications and shall be numerically ordered and listed to correspond with the specifications numbering system. Values indicated for each section shall be identified with Labor and Materials as separate values. Values indicated for each section shall be the value related to that scope of work and shall not include Contractor overhead, profit or other costs. Where the work under that section is to be executed by a Subcontractor or Supplier, the value identified in that section shall equal the subcontract amount for that work. Change Orders shall be listed separately. Schedule of Values shall also be submitted in Excel spreadsheet format."

9.3 APPLICATIONS FOR PAYMENT

Add the following Subparagraphs 9.3.1.3, 9.3.1.4 and 9.3.1.5:

9.3.1.3: All payment requests will require a 5% withheld amount on labor and materials as per payment request forms. This amount will represent a constant 5% on all monies requested from month to month, leaving a total of 5% withheld of final total at time of substantial completion. This amount shall remain retained until correct and complete execution of the Punch List and close-out documents.

9.3.1.4: No partial payment shall become due until the Contractor shall deliver to the Owner a receipt and release of all liens arising out of this Contract from each subcontractor and supplier, totaling the aggregate of all previous payments related to that section. (subcontractor/supplier lien waivers). In addition, submittal of Progress Photographs and review of accurate and complete Daily Log of Construction per Section 01 3000 for the work being considered shall be complete before any partial payment becomes due.

9.3.1.5: Applications shall be submitted in duplicate on original AIA forms.

9.3.2 Delete the last two sentences of Paragraph 9.3.2, and add the following sentence: "No payments will be made for down payments required to be paid by the Contractor to suppliers or other entities under agreement with the Contractor."

9.6 PROGRESS PAYMENTS

Add the following Subparagraph 9.6.1.1:

9.6.1.1: Payment shall be made within 35 days of submittal of correct Certificate for Payment as determined by the Architect. No interest will be paid for payments beyond 35 days.

9.6.2 Add the following sentence to the end of Paragraph 9.6.2: The Contractor shall pay all Subcontractors within ten days of the Contractor's receipt of payment (or as defined in the A201 General Conditions of the Contract, whichever is more restrictive) from the Owner for services provided by the subcontractor for which the Owner has paid the Contractor. The Contractor is to pay interest of 1-1/2 percent per month or any part of a month to the Subcontractor on any amount not paid on time to the Subcontractor. The minimum monthly interest penalty payment for an unpaid balance of \$100 or more is \$10. For an unpaid balance of less than \$100, the Contractor shall pay the actual penalty due to the Subcontractor. A Subcontractor who prevails in a civil action to collect interest penalties from a Contractor must be awarded its costs and disbursements, including attorney's fees, [incurred in bringing the action](#).

9.8 SUBSTANTIAL COMPLETION

9.8.1 Add the following to the end of Paragraph 9.8.1: For portions of the Work to be considered Substantially Complete, the following items are to be complete for portions of the Work under consideration:

1. Final permit inspections
2. Certificates of Occupancy where they are required by the authority having jurisdiction
3. Divisions 27 and 28 Communications and Life Safety systems, including Fire Alarm, Public Address/Intercom systems, Classroom Sound Reinforcement systems, Surveillance systems and Access Control systems.

9.8.6 Add the following Paragraph 9.8.6: Consistent with Mn Statute 337.10, the following applies to retainage at Substantial Completion:

1. The Owner will release all retainage no later than 60 days after substantial completion, subject to the terms of this subdivision. If the Owner reduces the amount of retainage, the Contractor must reduce retainage for any Subcontractors at the same rate.
2. The Contractor must pay all remaining retainage to its Subcontractors no later than ten days after receiving payment of retainage, unless there is a dispute about the work under a subcontract. If there is a dispute about the work under a subcontract, the contractor must pay out retainage to any subcontractor whose work is not involved in the dispute and must provide a written statement detailing the amount and reason for the withholding to the affected subcontractor.
3. Upon written request of a subcontractor, the Owner shall notify the Subcontractor of a progress payment, retainage payment, or final payment made to the Contractor.
4. After substantial completion, an Owner may withhold no more than:
 - a) 250 percent of the cost to correct or complete work known at the time of Substantial Completion; and
 - b) one percent of the value of the contract or \$500, whichever is greater, pending completion and submission of all final paperwork by the Contractor or Subcontractor. For purposes of this subdivision, "final paperwork" means documents required to fulfill contractual obligations, including, but not limited to, operation manuals, payroll documents for projects subject to prevailing wage requirements, and the withholding exemption certificate required by section [270C.66](#).

If the Owner withholds payment under this paragraph, the Owner must promptly provide a written statement detailing the amount and basis of

withholding to the contractor. The Owner and contractor must provide a copy of this statement to any subcontractor that requests it. Any amounts withheld under clause (1) must be paid within 60 days after completion of the work. Any amounts withheld under clause (2) must be paid within 60 days after submission of all final paperwork.

5. Withholding retainage for warranty work is prohibited. This provision does not waive any rights for warranty claims.

6. For a project funded with federal or state aid, the Owner is not required to pay that portion of the contract funded by federal or state aid until the federal or state aid payments have been received.

7. Nothing in this section requires payment for a portion of a contract that is not complete or for which an invoice has not been submitted.

9.10 FINAL COMPLETION AND FINAL PAYMENT

9.10.2 Add the following sentence to the end of Subparagraph 9.10.2: The following items shall also be submitted prior to final payment. All items are to be submitted in electronic format:

1. Completed Punch List signed by an officer of the firm.
2. Consent of Surety to Final Payment - AIA G707
3. Payroll records showing compliance with Minnesota Statute 177.41-44 regarding Prevailing Wage Rates for Commercial Construction
4. Lien waivers for all previous payments to subcontractors consistent with the amounts indicated on Applications for Payment.
5. Warranties per Section 01740.
6. Minnesota Dept. of Revenue IC 134 Withholding Tax Form for General Contractor and all Subcontractors.
7. Progress photographs
8. Other data specified in the Contract Documents

9.10.2.1 Add the following Paragraph 9.10.2.1:

Construction Record Drawings:

Significant changes incorporated in the Project construction which differ from the original Contract Drawings shall be indicated on a set of Contract Drawings, and or shop drawings as appropriate.

ARTICLE 11 INSURANCE AND BONDS

11.1 CONTRACTOR'S LIABILITY INSURANCE

11.1.1: Add Clause 11.1.1.9 to Subparagraph 11.1.1:

11.1.1.9 Liability Insurance shall include all major divisions of coverage and be on a comprehensive basis including:

1. Premises-Operations.
2. Independent Contractors' Protective
3. Products and Completed Operations.
4. Personal Injury Liability with Employment Exclusion deleted.
5. Contractual - including special provision for Contractor's obligations under Paragraph 3.18.
6. Owned, non-owned and hired motor vehicles.
7. Broad Form Property Damage including Completed Operations.
8. Umbrella Excess Liability.

11.1.2 Add the following to subparagraph 11.1.2:

The insurance required by Subparagraph 11.1.1 shall be written for not less than the following, or greater if required by law:

1. Workmen's Compensation:
 - a) State: Statutory
 - b) Voluntary Compensation (by exempt entities): Same as State Worker's Compensation
 - c) Employer's Liability:

\$500,000	Each Occurrence
\$500,000	Disease, Policy Limit
\$500,000	Disease, Each Employee
 - f) Benefits required by union labor contracts: As Applicable
2. General Liability (including Premises/Operations; Independent Contractors' Protective; Products and Completed Operations; Broad Form Property Damage):
 - a) Bodily Injury and Property Damage (combined single limit)

\$1,000,000	Each Occurrence
\$2,000,000	Aggregate
 - b) Products and Completed Operations to be maintained for a minimum of 2 years after final payment and the Contractor shall continue to provide evidence of such coverage to the Owner on an annual basis during the aforementioned period.
 - c) Property Damage Liability shall include coverage for the following hazards:
 - X (Explosion)
 - C (Collapse)
 - U (Underground)
 - d) Contractual Liability (Hold Harmless Coverage)
Bodily Injury and Property Damage (Combined Single Limit)

\$1,000,000	Each Occurrence
\$2,000,000	Aggregate
 - e) Personal Injury (with Employment Exclusion deleted, if applicable):

\$1,000,000	Each Occurrence
-------------	-----------------
3. Umbrella Excess Liability:

\$2,000,000 over primary insurance to include auto, workers compensation, employees liability and the General Liability policies.
4. Automobile Liability (owned, non-owned, hired):
Bodily Injury and Property Damage (combined single limit)

\$1,000,000	Each Occurrence
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NOTE: The state of Minnesota has a no-fault automobile insurance requirement. The Contractor shall be certain that coverage is provided which conforms to any specific stipulation in the law.

Add Clause 11.1.3.1 to Subparagraph 11.1.3

11.1.3.1 The Contractor shall furnish one copy of each Certificates of Insurance herein required for each copy of the Agreement which shall specifically set forth evidence of coverage required by the Contract Documents. The Contractor shall furnish to the Owner copies of endorsements that are subsequently issued amending coverage or limits.

Add subparagraph 11.1.4 as follows:

11.1.4 The Contractor shall not commence the work until he has obtained the required insurance, and such insurance has been approved by the Architect in writing. The Contractor shall submit Certificates of Insurance to the Architect in duplicate for the review and approval of the Owner. If this insurance is written on the Comprehensive General Liability policy form, the Certificates shall be AIA Document G705, Certificate of Insurance. If this insurance is written on a Commercial General Liability policy form, ACORD Form 25S will be acceptable.

Add subparagraph 11.1.5 as follows:

11.1.5 The Contractor shall name the Architect and the Owner and their agents and employees as Additional Insured on a primary basis on the Contractor's Comprehensive or Commercial General Liability, commercial auto, discontinued products, completed operations and umbrella/excess liability policies. These policies shall be endorsed to include these parties as additional insured and shall be indicated as such on the Certificate of Insurance. Being named as certificate holder only will not fulfill this requirement.

Add subparagraph 11.1.6 as follows:

11.1.6 Subcontractors Insurance: Contractors shall secure and maintain Certificates of Insurance from subcontractors.

11.3 PROPERTY INSURANCE

Modify Article 11.3 as follows:

11.3.1 Delete the first sentence of Subparagraph 11.3.1 and substitute:

The Contractor shall purchase and maintain, in a company or companies lawfully authorize to do business in the jurisdiction in which the Project is located, property insurance written on a builder's risk "all risk" or equivalent policy form in the amount of the Contract Sum, plus value of subsequent Contract modification, and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles.

Add to Subparagraph 11.3.1

The Contractor shall include the Owner, Architect, Subcontractors and Sub-subcontractors as additional insureds on the property insurance required by this Paragraph 11.3.1, and shall furnish to the Owner and Architect one copy of the Certificates of Insurance which shall specifically set forth evidence of coverage required by Paragraph 11.3. If the Owner is damaged by the failure of the Contractor to procure or maintain such insurance, then the Contractor shall be liable for all damages, injury, costs and expenses, including attorneys' fees, arising out of or resulting from the Contractor's failure to procure or maintain such insurance.

11.3.1.1 In the first sentence of Clause 11.3.1.1, delete the words "and Contractor's" and substitute the words "and Owner's".

11.3.1.1 In the first sentence of Clause 11.3.1.1, after the word "Architect's" add the words "and Owner's".

Substitute the word "Comprehensive" for the word "all-risk" and delete the word "falsework" from the first sentence.

11.3.1.2 Delete Clause 11.3.1.2 in its entirety.

11.3.1.3 Delete Clause 11.3.1.3 in its entirety.

11.3.2 Add Clauses 11.3.2.1 and 11.3.2.2 to Subparagraph 11.3.2 as follows:

- .1 Insurance Limits \$5,000,000
- .2 Objects insured: All air tanks, jacketed kettles, jacketed coffee urns, all pressure vessels subject to State Inspection, all hot water storage tanks, and all auxiliary piping.

Delete subparagraph 11.3.3 in its entirety.

11.3.4 Delete Subparagraph 11.3.4 in its entirety.

11.3.5 Delete Subparagraph 11.3.5 in its entirety

11.3.6. Delete Subparagraph 11.3.6 in its entirety and substitute:

Before an exposure to loss may occur, the Contractor shall file with the Owner 2 certified copies of the policy or policies providing property insurance required by this Paragraph 11.4, with all definitions, terms, exclusions and endorsements related to the Project and other insured areas. Each policy shall contain a provision that the policy will not be cancelled or allowed to expire, and that its limits will not be reduced, until at least 60 days prior written notice has been provided to the Owner.

11.3.7 Delete this paragraph in its entirety.

11.3.8 In Subparagraph 11.3.8, delete the first sentence and substitute the following:

A loss insured under the Contractor's property insurance required by Paragraph 11.3 as supplemented herein shall, at the discretion of the Owner, be adjusted by the Contractor as fiduciary and made payable to the Contractor as fiduciary for the insureds, as their interests may appear, subject to the requirements of any applicable mortgagee clause and Subparagraph 11.3.10 as supplemented herein.

11.3.9 In Subparagraph 11.3.9, delete "Owner" each time it appears and substitute the word "Contractor."

11.4 PERFORMANCE BOND AND LABOR AND MATERIAL PAYMENT BOND

Add to 11.4.1

The bonds stipulated by the paragraph shall be a 100% Performance and 100% Labor and Material Bond on AIA Document A312 provided and paid for by the Contractor for the full amount of the contract. The bonds shall comply with all applicable laws, rules, regulations and industry standards. Bonds must be issued by a company acceptable to the Architect and must be accompanied by a Power of Attorney, and the signatures of principal and attorney-in-fact must both be notarized. The bonds are to be delivered with the executed Agreement.

- .1 The contractor shall deliver the required bonds to the Owner not later than 3 days following the date the agreement is entered into, or if the Work is to be commenced prior thereto in response to a letter of intent, the Contractor shall,

prior to the commencement of the work, submit evidence satisfactory to the Owner that such bonds will be furnished.

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

ARTICLE 12. UNCOVERING AND CORRECTION OF WORK

12.1 UNCOVERING OF WORK

12.1.1 In Subparagraph 12.1.1, add "or the Owner" after the word "Architect" the second time it occurs.

12.1.2 In the first sentence of Subparagraph 12.1.2, add "or the Owner" after the word "Architect" the second time it occurs.

12.2 CORRECTION OF WORK

12.2.2 In Subparagraph 12.2.2.1, after the words "Documents" where it appears, add "and all applicable laws, codes, ordinances, rules, regulations and industry standards."

Delete the last two sentences of Subparagraph 12.2.2.1

Delete Subparagraph 12.2.2.3 in its entirety.

ARTICLE 13 MISCELLANEOUS PROVISIONS

13.2 SUCCESSORS AND ASSIGNS

13.2.1 Add the following to subparagraph 13.2.1.

The Contractor shall also not assign any moneys due or to become due to the Contractor hereunder, without written notice to and written consent of the Owner.

13.5 TESTS AND INSPECTIONS

13.5.1 At the end of the second sentence in Subparagraph 13.5.1, add "and shall immediately provide copies of all results, and reports of such tests, inspections and approvals to both the Owner and the Architect.

In the third sentence in Subparagraph 13.5.1, after the word "Architect" add "and the Owner"

13.5.2 At the end of Subparagraph 13.5.2 add:

The Contractor shall immediately provide copies of all results, and reports of such tests, inspections and approvals to both the Owner and the Architect.

13.6 INTEREST

Delete Paragraph 13.6 in its entirety.

13.7 COMMENCEMENT OF STATUTORY LIMITATION PERIOD

13.7.1 Delete Subparagraph 13.7.1 in its entirety, and substitute:

As between the Owner and the Contractor, the applicable statute of limitations shall commence at such time as the party asserting a Claim or cause of action against the other party knew or should have known of the injury, damage, act or omission giving rise to any Claim or cause of action.

13.8 Add the following paragraph 13.8.1:

The contractor shall enforce the following policy adopted by the school board regarding the use of tobacco on school premises:

All Anoka-Hennepin Independent School District 11 facilities, grounds and vehicles will be tobacco-free.

13.9 Add the following paragraph 13.9.1:

The contractor shall enforce the following policy adopted by the school board regarding the use of tobacco on school premises:

In compliance with the regulations implementing the Drug-Free Workplace Act of 1988, the Anoka-Hennepin School District certifies that it will provide a drug-free workplace.

The unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited in the workplace in the Anoka-Hennepin School District. Any employee violating this prohibition will be subject to disciplinary action up to and including termination of employment.

13.10 Add the following paragraph 13.10.1:

The contractor shall enforce the Policy on Weapons adopted by the school board. It is the policy of the Anoka-Hennepin School District to maintain a positive, safe and secure learning and working environment. Therefore, the District will not tolerate weapons as defined in this policy at any time on school property or in the school zone*, including district owned buildings and grounds; leased or rented facilities; school sponsored activities; field trips; school buses and other school vehicles; and school bus loading and unloading areas. Students and visitors may not possess, handle, transmit or use any weapons in any of the school environments listed above.

* School zone: The area surrounding school property to a distance of 300 feet or one city block, whichever distance is greater, beyond school property.

ARTICLE 14. TERMINATION OR SUSPENSION OF THE CONTRACT

14.1 TERMINATION BY THE CONTRACTOR

14.1.3 In Subparagraph 14.1.3, delete the word "seven" and substitute "fourteen".

In Subparagraph 14.1.3, after the word "executed" delete the remainder of the sentence, and substitute "provided that such work conforms with the Contract Documents and applicable laws, codes, ordinances, rules, regulations and industry standards."

Add Paragraph 14.4 to Article 14:

14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

14.4.2.3 Delete Subparagraph 14.1.2.3 in its entirety and substitute:

Except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing Subcontractors, Sub-subcontractors or their agents or employees or any other persons performing portions of the Work under contract with the Contractor.

14.4.3 Delete subparagraph 14.4.3 in its entirety and substitute:

In case of termination for the Owner's convenience, the Contractor shall be entitled to receive payment from the Owner on the same basis provided in Subparagraph 14.1.3 as supplemented herein. However, if the Owner has incurred damages or loss as a result of the actions or

omissions of the Contractor, Subcontractors, Sub-subcontractors, or anyone directly or indirectly employed by them or for whose acts they may be liable, the Owner shall be entitled to reduce any payments to the Contractor by the amount of any such damages or loss, and shall further be entitled to institute all legal and equitable proceedings against the Contractor to recover any remaining damages or loss resulting from such actions or omissions.

END OF DOCUMENT

WAGE RATE POLICY

PART 1 GENERAL

1.1 Wage Rate Requirements:

1. Because this Contract is being financed in part or in total with state funds, it must be compliant with School Board Policy and in accordance with Minnesota Statutes 177.41 through 177.43 regarding Prevailing Wage Rates for Construction Projects.
2. Minnesota Statutes 177.41-44, commonly known as The Little Davis-Bacon Act states "It is in the public interest that public buildings and other public works be constructed and maintained by the best means and highest quality of labor reasonably available, and that persons working on public works be compensated according to the real value of the services they perform. It is, therefore, declared to be the public policy of this State that wages of laborers, workmen, and mechanics engaged in State projects would be comparable to wages paid for similar work in the community as a whole".
3. The Commissioner of Labor and Industry shall determine the prevailing wage rates, prevailing hours of labor, and hourly basic rates of pay for all trades and occupations required in any construction project. Any wage determinations which are found not to be so promulgated do not relieve the Contractor from any responsibility for paying the prevailing wage rate of the trade in question. Additional classifications may develop between certifications by the Minnesota Department of Labor and Industry. Therefore, no inferences may be drawn from the omission of a classification which has local usage.
4. Any Contractor or Subcontractor awarded a contract with the School District that has an estimated cost of more than \$2,500 and only one trade or occupation is required to complete it, or a contract with an estimated cost of more than \$25,000 and more than one trade or occupation is required to complete it, must use the Prevailing Wage Rate to pay their employees. If an employer pays less than the prevailing wage, the Minnesota Department of Labor and Industry (DLI) requires the employer to pay back-wages to the worker to make up the difference. DLI can also require the employer to pay penalties for failure to comply with the prevailing wage law. Further, the State and School District will not be liable for increased labor costs, or errors or changes to the rates or classifications.
5. Contractor is solely responsible for enforcement of compliance with Wage Rate Determination Schedule for persons employed directly by Contractor and persons in the employ of its Subcontractors, including settlement of claims made by persons found to have received wages lower than rate classification included in said schedule.
6. Contractors and subcontractors must furnish completed prevailing wage certified payroll information to the following email address: Buildingsandgrounds@AHSCHOOLS.US and to Architect. Include Contractors' or Subcontractors' firm name and contract number or Purchase Order number on email subject line. This form must be furnished not more than 14 days after the end of each pay period, and with submittal of a Request for Payment for the following time period. The payrolls must contain all the data required by section 177.30. The contracting authority may examine all records relating to wages paid laborers or mechanics on work to which sections 177.41 to 177.44 apply Prevailing Wage Payroll Information form is found at <http://workplace.doli.state.mn.us/>.

1.2 PREVAILING WAGE RATE DETERMINATION

- A. A copy of the applicable Prevailing Wage Rate Determination Schedule can be obtained from:
Department of Labor and Industry
Prevailing Wage Section
443 Lafayette Road N
St. Paul, Minnesota 55155
(651) 284-5091
DOLI.PrevWage@state.mn.us

1.3 POSTING OF WAGE DETERMINATION SCHEDULES

- A. The Contractor shall post and maintain at least one (1) copy of the schedule of Prevailing Wage Determination Schedule in a conspicuous location on the construction site until substantial completion of the Project.

1.4 ENFORCEMENT AND COMPLIANCE

- A. Contractor is solely responsible for enforcement of compliance with Wage Rate Determination Schedule for persons employed directly by Contractor and persons in the employ of its Subcontractors, including settlement of claims made by persons found to have received wages lower than rate classification included in said schedule.

Contractors and subcontractors must furnish prevailing wage payroll information in Microsoft Office Excel format to the following email address: Buildingsandgrounds@AHSCHOOLS.US and to Architect. Include Contractor's or Subcontractors' firm name and contract or Purchase Order number on email subject line. This form must be furnished not more than 14 days after each pay period, and with submittal of a Request for Payment for the following time period. No other payroll forms will be accepted to meet this requirement. Prevailing Wage Payroll Information form is found at <http://workplace.doli.state.mn.us/> and at the end of this section.

Construction Type: Commercial**County Number: 02**

County Name: ANOKA

Effective: 2023-12-26

This project is covered by Minnesota prevailing wage statutes. Wage rates listed below are the minimum hourly rates to be paid on this project.

All hours worked in excess of eight (8) hours per day or forty (40) hours per week shall be paid at a rate of one and one half (1 1/2) times the basic hourly rate. *Note: Overtime pay after eight (8) hours on the project must be paid even if the worker does not exceed forty (40) hours in the work week.*

Violations should be reported to:

Department of Labor and Industry
Prevailing Wage Section
443 Lafayette Road N
St Paul, MN 55155
(651) 284-5091
DLI.PrevWage@state.mn.us

* Indicates that adjacent county rates were used for the labor class listed.

County: ANOKA (02)**LABOR CODE AND CLASS**

<u>EFFECT</u>	<u>BASIC</u>	<u>FRINGE</u>	<u>TOTAL</u>
<u>DATE</u>	<u>RATE</u>	<u>RATE</u>	<u>RATE</u>

LABORERS (101 - 112) (SPECIAL CRAFTS 701 - 730)

101	LABORER, COMMON (GENERAL LABOR WORK)	2023-12-26	41.66	23.74	65.40
		2024-05-01	43.39	24.24	67.63
102	LABORER, SKILLED (ASSISTING SKILLED CRAFT JOURNEYMAN)	2023-12-26	41.66	23.74	65.40
		2024-05-01	43.39	24.24	67.63
103	LABORER, LANDSCAPING (GARDENER, SOD LAYER AND NURSERY OPERATOR)	2023-12-26	28.29	20.41	48.70
		2024-05-01	30.04	21.16	51.20
104	FLAG PERSON	2023-12-26	41.66	23.74	65.40
		2024-05-01	43.39	24.24	67.63
105*	WATCH PERSON	2023-12-26	38.03	23.39	61.42
		2024-05-01	39.76	23.89	63.65
106*	BLASTER	2023-12-26	34.26	18.54	52.80
107	PIPELAYER (WATER, SEWER AND GAS)	2023-12-26	42.40	23.49	65.89
		2024-05-01	45.13	24.24	69.37
108*	TUNNEL MINER	2023-12-26	40.40	23.49	63.89
		2024-05-01	43.13	24.24	67.37
109	UNDERGROUND AND OPEN DITCH LABORER (EIGHT FEET BELOW STARTING GRADE LEVEL)	2023-12-26	40.40	23.49	63.89
		2024-05-01	43.13	24.24	67.37
110*	SURVEY FIELD TECHNICIAN (OPERATE TOTAL STATION, GPS RECEIVER, LEVEL, ROD OR RANGE POLES, STEEL TAPE MEASUREMENT; MARK AND DRIVE STAKES;	2023-12-26	41.66	23.74	65.40

HAND OR POWER DIGGING FOR AND IDENTIFICATION OF MARKERS OR MONUMENTS; PERFORM AND CHECK CALCULATIONS; REVIEW AND UNDERSTAND CONSTRUCTION PLANS AND LAND SURVEY MATERIALS). THIS CLASSIFICATION DOES NOT APPLY TO THE WORK PERFORMED ON A PREVAILING WAGE PROJECT BY A LAND SURVEYOR WHO IS LICENSED PURSUANT TO MINNESOTA STATUTES, SECTIONS 326.02 TO 326.15.

	2024-05-01	43.39	24.24	67.63
111* TRAFFIC CONTROL PERSON (TEMPORARY SIGNAGE)	2023-12-26	41.66	23.74	65.40
	2024-05-01	43.39	24.24	67.63

SPECIAL EQUIPMENT (201 - 204)

201* ARTICULATED HAULER	2023-12-26	46.99	25.20	72.19
202* BOOM TRUCK	2023-12-26	44.91	25.20	70.11
	2024-04-29	46.51	26.40	72.91
203 LANDSCAPING EQUIPMENT, INCLUDES HYDRO SEEDER OR MULCHER, SOD ROLLER, FARM TRACTOR WITH ATTACHMENT SPECIFICALLY SEEDING, SODDING, OR PLANT, AND TWO-FRAMED FORKLIFT (EXCLUDING FRONT, POSIT-TRACK, AND SKID STEER LOADERS), NO EARTHWORK OR GRADING FOR ELEVATIONS	2023-12-26	28.29	20.41	48.70
	2024-05-01	30.04	21.16	51.20
204 OFF-ROAD TRUCK	2023-12-26	41.73	22.85	64.58
205* PAVEMENT MARKING OR MARKING REMOVAL EQUIPMENT (ONE OR TWO PERSON OPERATORS); SELF-PROPELLED TRUCK OR TRAILER MOUNTED UNITS.	2023-12-26	37.05	19.39	56.44

HIGHWAY/HEAVY POWER EQUIPMENT OPERATOR

GROUP 2 *	2023-12-26	43.38	25.20	68.58
	2024-04-29	45.61	26.40	72.01
306	GRADER OR MOTOR PATROL			
308	TUGBOAT 100 H.P. AND OVER WHEN LICENSE REQUIRED (HIGHWAY AND HEAVY ONLY)			
GROUP 3	2023-12-26	42.81	25.20	68.01
	2024-04-29	45.01	26.40	71.41
309	ASPHALT BITUMINOUS STABILIZER PLANT			
310	CABLEWAY			
312	DERRICK (GUY OR STIFFLEG) (POWER)(SKIDS OR STATIONARY) (HIGHWAY AND HEAVY ONLY)			
314	DREDGE OR ENGINEERS, DREDGE (POWER) AND ENGINEER			
316	LOCOMOTIVE CRANE OPERATOR			
320	TANDEM SCRAPER			
322	TUGBOAT 100 H.P AND OVER (HIGHWAY AND HEAVY ONLY)			
GROUP 4	2023-12-26	42.49	25.20	67.69
	2024-04-29	44.67	26.40	71.07
323	AIR TRACK ROCK DRILL			
324	AUTOMATIC ROAD MACHINE (CMI OR SIMILAR) (HIGHWAY AND HEAVY ONLY)			
325	BACKFILLER OPERATOR			
327	BITUMINOUS ROLLERS, RUBBER TIRED OR STEEL DRUMMED (EIGHT TONS AND OVER)			
328	BITUMINOUS SPREADER AND FINISHING MACHINES (POWER), INCLUDING PAVERS, MACRO SURFACING AND MICRO SURFACING, OR SIMILAR TYPES (OPERATOR AND SCREED PERSON)			
329	BROKK OR R.T.C. REMOTE CONTROL OR SIMILAR TYPE WITH ALL ATTACHMENTS			
330	CAT CHALLENGER TRACTORS OR SIMILAR TYPES PULLING ROCK WAGONS, BULLDOZERS AND SCRAPERS			
331	CHIP HARVESTER AND TREE CUTTER			
332	CONCRETE DISTRIBUTOR AND SPREADER FINISHING MACHINE, LONGITUDINAL FLOAT, JOINT MACHINE, AND SPRAY MACHINE			
334	CONCRETE MOBIL (HIGHWAY AND HEAVY ONLY)			
335	CRUSHING PLANT (GRAVEL AND STONE) OR GRAVEL WASHING, CRUSHING AND SCREENING PLANT			
336	CURB MACHINE			
337	DIRECTIONAL BORING MACHINE			
338	DOPE MACHINE (PIPELINE)			
340	DUAL TRACTOR			

341	ELEVATING GRADER
345	GPS REMOTE OPERATING OF EQUIPMENT
347	HYDRAULIC TREE PLANTER
348	LAUNCHER PERSON (TANKER PERSON OR PILOT LICENSE)
349	LOCOMOTIVE (HIGHWAY AND HEAVY ONLY)
350	MILLING, GRINDING, PLANNING, FINE GRADE, OR TRIMMER MACHINE
352	PAVEMENT BREAKER OR TAMPING MACHINE (POWER DRIVEN) MIGHTY MITE OR SIMILAR TYPE
354	PIPELINE WRAPPING, CLEANING OR BENDING MACHINE
356	POWER ACTUATED HORIZONTAL BORING MACHINE, OVER SIX INCHES
357	PUGMILL
359	RUBBER-TIRED FARM TRACTOR WITH BACKHOE INCLUDING ATTACHMENTS (HIGHWAY AND HEAVY ONLY)
360	SCRAPER
361	SELF-PROPELLED SOIL STABILIZER
362	SLIP FORM (POWER DRIVEN) (PAVING)
363	TIE TAMPER AND BALLAST MACHINE
365	TRACTOR, WHEEL TYPE, OVER 50 H.P. WITH PTO UNRELATED TO LANDSCAPING (HIGHWAY AND HEAVY ONLY)
367	TUB GRINDER, MORBARK, OR SIMILAR TYPE

GROUP 5 *	2023-12-26	39.33	25.20	64.53
	2024-04-29	41.36	26.40	67.76

370	BITUMINOUS ROLLER (UNDER EIGHT TONS)
371	CONCRETE SAW (MULTIPLE BLADE) (POWER OPERATED)
372	FORM TRENCH DIGGER (POWER)
375	HYDRAULIC LOG SPLITTER
376	LOADER (BARBER GREENE OR SIMILAR TYPE)
377	POST HOLE DRIVING MACHINE/POST HOLE AUGER
379	POWER ACTUATED JACK
381	SELF-PROPELLED CHIP SPREADER (FLAHERTY OR SIMILAR)
382	SHEEP FOOT COMPACTOR WITH BLADE. 200 H.P. AND OVER
383	SHOULDERING MACHINE (POWER) APSCO OR SIMILAR TYPE INCLUDING SELF-PROPELLED SAND AND CHIP SPREADER
384	STUMP CHIPPER AND TREE CHIPPER
385	TREE FARMER (MACHINE)

GROUP 6 *	2023-12-26	38.06	25.20	63.26
	2024-04-29	40.02	26.40	66.42

387	CAT, CHALLENGER, OR SIMILAR TYPE OF TRACTORS, WHEN PULLING DISK OR ROLLER
389	DREDGE DECK HAND
391	GRAVEL SCREENING PLANT (PORTABLE NOT CRUSHING OR WASHING)

- 393 LEVER PERSON
- 395 POWER SWEEPER
- 396 SHEEP FOOT ROLLER AND ROLLERS ON GRAVEL COMPACTION, INCLUDING VIBRATING ROLLERS
- 397 TRACTOR, WHEEL TYPE, OVER 50 H.P., UNRELATED TO LANDSCAPING

COMMERCIAL POWER EQUIPMENT OPERATOR

GROUP 1 *	2023-12-26	49.25	25.20	74.45
	2024-04-29	51.03	26.40	77.43
501	HELICOPTER PILOT (COMMERCIAL CONSTRUCTION ONLY)			
502	TOWER CRANE 250 FEET AND OVER (COMMERCIAL CONSTRUCTION ONLY)			
503	TRUCK CRAWLER CRANE WITH 200 FEET OF BOOM AND OVER, INCLUDING JIB (COMMERCIAL CONSTRUCTION ONLY)			
GROUP 2	2023-12-26	48.88	25.20	74.08
	2024-04-29	50.64	26.40	77.04
504	CONCRETE PUMP WITH 50 METERS/164 FEET OF BOOM AND OVER (COMMERCIAL CONSTRUCTION ONLY)			
505	PILE DRIVING WHEN THREE DRUMS IN USE (COMMERCIAL CONSTRUCTION ONLY)			
506	TOWER CRANE 200 FEET AND OVER (COMMERCIAL CONSTRUCTION ONLY)			
507	TRUCK OR CRAWLER CRANE WITH 150 FEET OF BOOM UP TO AND NOT INCLUDING 200 FEET, INCLUDING JIB (COMMERCIAL CONSTRUCTION ONLY)			
GROUP 3	2023-12-26	47.35	25.20	72.55
	2024-04-29	49.05	26.40	75.45
508	ALL-TERRAIN VEHICLE CRANES (COMMERCIAL CONSTRUCTION ONLY)			
509	CONCRETE PUMP 32-49 METERS/102-164 FEET (COMMERCIAL CONSTRUCTION ONLY)			
510	DERRICK (GUY & STIFFLEG) (COMMERCIAL CONSTRUCTION ONLY)			
511	STATIONARY TOWER CRANE UP TO 200 FEET			
512	SELF-ERECTING TOWER CRANE 100 FEET AND OVER MEASURED FROM BOOM FOOT PIN (COMMERCIAL CONSTRUCTION ONLY)			
513	TRAVELING TOWER CRANE (COMMERCIAL CONSTRUCTION ONLY)			
514	TRUCK OR CRAWLER CRANE UP TO AND NOT INCLUDING 150 FEET OF BOOM, INCLUDING JIB (COMMERCIAL CONSTRUCTION ONLY)			
GROUP 4 *	2023-12-26	46.99	25.20	72.19
	2024-04-29	48.68	26.40	75.08
515	CRAWLER BACKHOE INCLUDING ATTACHMENTS (COMMERCIAL CONSTRUCTION ONLY)			

- 516 FIREPERSON, CHIEF BOILER LICENSE (COMMERCIAL CONSTRUCTION ONLY)
- 517 HOIST ENGINEER (THREE DRUMS OR MORE) (COMMERCIAL CONSTRUCTION ONLY)
- 518 LOCOMOTIVE (COMMERCIAL CONSTRUCTION ONLY)
- 519 OVERHEAD CRANE (INSIDE BUILDING PERIMETER) (COMMERCIAL CONSTRUCTION ONLY)
- 520 TRACTOR. BOOM TYPE (COMMERCIAL CONSTRUCTION ONLY)

GROUP 5	2023-12-26	44.91	25.20	70.11
	2024-04-29	46.51	26.40	72.91

- 521 AIR COMPRESSOR 450 CFM OR OVER (TWO OR MORE MACHINES) (COMMERCIAL CONSTRUCTION ONLY)
- 522 CONCRETE MIXER (COMMERCIAL CONSTRUCTION ONLY)
- 523 CONCRETE PUMP UP TO 31 METERS/101 FEET OF BOOM
- 524 DRILL RIGS, HEAVY ROTARY OR CHURN OR CABLE DRILL WHEN USED FOR CAISSON FOR ELEVATOR OR BUILDING CONSTRUCTION (COMMERCIAL CONSTRUCTION ONLY)
- 525 FORKLIFT (COMMERCIAL CONSTRUCTION ONLY)
- 526 FRONT END, SKID STEER 1 C YD AND OVER
- 527 HOIST ENGINEER (ONE OR TWO DRUMS) (COMMERCIAL CONSTRUCTION ONLY)
- 528 MECHANIC-WELDER (ON POWER EQUIPMENT) (COMMERCIAL CONSTRUCTION ONLY)
- 529 POWER PLANT (100 KW AND OVER OR MULTIPLES EQUAL TO 100KW AND OVER) (COMMERCIAL CONSTRUCTION ONLY)
- 530 PUMP OPERATOR AND/OR CONVEYOR (TWO OR MORE MACHINES) (COMMERCIAL CONSTRUCTION ONLY)
- 531 SELF-ERECTING TOWER CRANE UNDER 100 FEET MEASURED FROM BOOM FOOT PIN (COMMERCIAL CONSTRUCTION ONLY)
- 532 STRADDLE CARRIER (COMMERCIAL CONSTRUCTION ONLY)
- 533 TRACTOR OVER D2 (COMMERCIAL CONSTRUCTION ONLY)
- 534 WELL POINT PUMP (COMMERCIAL CONSTRUCTION ONLY)

GROUP 6 *	2023-12-26	43.28	25.20	68.48
	2024-04-29	44.82	26.40	71.22

- 535 CONCRETE BATCH PLANT (COMMERCIAL CONSTRUCTION ONLY)
- 536 FIREPERSON, FIRST CLASS BOILER LICENSE (COMMERCIAL CONSTRUCTION ONLY)
- 537 FRONT END, SKID STEER UP TO 1 C YD
- 538 GUNITE MACHINE (COMMERCIAL CONSTRUCTION ONLY)
- 539 TRACTOR OPERATOR D2 OR SIMILAR SIZE (COMMERCIAL CONSTRUCTION ONLY)
- 540 TRENCHING MACHINE (SEWER, WATER, GAS) EXCLUDES WALK BEHIND TRENCHER

GROUP 7	2023-12-26	42.06	25.20	67.26
	2024-04-29	43.55	26.40	69.95

541	AIR COMPRESSOR 600 CFM OR OVER (COMMERCIAL CONSTRUCTION ONLY)			
542	BRAKEPERSON (COMMERCIAL CONSTRUCTION ONLY)			
543	CONCRETE PUMP/PUMPCRETE OR COMPLACO TYPE (COMMERCIAL CONSTRUCTION ONLY)			
544	FIREPERSON, TEMPORARY HEAT SECOND CLASS BOILER LICENSE (COMMERCIAL CONSTRUCTION ONLY)			
545	OILER (POWER SHOVEL, CRANE, TRUCK CRANE, DRAGLINE, CRUSHERS AND MILLING MACHINES, OR OTHER SIMILAR POWER EQUIPMENT) (COMMERCIAL CONSTRUCTION ONLY)			
546	PICK UP SWEEPER (ONE CUBIC YARD HOPPER CAPACITY) (COMMERCIAL CONSTRUCTION ONLY)			
547	PUMP AND/OR CONVEYOR (COMMERCIAL CONSTRUCTION ONLY)			

GROUP 8 *	2023-12-26	39.88	25.20	65.08
	2024-04-29	41.28	26.40	67.68
548	ELEVATOR OPERATOR (COMMERCIAL CONSTRUCTION ONLY)			
549	GREASER (COMMERCIAL CONSTRUCTION ONLY)			
550	MECHANICAL SPACE HEATER (TEMPORARY HEAT NO BOILER LICENSE REQUIRED) (COMMERCIAL CONSTRUCTION ONLY)			

TRUCK DRIVERS

GROUP 1	2023-12-26	32.85	9.02	41.87
601	MECHANIC . WELDER			
602	TRACTOR TRAILER DRIVER			
603	TRUCK DRIVER (HAULING MACHINERY INCLUDING OPERATION OF HAND AND POWER OPERATED WINCHES)			

GROUP 2 *	2023-12-26	36.43	22.70	59.13
	2024-05-01	38.39	23.70	62.09
604	FOUR OR MORE AXLE UNIT, STRAIGHT BODY TRUCK			

GROUP 3	2023-12-26	22.50	6.50	29.00
605	BITUMINOUS DISTRIBUTOR DRIVER			
606	BITUMINOUS DISTRIBUTOR (ONE PERSON OPERATION)			
607	THREE AXLE UNITS			

GROUP 4 *	2023-12-26	28.00	9.56	37.56
608	BITUMINOUS DISTRIBUTOR SPRAY OPERATOR (REAR AND OILER)			
609	DUMP PERSON			

- 610 GREASER
- 611 PILOT CAR DRIVER
- 612 RUBBER-TIRED, SELF-PROPELLED PACKER UNDER 8 TONS
- 613 TWO AXLE UNIT
- 614 SLURRY OPERATOR
- 615 TANK TRUCK HELPER (GAS, OIL, ROAD OIL, AND WATER)
- 616 TRACTOR OPERATOR, UNDER 50 H.P.

SPECIAL CRAFTS

701	HEATING AND FROST INSULATORS	2023-12-26	49.04	31.70	80.74
702	BOILERMAKERS	2023-12-26	44.37	30.55	74.92
		2024-01-01	46.00	31.93	77.93
703	BRICKLAYERS	2023-12-26	45.47	25.76	71.23
		2024-05-01	48.51	25.76	74.27
704	CARPENTERS	2023-12-26	43.94	27.89	71.83
		2024-04-29	46.49	27.89	74.38
705	CARPET LAYERS (LINOLEUM)	2023-12-26	43.65	25.53	69.18
		2024-04-29	46.20	25.53	71.73
706	CEMENT MASONS	2023-12-26	46.46	23.47	69.93
		2024-04-29	49.21	23.47	72.68
707	ELECTRICIANS	2023-12-26	52.00	32.80	84.80
708	ELEVATOR CONSTRUCTORS	2023-12-26	57.49	43.71	101.20
		2024-01-01	59.95	44.53	104.48
709	GLAZIERS	2023-12-26	46.73	25.50	72.23

		2024-06-03	49.73	25.50	75.23
710	LATHERS	2023-12-26	45.40	25.40	70.80
		2024-04-29	47.95	25.40	73.35
712	IRONWORKERS	2023-12-26	43.00	34.11	77.11
		2024-04-28	46.00	34.11	80.11
714	MILLWRIGHT	2023-12-26	41.70	31.81	73.51
715	PAINTERS (INCLUDING HAND BRUSHED, HAND SPRAYED, AND THE TAPING OF PAVEMENT MARKINGS)	2023-12-26	42.40	26.49	68.89
		2024-04-29	44.70	26.49	71.19
716*	PILEDRIIVER (INCLUDING VIBRATORY DRIVER OR EXTRACTOR FOR PILING AND SHEETING OPERATIONS)	2023-12-26	43.53	27.91	71.44
		2024-05-01	47.03	27.91	74.94
717	PIPEFITTERS . STEAMFITTERS	2023-12-26	52.48	34.76	87.24
		2024-05-01	55.68	34.76	90.44
718	PLASTERERS	2023-12-26	45.98	23.99	69.97
		2024-06-01	48.78	23.99	72.77
719	PLUMBERS	2023-12-26	52.98	30.72	83.70
720	ROOFER	2023-12-26	44.65	21.89	66.54
		2024-05-06	46.65	21.89	68.54
		2024-11-04	48.65	21.89	70.54

721	SHEET METAL WORKERS	2023-12-26	50.46	33.32	83.78
722	SPRINKLER FITTERS	2023-12-26	51.26	34.10	85.36
723*	TERRAZZO WORKERS	2023-12-26	45.32	22.29	67.61
724	TILE SETTERS	2023-12-26	40.83	29.15	69.98
		2024-04-29	43.43	29.15	72.58
725*	TILE FINISHERS	2023-12-26	33.53	23.32	56.85
		2024-04-29	35.61	23.32	58.93
726	DRYWALL TAPER	2023-12-26	40.12	28.08	68.20
		2024-04-29	42.86	28.08	70.94
727	WIRING SYSTEM TECHNICIAN	2023-12-26	44.61	20.16	64.77
728	WIRING SYSTEMS INSTALLER	2023-12-26	31.25	16.34	47.59
729	ASBESTOS ABATEMENT WORKER	2023-12-26	37.63	23.36	60.99
		2024-01-01	39.86	24.11	63.97
730	SIGN ERECTOR	2023-12-26	32.37	19.40	51.77
		2024-06-01	34.12	19.40	53.52

END OF SECTION 007310

PROJECT MANAGEMENT AND COORDINATION

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Preconstruction meeting.
- B. Progress meetings
- C. Progress photographs.
- E. Submittals
- F. Daily Log of Construction

1.2 RELATED REQUIREMENTS

- A. Section 01 1000 - Summary: Stages of the Work, Work covered by each contract, occupancy.
- B. Section 01 7000 - Execution and Closeout Requirements: Additional Close-out requirements.

1.3 PROJECT COORDINATION

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.1 PRECONSTRUCTION MEETING

- A. Architect will schedule a meeting after Notice of Award.
- B. Attendance Required:
 - 1. Owner.
 - 2. Architect.
 - 3. Contractor.
 - 4. Sub-contractors of major trades, including as a minimum all those whose work consists of at least five percent (5%) of the contract amount.
- C. Agenda:
 - A. Contract
 - B. Procedure
 - 1. PreConstruction Submittals:
 - a. Insurance Certificates
 - b. Payment and Performance Bonds
 - c. Schedule of Values
 - d. Subcontractor/Supplier List
 - e. Construction Schedule
 - f. Submittal Schedule
 - 2. Permit
 - a. Review by responsible jurisdiction
 - b. Watershed District
 - c. MnDLI Plumbing
 - d. MetCouncil SAC
 - 3. Communication
 - 4. Submittals – reviewed and stamped by GC, note any deviations from documents
 - 5. Contract Time (01 1000)
 - a. Construction start
 - b. Substantial Completion
 - c. Final date of work on site
 - d. Final Completion (close-outs, etc.)
 - 6. Applications for Payment/Lien Waivers/Payroll Reports/Daily Job Logs

- 7. Changes (ASI/C.O. G701)
- 8. Closeouts (01 7700)
- C. Coordination
 - 1. Access/use of premises
 - a. Site and Building access
 - b. Weekly job progress meetings
 - c. Other work by Owner (hazardous materials removal)
 - d. Firestopping requirements
- D. Schedule

- D. Contractor shall record minutes and distribute copies within one week after meeting to participants, with copies to Architect, Owner, participants, and those affected by decisions made.

3.4 PROGRESS MEETINGS

- A. Weekly jobsite progress meetings will occur at a time determined by the Owner throughout progress of the Work until completion of all work on site and submittal of all Close-Out materials.
- B. Make arrangements for meetings, prepare agenda with copies for participants, prepare and distribute minutes of meetings recording discussions, decisions and tasks assigned.
- C. Attendance Required: Project Manager, Job superintendent, Owner, Architect, and major Subcontractors (HVAC, Plumbing, Electrical, etc.) and suppliers as appropriate to agenda topics for each meeting.
- D. Agenda:
 - 1. Review of construction progress from previous week, expected progress during the current week and anticipated progress during the following week.
 - 2. Review of RFI's, ASI's and status of submittals.
 - 3. Field observations, issues, and decisions.
 - 4. Review minutes of previous meetings.
 - 5. Overall progress schedule.
 - 6. Other business relating to Work.
- E. Record minutes and distribute copies within five business days after meeting to participants, with copies to Architect, Owner, participants, and those affected by decisions made.
- F. Present Daily Log of Construction for review at each Job Progress Meeting.
- G. Meetings are to begin with Preconstruction and will continue on a weekly basis until all close-outs are approved.

3.5 CONSTRUCTION PROGRESS SCHEDULES

- A. Within 10 days after date of the Agreement, submit preliminary schedule defining planned operations for the Work.
 - 1. Division 27 and Division 28 work shall be individual items on the schedule, with interim completion dates included in the schedules and updated each time the schedule is updated.**
- B. If preliminary schedule requires revision after review, submit revised schedule within 10 days.
- C. **Updated schedules shall be provided at a minimum of once every three months.**

3.6 PROGRESS PHOTOGRAPHS

- A. Provide photographs of site and construction throughout progress of Work.
- B. In addition to periodic, recurring views, take photographs of each of the following events:
 - 1. Completion of any roofing removal or exterior wall demolition if included.
 - 2. Final completion, minimum of ten (10) photos.

- C. Take photographs as evidence of existing project conditions as follows:
 - 1. Existing views: 10 min.
- D. Views:
 - 1. Provide non-aerial photographs from four cardinal views of job site at each specified time, until Date of Substantial Completion.
 - 2. Provide photographs documenting specific locations or complex installations not visible in photographs from four cardinal views.
- E. Frequency of photographs
 - 1. Photographs shall record progress at intervals of 1 week maximum.
- F. Digital Photographs: 24 bit color, minimum resolution of 1024 by 768, in JPG format; provide files unaltered by photo editing software.
 - 1. Delivery Medium: Via email, Dropbox or USB drive.
 - 2. File Naming: Include project identification, date and time of view, and view identification.
- G. Submittal of Progress Photographs
 - 1. Progress photos shall be submitted electronically on or before the 10th day of each month. Photos included shall include those taken during the previous month.

3.7 SUBMITTALS FOR REVIEW

- A. When the following are specified in individual sections, submit them for review:
 - 1. Product data.
 - 2. Shop drawings.
 - 3. Samples for selection.
 - 4. Samples for verification.
- B. Submit to Architect for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.
- C. Samples will be reviewed only for aesthetic, color, or finish selection.
- D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 01 7700 - CLOSEOUT.

3.8 SUBMITTALS FOR INFORMATION

- A. When the following are specified in individual sections, submit them for information:
 - 1. Certificates.
 - 2. Inspection reports.
 - 3. Manufacturer's instructions.
 - 4. Manufacturer's field reports.
 - 5. Other types indicated.
- B. Submit for Architect's knowledge as contract administrator or for Owner.

3.9 NUMBER OF COPIES OF SUBMITTALS

- A. Documents for review and for closeout: Submit one electronic copy in PDF format; an electronically-marked up file will be returned. Create PDFs at native size and right-side up; illegible files will be rejected.
- B. Samples: Submit the number specified in individual specification sections; one of which will be retained by Architect.
 - 1. After review, produce duplicates.
 - 2. Retained samples will not be returned to Contractor unless specifically so stated.

3.10 SUBMITTAL PROCEDURES

- A. Within 20 calendar days of the execution of the Agreement, and prior to the start of construction, provide a schedule of submittals, including each submittal required in the documents, the date

they will be issued to the Architect and the date response is needed. Update the schedule at least monthly until all submittals have been fully and successfully processed.

- B. Identify Project, Contractor, Subcontractor or supplier; pertinent drawing and detail number, and specification section number, as appropriate on each copy.
- C. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of Products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.
- D. Deliver submittals to the Architect via electronic delivery.
- E. Schedule submittals to expedite the Project, and coordinate submission of related items.
- F. For each submittal for review, allow 7 days excluding delivery time to and from the Contractor. No submittal shall include review periods of less than 7 days.**
- G. Identify variations from Contract Documents and Product or system limitations that may be detrimental to successful performance of the completed Work.
- H. Provide space for Contractor and Architect review stamps.
- I. When revised for resubmission, identify all changes made since previous submission.
- J. Distribute reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.
- K. Submittals not requested will not be recognized or processed.

3.11 DAILY LOG OF CONSTRUCTION

- A. A Daily Log of Construction shall be maintained on paper or electronic format developed specifically as a Daily Log of Construction.
- B. The daily log shall be presented for review at each job progress meeting, and will be reviewed prior to approval of monthly applications for payment.
- C. The Daily Log shall identify each of the following for each day work is performed on the project:
 - 1. Date
 - 2. **Names and trades of each worker on site, identified by employee's name, employer's name and trade.**
 - 3. Description of all materials delivered.
 - 4. Names and associations of all official visitors present on the jobsite (inspectors, Architects, Owner's Representatives, etc.)
 - 5. General description of work performed
 - 6. Weather

END OF SECTION

QUALITY REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve the Contractor of responsibility for compliance with Contract Document requirements.
 - 1. Specific quality assurance and quality control requirements for individual construction activities are specified in sections that specify those activities. Requirements in those sections may also cover production of standard products.
 - 2. Specified test, inspections and related actions do not limit Contractor's other quality assurance and quality control procedures that facilitate meeting Contract Document requirements.
 - 3. Requirements for Contractor to provide quality assurance and quality control services by Architect, Owner or authorities having jurisdiction are not limited by provisions of this section.
 - 4. Services include, but are not limited to the following:
 - a. Quality assurance submittals.
 - b. Mock-ups.
 - c. Control of installation.
 - d. Manufacturers' field services.

1.2 RELATED REQUIREMENTS

- A. Section 01 3000 - Project Management and Coordination: Submittal procedures.
- B. Section 01 6000 - Product Requirements: Requirements for material and product quality.

1.3 REFERENCE STANDARDS

- A. ASTM C1021 - Standard Practice for Laboratories Engaged in Testing of Building Sealants; 2008.
- B. ASTM C1077 - Standard Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation; 2011.
- C. ASTM C1093 - Standard Practice for Accreditation of Testing Agencies for Masonry; 2009.
- D. ASTM D3740 - Standard Practice for Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction; 2010.
- E. ASTM E329 - Standard Specification for Agencies Engaged Construction Inspection and/or Testing; 2011.
- F. ASTM E543 - Standard Specification for Agencies Performing Nondestructive Testing; 2009.

1.4 SUBMITTALS

- A. Design Data: Submit for Architect's knowledge as contract administrator for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents, or for Owner's information.
- B. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to Architect, in quantities

specified for Product Data.

1. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
 2. Certificates may be recent or previous test results on material or product, but must be acceptable to Architect.
- C. Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the Owner's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.
- D. Manufacturer's Field Reports: Submit reports for Architect's benefit as contract administrator or for Owner.
1. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.

1.5 REFERENCES AND STANDARDS

- A. For products and workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard of date of issue current on date of Contract Documents, except where a specific date is established by applicable code.
- C. Obtain copies of standards where required by product specification sections.
- D. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.
- E. Should specified reference standards conflict with Contract Documents, request clarification from Architect before proceeding.
- F. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of Architect shall be altered from the Contract Documents by mention or inference otherwise in any reference document.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.1 CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.
- D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Have Work performed by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.2 MOCK-UPS

- A. Tests will be performed under provisions identified in this section and identified in the respective product specification sections.
- B. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.
- C. Accepted mock-ups shall be a comparison standard for the remaining Work.
- D. Where mock-up has been accepted by Architect and is specified in product specification sections to be removed, remove mock-up and clear area when directed to do so.

3.3 TESTING AND INSPECTION

- A. The Owner will retain a testing agency to perform code-required testing and inspection services outside of this agreement. See individual specification sections for testing and inspection required.
- B. Limits on Testing/Inspection Agency Authority:
 - 1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
 - 2. Agency may not approve or accept any portion of the Work.
 - 3. Agency may not assume any duties of Contractor.
 - 4. Agency has no authority to stop the Work.
- C. Contractor Responsibilities:
 - 1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.
 - 2. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.
 - 3. Provide incidental labor and facilities:
 - a. To provide access to Work to be tested/inspected.
 - b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
 - c. To facilitate tests/inspections.
 - d. To provide storage and curing of test samples.
 - 4. Notify Architect and laboratory 24 hours prior to expected time for operations requiring testing/inspection services.
 - 5. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
 - 6. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
- D. Re-testing required because of non-conformance to specified requirements shall be performed by the same agency on instructions by Architect.
- E. Re-testing required because of non-conformance to specified requirements shall be paid for by Contractor.

3.4 MANUFACTURERS' FIELD SERVICES

- A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment as applicable, and to initiate instructions when necessary.
- B. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

3.5 DEFECT ASSESSMENT

- A. Replace Work or portions of the Work not conforming to specified requirements.
- B. If, in the opinion of Architect, it is not practical to remove and replace the Work, Architect will direct an appropriate remedy or adjust payment.

END OF SECTION

ABBREVIATIONS

@ At (the rate of)
 & And
 " Inch; Ditto (which means "same as above")
 # Number. or Pound
 [circle with diagonal slash through it] Diameter,
 Round, Phase

A: Area, Ampere; Acre; Alcove; Compressed Air
 Line
 AB: Anchor Bolt; Asbestos Board
 ABV: Above
 AC: Air Conditioning, Alternating Current,
 Acoustical
 ACC: Access
 ACF: Architectural Concrete Finish
 ACFL: Access Floor
 ACI: American Concrete Institute
 ACL: Across the Line
 ACOUST: Acoustical
 ACPL: Acoustical Plaster
 ACR: Acrylic
 ACST: Acoustic
 ACT: Acoustical Tile; Actual
 AD: Access Door, Area Drain
 ADA: Americans with Disabilities Act of 1992
 ADAAG: Americans with Disabilities Act
 Architectural Guidelines
 ADD: Addendum; Addition
 ADDL: Additional
 ADH: Adhesive
 ADJ: Adjust, Adjustable, Adjacent
 AF: Above the Floor
 AFF: Above Finished Floor
 AGA: American Gas Association
 AGG: Aggregate
 AGGR: Aggregate
 AIA: American Institute of Architects, American
 Insurance Association
 AIC: Amperes Interrupting Circuit
 AIEE: American Institute of Electrical Engineers
 AISC: American Institute of Steel Construction
 AL: Aluminum
 ALM: Alarm
 ALT: Alternate, Alteration; Altitude
 ALUM: Aluminum
 ALS: Acrylic Latex Sealant
 AMB: Ambient
 AMP: Ampere, Ampacity
 AMPY: Ampere
 AMT: Amount
 AN: Anode
 ANCH: Anchor, Anchorage
 ANN: Annunciator

ANOD: Anodized
 ANT: Antenna
 AP: Access Panel
 APPD: Approved
 APPROX: Approximate
 APRVD: Approved
 APT: Apartment
 APX: Approximate
 AR: Acid Resisting
 ARCH: Architect, Architectural
 ARS: Asbestos Roof Shingles
 AS: Acoustic Sealant
 ASB: Asbestos
 ASC: Above Suspended Ceiling
 ASCE: American Society of Civil Engineers
 ASME: American Society of Mechanical
 Engineers
 ASPH: Asphalt
 ASSEM: Assemble
 ASSOC: Association; Associate
 ASSY: Assembly
 ASTM: American Society for Testing and
 Materials
 AT: Acoustical Tile; Asphalt Tile
 ATC: Acoustical Tile Ceiling
 ATTEN: Attenuation
 ATM: Automatic Teller Machine; Atmospheric
 AUTH: Authorized
 AUTO: Automatic
 AVG: Average
 AW: Acid Waste
 AWG: American Wire Gauge
 AWM: Automatic Washing Machine
 AWS: American Welding Society
 AWWA: American Water Works Association
 AX: Axis

B: Boiler, Bathroom, Bidet
 B TO B: Back to Back
 B & B: Balled and Burlapped, Bell and Bell
 B & F: Bell and Flange
 B & S: Bell and Spigot, Brown & Sharp
 B/: Bottom (of)
 BBD: Bulletin Board
 BA: Bulb Angle
 BAL: Balance, Ballast
 BAF: Baffle
 BB: Buffalo Box, Ball Bearing,, Bulletin Board
 BBL: Barrel

BBLK: BURNISHED CONCRETE BLOCK
 BC: Broom Closet
 BD: Board, Blow Down (pipe)

BDL: Bundle
 BDY: Boundary
 BDRM: Bedroom
 BEL: Below
 BET: Between
 BETW: Between
 BEV: Bevel
 BF: Board Foot, Back Face, Bottom Face, Both Faces, Boiler Feed
 BG: Bag (e.g., of cement)
 BHP: Brake Horsepower
 BHD: Bulkhead
 BIT: Bituminous
 BJF: Bituminous Joint Filler
 BKR: Breaker
 BL: Base Line, Building Line, Block
 BLDG: Building
 BLK: Block
 BLKG: Blocking
 BLO: Blower
 BLR: Boiler
 BLT: Borrowed Lite, Bullet Tips (Hinges)
 BLT-IN: Built-In
 BM: Beam, Bench Mark
 BMT: Butyl Mastic Tape Sealant
 BN: Bullnose
 BNDG: Bending (re-bars)
 BNT: Bent
 BO: Blow Off
 BOT: Bottom
 BP: Base Plate, Blueprint, Bypass
 BPL: Bearing Plate
 BR: Bedroom, Brick, Brass, Boiler Room Branch
 BRDG: Bridge, Bridging
 BRG: Bearing
 BRK: Brick
 BRKR: Breaker
 BRKT: Bracket
 BRS: Butyl Rubber Sealant, Brass
 BRZ: Bronze
 BRZG: Brazing
 BS: Both Sides, Backset, Bluestone
 BSMT: Basement
 BT: Bathtub, Bolt
 BTR: Better
 BTU: British Thermal Units
 BTUH: British Thermal Units per Hour
 BUR: Built-up Roof
 BUZ: Buzzer
 BV: Butterfly Valve
 BVL: Bevelled
 BW: Both Ways
 BWV: Back Water Valve
 BYP: By Pass

C: Courses, Curb, Channel, Degrees Celsius,
 Clock Outlet, Calcimine
 C/C: Center to Center
 C TO C: Center to Center
 CA: Compressed Air
 CAB: Cabinet
 CAD: Cadmium, Computer-Aided Drafting
 CAIS: Caisson
 CAP: Capacity
 CAR: Carpet
 CARP: Carpenter
 CAT: Catalog
 CAV: Cavity
 CB: Catch Basin, Concrete Block,
 Cast Brass, Coal Bin
 CBL: Concrete Block
 CBX: Cast Box Strike
 CC: Cubic Centimeter
 CCT: Circuit
 CCW: Counter Clockwise
 CCTV: Closed Circuit TV
 CD: Cold Drawn, Cadmium
 CDS: Cold Drawn Steel
 CEL: Cellar
 CEM: Cement
 CEM AB: Cement Asbestos Board
 Cem P: Cement Water Paint
 CER: Ceramic
 CF: Cubic Feet
 CFL: Counterflashing
 CFM: Cubic Feet per Minute
 CFS: Cubic Feet per Second
 CFT: Cubic Foot
 CG: Corner Guard
 CH: Coat Hook
 CHB: Chalk Board
 CHR: Chilled Water Return
 CHAM: Chamfer
 CHAN: Channel
 CHBD: Chalkboard
 CHS: Chilled Water Supply
 C.I.: Cast Iron
 CI: Cast Iron
 CIN BL: Cinder Block
 CIP: Cast Iron Pipe, Cast-in-Place
 CIR: Circle, Circular, Circuit
 CIRC: Circumference
 CISP: Cast Iron Soil/sewer Pipe
 CITG: Clear Insulating Tempered Glass
 CJ: Control Joint
 CJF: Cork Joint Filler
 CK: Caulking
 CKT: Circuit
 CL: Centerline, Clearance, Closing, Closure,
 Class, Closet
 CLG: Ceiling
 CLKG: Caulking

CLH: Clothes Line Hook
 CLL: Contract Limit Line
 CLO: Closet
 CLP: Clamp
 CLR: Clear
 CLR OPG: Clear Opening
 CLS: Closure
 CM: Circular Mil (1/1000 inch),
 Center Matched
 CMP: Corrugated Metal Pipe
 CMT: Ceramic Mosaic Tile
 CMU: Concrete Masonry Unit
 CMUP: Concrete Masonry Unit Painted
 CND: Condition, Conduit
 CNDS: Condensate
 CNTR: Center, Counter
 CNVR: Conveyor
 COAX: Coaxial
 C.O.: Cased Opening
 CO: Company, Cleanout, Cased Opening, Cut
 Out
 COD: Cleanout Door
 CO & DP: Cleanout & Deck Plate
 COEF: Coefficient
 COL: Column
 COM: Common
 COMB: Combination, Combustion
 COML: Commercial
 COMM ED: Commonwealth Edison
 COMP: Composition, Compressed
 COMPO: Composition
 COMPT: Compartment
 CON: Construction
 CONC: Concrete
 CONCP: Concrete Painted
 COND: Condenser, Conduit
 CONN: Connection
 CONST: Construction
 CONSTR: Construction
 CONT: Continuous, Continue, Control
 CONTR: Contractor
 CONV: Convect, Convenience
 COP: Copper
 COR: Corner, Corridor
 CORR: Corridor, Corrugate
 COV: Cover
 CP: Cathodic Protection, Clothes
 Pole, Cesspool
 CPE: Chlorinated Polyethylene
 CPL: Cement Plaster
 CPP: Cement Plaster Painted
 CPR: Copper
 CPT: Carpet
 CR: Chromium (plated), Curtain Rod
 CRPT: Carpet
 CRS: Course, Cold Rolled Steel
 CS: Countersink, Cast Steel, Cast Stone,

Commercial Standard
 CSG: Casing
 CSK: Countersink
 CSMT: Casement
 CSN: Caisson
 CSS: Countersunk Screw
 CSTG: Casting
 CT: Ceramic Tile, Cork Tile,
 Cone Tip (hinges)
 CTD: Coated
 CTR: Center, Counter
 CTSC: Communications Systems Terminal
 Cabinet
 CTSK: Countersunk
 CTWT: Counterweight
 CU: Copper, Cubic, Coefficient of Utilization
 CU. FT.: Cubic Feet
 CU. YD.: Cubic Yard
 CUR: Current
 CV: Check Valve
 CW: Clockwise, Cold Water
 CWP: Circulating Water Pump
 CWR: Condensate Waste Return
 CWS: Condensate Waste Supply
 CY: Cubic Yard, Cycle
 CYL: Cylinder
 CYL L: Cylinder Lock

D: Deep, Depth, Drop, Drain
 D & M: Dressed & Matched
 DA: Double Acting
 DB: Decibel
 DBL: Double
 DBT: Drybulb Temperature
 DC: Direct Current
 DCV: Detector Check Valve
 DD: Driveway Drain, Deck Drain
 DEG: Degree
 DEGC: Degree Celcius
 DEGF: Degree Fahrenheit
 DEM: Demolish
 DEMO: Demolition
 DEP: Dressed
 DEPT: Department
 DET: Detail
 DF: Drinking Fountain
 DH: Double Hung
 DIAG: Diagonal
 DIA: Diameter
 DIAM: Diameter
 DIFF: Diffuser
 DIM: Dimension
 DISL: Disposal
 DISP: Dispenser
 DIV: Division
 DL: Dead Load

DMH: Drop Manhole
 DMT: Demountable
 DN: Down
 DO: Ditto, or Door Opening
 DP: Dampproofing, Dew Point, Distribution Panel
 DPDT: Double Pole Double Throw
 DPST: Double Pole Single Throw
 DPR: Damper
 DR: Door, Drain, Dining Room
 DRBD: Drainboard
 DS: Downspout, Disconnect Switch, Door Switch
 DSP: Dry Standpipe
 DT: Drain Tile
 DTL: Detail
 DVTL: Dovetail
 DW: Dumbwaiter, Distilled Water
 DWG: Drawing
 DWGS: Drawings
 DWL: Dowel
 DWP: Drywall, Painted
 DWR: Drawer
 DS: Downspout
 DSP: Dry Standpipe
 DX: Direct Expansion, Duplex

E: East, Enamel, Exhaust
 E TO E: End to End
 EA: Each
 EB: Expansion Bolt
 EC: Exposed Construction
 ECC: Eccentric
 ECP: Exposed Construction Painted
 EDR: Equivalent Direct Radiation
 EE: Each End
 EF: Each Face
 EFTS: Expanding Foam Tape Sealant
 EG: Edge Grain
 EIFS: Exterior Insulation and Finish System
 EJ: Expansion Joint
 EJECT: Ejector
 EL: Elevation, Elevator
 ELB: Elbow
 ELEC: Electrical
 ELECT: Electrical
 ELEV: Elevator, Elevation
 ELP: Emergency Lighting Panel
 EM: Emergency
 EMER: Emergency
 ENAM: Enamel
 ENCL: Enclosure
 ENG: Engineer
 ENGR: Engineer
 ENJF: Expanded Neoprene Joint Filler
 ENT: Entrance

ENTR: Entrance
 EP: Electrical Panelboard, Explosion Proof
 EPDM: Ethylene Propylene Diene Monomer
 EPJF: Expanded Polyethelene Joint Filler
 EQ: Equal
 EQP: Equipment
 EQPT: Equipment
 EQUIP: Equipment
 ERP: Emergency Receptacle Panel
 ESC: Escalator
 EST: Estimate
 EVAP: Evaporator
 EW: Each Way
 EWC: Electric Water Cooler
 EW & C: Electric Wiring and Communication
 EWH: Electric Water Heater
 EX: Exposed Construction, Exit, Existing
 EXC: Excavate
 EXCAV: Excavate
 EXEC: Executive
 EXG: Existing
 EXH: Exhaust
 EXH AIR: Exhaust Air
 EXIST: Existing
 EXP: Expansion, Exposed
 EXPN: Expansion
 EXPP: Existing Patched and Painted
 EXS: Extra Strong
 EXT: Exterior, Extinguish
 EXTR: Extrude

F: Degrees Fahrenheit, Fuse
 F TO F: Face to Face
 FA: Fire Alarm, Fresh Air
 FAB: Fabricate
 FABR: Fabricate
 FACP: Fire Alarm Control Panel
 FAG: Fire Alarm Gong
 FAO: Finish All Over
 FAR: Floor Area Ratio
 FAST: Fastener, Fasten
 FB: Flat Bar, Face Brick, Floor Box
 FBD: Fiberboard
 FBM: Foot Board Measure
 FBP: Fabric Panel
 FBRK: Fire Brick
 FC: File Cabinet, Foot Candle, Fault Current
 FD: Floor drain
 FDC: Fire Department Connection
 FDN: Foundation
 FDTN: Foundation
 FE: Fire Extinguisher
 FEC: Fire Extinguisher Cabinet
 FF: Far Face, Finished Floor, Factory Finish
 FFE: Finished Floor Elevation
 FF&E: Fixtures, Furnishings & Equipment

FFL: Finished Floor Line
 FGL: Fiberglass
 FGR: Fiberglass reinforced
 FH: Flat Head, Fire Hose
 FHC: Fire Hose Cabinet
 FHMS: Flat head machine screw
 FHR: Fire Hose Rack
 FHS: Fire Hose Station
 FHWS: Flat Head Wood Screw
 FHY: Fire Hydrant
 FIL: Fillet
 FIN: Finish, finished
 FITG: Fitting
 FIX: Fixture
 FIXT: Fixture
 FL: Floor, Fire Line
 FLASH: Flashing
 FLG: Flooring
 FLEX: Flexible
 FLG: Flange, Flashing, Flooring
 FLR: Floor
 FLUOR: Fluorescent
 FLX: Flexible
 FM: Fire Main, Factory Mutual Company
 FND: Feminine Napkin Dispenser, Foundation
 FO: Finished Opening
 FOB: Free On Board
 FOC: Face of Concrete
 FOF: Face of Finish
 FOS: Face of Studs
 FP: Fireproof
 FPL: Fireplace
 FPM: Feet per minute
 FPRF: Fireproof
 FPS: Feet per Second
 FR: Frame, Front, Fire Riser
 FRG: Forged
 FRM: Frame
 FRPF: Fireproof
 FRT: Fire Retardant
 FS: Full Size, Far Side, Federal Standards,
 Fused Switch, Floor Sink
 FSCW: Flush Solid Core Wood
 FT: Foot, Feet, Fully Tempered
 FTG: Footing, Fitting
 FUR: Furred
 FURN: Furnish, Furniture
 FURR: Furring
 FUT: Future
 FVC: Fire Valve Cabinet

 G: Gas, Girder, Gutter, Gram
 GA: Gauge, Gage
 GAGE: Gauge
 GAL: Gallon
 GALV: Galvanized

GB: Grab Bar, Glass Block, Gypsum Board
 GC: General Contractor
 GCMU: Glazed Concrete Masonry Unit
 GD: Guard, Grade, Gutter Drain
 GEN: General, Generator
 GENL: General
 GF: Ground Face
 GFCI: Ground Fault Circuit Interrupted
 GFI: Ground Fault Interrupted
 GFRC: Glass Fiber Reinforced Concrete
 GI: Galvanized Iron
 GKT: Gasket
 GL: Glass
 GL BLK: Glass Block
 GLB: Glass Block
 GLVA: Globe Valve
 GLZ: Glaze
 GMU: Glazed Masonry Unit
 GND: Ground
 GOVT: Government
 GP: Galvanized Pipe
 GPDW: Gypsum Drywall
 GPH: Gallons Per Hour
 GPL: Gypsum Lath
 GPM: Gallons Per Minute
 GPP: Gypsum Plaster Painted
 GPPL: Gypsum Plaster
 GPS: Gallons Per Second
 GR: Grade, Grille, Granite
 GRAN: Granular, Granite
 GRND: Ground
 GRTG: Grating
 GSS: Galvanized Sheet Steel
 GSU: Glazed Structural Unit
 GT: Grout
 GV: Galvanized
 GVA: Gate Valve
 GVL: Gravel
 GYP: Gypsum
 GYP BD: Gypsum Board

 H: High
 HA: Hectare
 HB: Hose Bib
 HBD: Hardboard
 HC: Hollow Core, Handicapped (better called
 Accessible")
 HCT: Hollow Clay Tile
 HD: Head, Heavy Duty
 HDCP: Handicapped (better called "Accessible")
 HDN: Harden
 HDR: Header
 HDW: Hardware
 HDWD: Hardwood
 HDWE: Hardware
 HEX: Hexagonal

HGR: Hanger
 HGT: Height
 HH: Handhole
 HHMB: Hex Head Machine Bolt
 HID: High Intensity Discharge
 HK: Hook or Hooks
 HKD: Hooked (re-bars)
 HL: Hydrant Line
 HM: Hollow Metal
 HMP: Hollow Metal, Painted
 HNCG: Hollow Neoprene Compression Gasket
 HOR: Horizontal
 HORIZ: Horizontal
 HOSP: Hospital
 HP: High Point, High Pressure, Horse Power
 HPS: High Pressure Sodium, High Pressure Steam
 HR: Hour
 HRS: Hot Rolled Steel, Hours
 HS: Heat Strengthened
 HSG: Housing
 HT: Height, Heat, High Tension Duct
 HTG: Heating
 HTR: Heater
 HTW: High Temperature Water
 HV: High Voltage
 HVAC: Heating, Ventilating & Air Conditioning
 HVY: Heavy
 HW: Hot Water, Heavy Wall
 HWC: Hot Water Circulating, Heavy Wall Conduit
 HWD: Hardwood
 HWH: Hot Water Heater
 HWR: Hot Water Recirculating Return
 HWS: Hot Water Supply
 HWY: Highway
 HYD: Hydraulic
 HYDRO: Hydrostatic
 HZ: Hertz (Cycles Per Second)

I: Iron, Current (electrical)
 IBV: Indicating Butterfly Valve
 IC: Interrupting Capacity
 ID: Inside Diameter
 IE: Invert Elevation
 ILK: Interlock
 IMH: Inlet Manhole
 IN: Inch
 INC: Incandescent
 INCAND: Incandescent
 INCIN: Incinerator
 INCL: Incline, Include
 INCR: Increase
 INFO: Information
 INS: Insulate, Insulation
 INSP: Inspect

INSTL: Install
 INSUL: Insulation
 INT: Interior, Internal
 INTERM: Intermediate
 INTM: Intermediate
 INV: Invert
 IP: Iron Pipe
 IPS: Iron Pipe Size
 IW: Indirect Waste
 IWB: Interactive White Board

J: Joist
 J-BOX: Junction Box
 JAN: Janitor
 JB: Junction Box
 JC: Janitor's Closet
 JCT: Junction
 JF: Joint Filler
 JST: Joist
 JT: Joint

K: Kilopound (1000 pounds), Kelvin (temperature)
 KAL: Kalamein
 KCP: Keene's Cement Plaster
 KG: Kilogram
 KIP: Kilopound (1000 pounds)
 KIT: Kitchen
 KM: Kilometer
 KO: Knockout
 KP: Kickplate
 KPL: Kickplate
 KS: Kitchen Sink
 KVA: Kilovolt-Ampere
 KW: Kilowatt
 KWH: Kilowatt Hour
 KWHR: Kilowatt Hour

L: Angle, Left, Length, Lighting Panel, Long, Line
 LA: Landscape Architect, Lightning Arrester
 LAB: Laboratory, Labor
 LAD: Ladder
 LAM: Laminate, Laminated
 LAT: Lateral
 LAV: Lavatory
 LB: Pound (weight), Lag Bolt
 LBL: Label
 LBR: Lumber
 LC: Light Control, Lead Covered
 LCD: Liquid Crystal Diode
 LCL: Linen Closet
 LCM: Lead Coated Metal
 LD: Leader Drain
 LH: Left Hand

LIB: Library
 LIBR: Library
 LIN: Linear
 LINO: Linoleum
 LIQ: Liquid
 LKR: Locker
 LL: Live Load
 LMS: Limestone
 LN: Length
 LNDG: Landing
 LNTL: Lintel
 LOC: Locate
 LOCS: Locations
 LP: Low Point, Low Pressure, Lighting Panel,
 Light Proof
 LPS: Low Pressure Sodium, Low Pressure
 Steam
 LR: Living Room
 LS: Limestone, Loud Speaker
 LT: Light, Low Tension Duct, Laundry Tray
 LTG: Lighting
 LTL: Lintel
 LT WT: Lightweight
 LV: Low Voltage
 LVR: Louver
 LW: Light Weight
 LWC: Light Weight Concrete
 LWDP: Louvered Wood Door, Painted

M: Meter, Motor, Thousand (brick), Bending
 Moment
 MACH: Machine
 MAINT: Maintenance
 MAN; Manual
 MAR: Marble
 MARB: Marble
 MAS: Masonry
 MAT: Material
 MATL: Material
 MAX: Maximum
 MB: Mail Box, Machine Bolt, Mop Basin
 MC: Medicine Cabinet, Mineral Core
 MCC: Motor Control Center
 MCM: Thousand Circular Mills (electrical wire
 size)
 ME: Mechanical Engineer
 MECH: Mechanical
 MED: Medium
 MED CAB: Medicine Cabinet
 MEMB: Membrane
 MERC: Mercury Vapor
 MET: Metal
 MEZZ: Mezzanine
 MFD: Manufactured, Metal Floor Deck
 MFG: Manufacturer, Manufacturing

MFR: Manufacture, Manufacturer
 MH: Manhole
 MHO: Magnetic Hold-Open
 MI: Malleable Iron, Miles
 MIKE: Microphone
 MIN: Minimum
 MIR: Mirror
 MISC: Miscellaneous
 MK: Mark
 ML&P: Metal Lath & Plaster
 MLD: Molding
 MLDG: Molding
 MM: Millimeter
 MMB: Membrane
 MO: Masonry Opening
 MOD: Module
 MONO: Monolithic
 MOV: Movable
 MP: Metal Acoustal Panel
 MPS: Medium Pressure Steam
 MR: Mop Receptor
 MRD: Metal Roof Deck
 MT: Mount, Mounted
 MTD: Mounted
 MTL: Material, Metal
 MTR: Motor
 MUL: Mullion
 MULL: Mullion
 MV: Mercury Vapor
 MWP: Maximum Working Pressure
 MWK: Millwork

N: North, Nitrogen
 NAP: Napkin
 NAT: Natural
 NATL: Natural
 NB: "Nota Bene" Latin phrase for "Take Special
 Note"
 NC: Normally Closed, Noise Criteria
 NEC: National Electrical Code
 NEUT: Neutral
 NF: Near Face
 NFWH: Non-freeze Wall Hydrant
 NI: Nickel
 NIC: Not In Contract
 NK: Neck
 NMT: Non-Metallic
 NO: Number, Normally Open
 NOM: Nominal
 NR: Noise Reduction
 NRC: Noise Reduction Coefficient
 NRP: Non-Removable Pin
 NRS: Non Rising Steam Valve
 NS: Near Side
 NTS: Not To Scale

O: Oxygen
 O TO O: Out to Out
 OA: Outside Air, Overall
 OB: Obscure
 OBS: Obscure
 OC: On Center
 OD: Outside Diameter
 OF: Outside Face
 OFF: Office
 OH: Overhead
 OHD: Overhead Door
 OHMS: Oval Head Machine Screw
 OHWS: Oval Head Wood Screw
 OI: Ornamental Iron
 OP: Opaque
 OPG: Opening
 OPNG: Opening
 OPP: Opposite
 OPP H: Opposite Hand
 OR: Outside Radius
 ORN: Ornamental
 OSD Open Sight Drain
 OS&Y: Outside Screw & Yoke (valve)
 OUT: Outlet
 OVFL: Overflow
 OW: Open Waste
 OZ: Ounce

P. CONC.: Polished Concrete
 P: Pitch, Power Panel, Paint
 P. LAM: Plastic Laminate
 P SL: Pipe Sleeve
 PA: Public Address
 PAF: Powder Actuated Fasteners
 PAR: Parallel
 PARTN: Partition
 PASS: Passage, Passenger
 PB: Pull Box, Push Button, Panic Bar
 PBD: Particle Board
 PBMT: Preshimmed Butyl Mastic Sealant Tape
 PB STA: Push Button Station
 PC: Pull Chain, Piece, Precast Concrete
 PCF: Pounds per cubic foot
 PCPL: Portland Cement Plaster
 PD: Pump Discharge, Plaza Drain
 PDP: Paneled Door, Painted
 PE: Porcelain Enamel, Professional Engineer
 PED: Pedestal, Pedestrian
 PERF: Perforate, Performance
 PERIM: Perimeter
 PERP: Perpendicular
 PFN: Prefinished
 PG: Pressure Gauge
 PH: Phase, Preheat, Phone
 PIV: Pivoted, Post Indicator Valve
 PJF: Preformed Joint Filler

PKG: Parking
 PKWY: Parkway
 PL: Plate, Plan, Property Line, Plastic Laminate, Plastic
 PLAS: Plaster, Plastic
 PLAS LAM: Plastic Laminate
 PLBG: Plumbing
 PLF: Pounds Per Lineal Foot
 PLG: Plumbing
 PLMBG: Plumbing
 PLTF: Platform
 PLWD: Plywood
 PLYWD: Plywood
 PLUMB: Plumbing
 PNEU: Pneumatic
 PNL: Panel
 PNT: Paint
 POL: Polish, Polished
 PORC: Porcelain
 PORT: Portable
 POT W: Potable Water
 PP: Plaster, Painted, Power Panel, Precast Panel
 PR: Pair
 PRC: Precast
 PRCST: Precast
 PRE: Prefinished
 PREFAB: Prefabricated
 PRES: Pressure
 PRESS: Pressure
 PRF: Preformed
 PRFMD: Preformed
 PRI: Primary
 PRMLD: Premolded
 PROT: Protection, Protective
 PRSTR: Prestressed
 PRTN: Partition
 PRV: Pressure Reducing Valve
 PS: Plumbing Stack
 PSC: Prestressed Concrete
 PSF: Pounds per square foot
 PSI: Pounds per square inch
 PSIG: Pounds per square inch gage
 PT: Paint, Point, Part, Potential Transformer
 PTC: Post-Tensioned Concrete
 PTD: Painted, Paper Towel Dispenser
 PTD/R: Combination Paper Towel Dispenser/Receptacle
 PTN: Partition
 PTR: Paper Towel Receptacle
 PV: Paving
 PVC: Polyvinyl Chloride
 PVF: Polyvinylidene Finish
 PVG: Paving
 PVMT: Pavement
 PVT: Private

PW: Pass Window

PWR: Power

QUAL: Quality

QUANT: Quantity

QT: Quarry Tile, Quart

QTR: Quarter

QTY: Quantity

R: Riser, Radius, Resistance, Relay Panel

R & S: Rod and Shelf

RA: Return Air, Registered Architect

RAD: Radius, Radiator

RADN: Radian

RB: Rubber, Rubber Base, Resilient Base

RBC: Rubber Base (Coved),

Rubberized Bituminous Compound

RBS: Rubber Base (Straight)

RBT: Rabbet

RCF: Raised Computer Floor

RCP: Reflected Ceiling Plan, Reinforced
Concrete PipeRD: Roof Drain, Round, Receptacle Distribution
Panel

REBAR: Reinforcing Bar

REC: Receiver

RECEP: Receptacle

RECP: Receptacle

RED: Reducer

REF: Refer, Reference, Refrigerator

REFL: Reflected, Reflector

REFR: Refrigerate, Refrigerator

REG: Register, Regular

REINF: Reinforcement, or Reinforce

REM: Remove, Removable

REQ: Require, Required

REQD: Required

RES: Resilient

RESIL: Resilient

REST: Resistance

RET: Return, Retaining

RETG: Retaining

REV: Reverse, Revise, Revision

REV DR: Revolving Door

RF: Roof

RFG: Roofing

RGTR: Register

RGH: Rough

RGH OPNG: Rough Opening

RH: Right Hand, Reheat, Relative Humidity

RHC: Reheat Coil

RHMS: Round Head Machine Screw

RHR: Right Hand Reverse, Reheater

RHWS: Round Head Wood Screw

RL: Roof Ladder

RM: Room

RMV: Remove

RN: Riser Nipple

RO: Rough Opening

ROB: Rod Out Basin

ROW: Right of Way

RPM: Revolutions Per Minute

RPT: Repeat (like "Ditto")

RR: Railroad

RT: Rubber Tile, Right

RTR/RR Rubber Tread/Rubber Riser

RVS: Reverse Side

RVT: Rivet

RW: Redwood

RWC: Rain Water Conductor

RWD: Redwood

RWL: Rain Water Leader

S: South, Sealant, Supply, Sink

S4S: Surfaced 4 Sides

S&M: Surfaced & Matched

S&S: Stained & Sealed

S&V: Stain & Varnish

SACT: Suspended Acoustical Tile

SALV: Salvage

SAN: Sanitary

SB: Setting Basin, Splash Block

SC: Solid Core, Short Circuit, Self Closing, Sill
Cock

SCD: Seat Cover Dispenser

SCFT: Structural Clay Facing Tile

SCH: Schedule

SCHED: Schedule

SCR: Screen

SCUP: Scupper

SCWD: Solid Core Wood

SD: Soap Dispenser

SE: Structural Engineer

SEAL: Sealant

SEC: Second, Section, Secondary, Security
System

SECT: Section

SECY: Secretary

SED: Sewage Ejector Discharge

SEL: Select

SERV: Service

SEV: Sewage Ejector Vent

SF: Square Foot

SFGL: Safety Glass

SGG: Structural Glazing Gasket

SGS: Silicone Glazing Sealant

SH: Shelf, Sheet, Shower

SHR: Shower

SHT: Sheet

SHTH: Sheathing

SHTHG: Sheathing

SHWR: Shower

SIG: Signal
 SIM: Similar
 SJS: Silicone Joint Sealant
 SK: Sink
 SKL: Skylight
 SL: Siamese Line
 SLOT: Slotted
 SLV: Sleeve
 SND: Sanitary Napkin Dispenser
 SNGG: Sponge Neoprene Glazing Gasket
 SNR: Sanitary Napkin Receptacle
 SNT: Sealant
 SP: Soil Pipe, Standpipe, Soundproof, Single Pole
 SPC: Spacer
 SPD: Sump Pump Discharge
 SPDT: Single Pole Double Throw
 SPEC: Specification, Specifications
 SPECS: Specifications
 SPK: Speaker
 SPL: Special
 SPLR: Sprinkler
 SPM: Sprinkler Main
 SPP: Skim Coat Plaster Painted
 SPST: Single Pole Single Throw
 SQ: Square
 SS: Stainless Steel, Set Screw, Soil Stack, Service Sink, Slop Sink
 SSD: Sub-soil Drain
 SSGS: Silicone Structural Glazing Sealant
 SSK: Service Sink
 SSS: Silicone Sanitary Sealant
 SST: Stainless Steel
 ST: Straight, Storm Water
 STA: Station
 STC: Sound Transmission Class
 STD: Standard
 STG: Storage, Seating
 STGG: Structural Glazing Gasket
 STGR: Stagger
 STIFF: Stiffener
 STK: Stack
 STL: Steel
 STM: Steam
 STO: Storage
 STOR: Storage
 STP: Standard Temperature & Pressure, Standpipe
 STR: Straight (re-bars), Strainer, Structural, Starter
 STRL: Structural
 STRT: Straight
 STRUC: Structural
 STRUCT: Structural
 ST W: Storm Water
 STWY: Stairway
 SUCT: Suction

SUPP: Supplementary, Supplement
 SUPT: Superintendent
 SUR: Surface
 SUSP: Suspended, Suspend
 SV: Safety Relief Valve
 SW: Switch
 SWBD: Switchboard
 SWGR: Switchgear
 SY: Square Yard
 SYM: Symmetrical
 SYN: Synthetic
 SYS: System

 T: Tread, Thermostat, Tee
 T/: Top
 T&B: Top and Bottom
 T&G: Tongue & Groove
 T&P: Temperature & Pressure Relief Valve
 TAN: Tangent
 TB: Towel Bar
 TC: Top of Curb, Terracotta
 TCLO: Telephone Closet
 TCS: Terne Coated Stainless Steel
 TD: Trench Drain
 TEL: Telephone
 TEL CL: Telephone Closet
 TEMP: Temporary, Tempered, Temperature
 TEN: Tenant
 TER: Terrazzo
 TERR: Terrazzo
 TERM: Terminal
 TGL: Toggle
 TH: Thermostat
 THK: Thick, Thickness
 THKNS: Thickness
 THR: Threshold
 THRESH: Threshold
 THRM: Thermal
 THRMST: Thermostat
 THRU: Through
 TKBD: Tackboard
 TL: Twist Lock (receptacle)
 TLT: Toilet
 TOL: Tolerance
 TP: Top of Pavement
 TPD: Toilet paper Dispenser
 TPH: Toilet Paper Holder
 TPTN: Toilet Partition
 TR: Tread, Transom
 TRANS: Transformer, Translucent
 TRAV: Travertine
 TRD: Tread
 TS: Time Switch
 TSL: Top of Slab
 TST: Top of Steel
 TSTAT: Thermostat

TT: Terrazzo Tile, Traffic Topping
 TTC: Telephone Terminal Closet
 TV: Television
 TW: Top of Wall, Thin Wall (conduit), Tempered Water
 TYP: Typical
 TZ: Terrazzo

UC: Undercut
 UH: Unit Heater
 UL: Underwriters' Laboratories
 UNEX: Unexcavated
 UNEXC: Unexcavated
 UNF: Unfinished
 UNFIN: Unfinished
 UNO: Unless Noted Otherwise
 UON: Unless Otherwise Noted
 UP: Unpainted
 UR: Urinal
 USG: United States Gauge, United States Gypsum Company
 USS: United States Standard
 UT: Utility

V: Volt, Valve, Vinyl, Vent, Ventilator
 VA: Volt Ampere
 VAC: Vacuum
 VACBR: Vacuum Breaker
 VAR: Varnish, Varies
 VAT: Vinyl Asbestos Tile
 VB: Vapor Barrier, Valve Box, Vinyl Base, Vacuum Breaker
 VBC: Vinyl Base (Coved)
 VBS: Vinyl Base (Straight)
 VC: Varnished Cambric
 VCP: Vitrified Clay Pipe
 VCT: Vinyl Composition Tile
 VENT: Ventilate, Ventilator
 VERT: Vertical
 VEST: Vestibule
 VF: Vinyl Fabric
 VFGT: Vinyl Foam Glazing Tape
 VIF: Verify In the Field
 VIN: Vinyl
 VIT: Vitreous
 VLT: Vault
 VNR: Veneer
 VOL: Volume
 VP: Vapor Proof, Vent Pipe

VR: Vapor Retarder, Vacuum Return, Vertical Riser
 VRM: Vermiculite
 VS: Vent Stack
 VT: Vinyl Tile
 VTR: Vent Through Roof
 VWC: Vinyl Wall Covering

W: West, Width, Wide, Watt, Waste, Water, Water Main
 W/: With
 W/O: Without
 W&M: Washburn & Moen Gauge
 WAINS: Wainscot
 WB: Wood Base
 WC: Watercloset
 WD: Wood
 WDP: Wood, Painted
 WDSS: Wood, Stained & Sealed
 WDW: Window
 WF: Wide Flange (structural steel)
 WFS: Water Flow Switch
 WG: Wired Glass
 WGL: Wire-Glass
 WH: Water Heater, Wall Hung, Wall Hydrant
 WI: Wrought Iron
 WIN: Window
 WM: Wire Mesh, Water Meter
 WP: Waterproof, Working Point, Working Pressure, Weatherproof
 WPR: Waterproofing
 WPT: Working Point
 WR: Water Resistant, Water Repellant, Waste Receptacle
 WRSTP: Weatherstripping
 WS: Weatherstripping, Water Stop
 WSCT: Wainscot
 WT: Weight, Water Table, Watertight
 WVNR: Wood Veneer
 WW: Window Wall
 WWF: Welded Wire Fabric

XH: Extra Heavy
 X HVY: Extra Heavy
 X STR: Extra Strong

YD: Yard
 YR: Year

END OF ABBREVIATIONS

TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Temporary utilities.
- B. Temporary Heating and Ventilation
- C. Temporary telecommunications services.
- D. Temporary sanitary facilities.
- E. Barriers, enclosures, and fencing.
- F. Security requirements.
- G. Vehicular access and parking.
- H. Waste removal facilities and services.
- I. Field offices

1.2 RELATED REQUIREMENTS

- A. Section 01 1000 Summary of Work: Contractor use of premises

1.3 QUALITY ASSURANCE

- A. Comply with industry standards and applicable laws and regulations of authorities having jurisdiction.

1.4 TEMPORARY UTILITIES

- A. Electrical power is available in the space for light service. Welders and other large equipment shall be run from generators at Contractor's own expense. Contractor shall make immediate repairs of any damage to the electrical system resulting from this use. Contractor to provide and pay for all other electrical power, lighting, water, gas, heating and cooling, and ventilation required for construction purposes.
- B. At no time during the course of construction may existing services or utilities be compromised or eliminated for any duration except as expressly permitted on an individual basis by the Owner. Requests for temporary shut-down of services must be presented a minimum of 72 hours prior to the event. For all shut-downs during operating hours and where deemed necessary by the Owner, alternate services are to be provided at the expense of the Contractor.
- C. New permanent facilities may not be used for construction related activities.

1.5 TEMPORARY HEATING AND VENTILATION

- A. Contractor shall ventilate all Work areas as necessary to eliminate excessive dust, humidity and condensation. Power ventilation using temporary equipment, temporary ducts, etc. as necessary to provide a physical environment suitable to installation of all required materials and systems. Contractor shall protect Owner's systems from dust and damage.
- B. Existing firm gas may be used provided that the Contractor works with the utility provider to determine that there is sufficient capacity without compromising the building during times of most extreme need. If conditions allow the Contractor access to firm gas, the Contractor is to provide a meter at their own expense and pay for the gas and all costs related to set-up and use.

1.6 TELECOMMUNICATIONS SERVICES

- A. Provide, maintain, and pay for telecommunications services to field office at time of project mobilization.

- B. Telecommunications services shall include:
 - 1. Personal computer dedicated to project telecommunications, with necessary software and printer.
 - 3. Internet Connections: Minimum of one.
 - 4. Email: Account/address reserved for project or Project Superintendent use.

1.7 TEMPORARY SANITARY FACILITIES

- A. Existing facilities within the space may be used as long as it is maintained in clean, undamaged condition. Restrooms shall be cleaned on a weekly basis or more depending on need. Any damage is to be repaired immediately by the Contractor.
- B. Maintain in clean and sanitary condition.

1.8 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public, to allow for owner's use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
 - 1. Provide a 8-foot minimum high chain link fence with support posts at 10 foot maximum spacing around exterior areas used for construction and/or storage of materials or equipment.
- B. Provide barricades and covered walkways required by governing authorities for public rights-of-way, for egress from the existing building and for public access to/from existing building.
 - 1. Provide a clear path and a gate with code compliant exit device through construction site/fence as required by Owner and/or local governing authority if necessary to maintain code-required access/egress.
- C. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.
- D. The Contractor shall at all times provide safe and satisfactory means for the workers, the Architect/Engineer and Owner's inspection of the work. The Contractor shall cover or enclose all openings through floor slabs, etc. with a railing.

1.9 EXISTING BUILDING EGRESS

- A. The existing building will be occupied throughout the Project duration. Life-safety and exiting systems must be maintained throughout the duration of the Project. If Work is to take place near required exit doors, full egress must be maintained as required based on the Occupancy of the building during times of that portion of the Work.
- B. The drawings may indicate certain walls, doors and other items to be provided to aid with protection of occupied spaces and egress. These are not intended to be comprehensive of all barrier and egress protection required. All means of protecting existing spaces and allowing for egress must be confirmed with the authorities having jurisdiction over the project, and any additional efforts required by these authorities must be included in the work.

1.10 CONTINUITY OF UTILITY SERVICES

- A. Except as specifically identified in Divisions 22 – 26 of the Project Manual, the Work shall be executed in such a way as to maintain uncompromised continuity of all utility services to all parts of the existing building and property.

1.11 INTERIOR ENCLOSURES

- A. Provide temporary closures as required to separate work areas from areas outside the project limits, to prevent penetration of dust and moisture into areas outside the project limits, and to prevent damage to existing materials and equipment.
- B. Construction: Stud framing with gypsum board on each side and full depth batt insulation. Provide closed joints and sealed edges at intersections with existing surfaces:

1. STC rating of 35 in accordance with ASTM E90.
2. Maximum flame spread rating of 75 in accordance with ASTM E84.

1.12 SECURITY

- A. Provide security and facilities to protect Work, and Owner's operations from unauthorized entry, vandalism, or theft.
- B. Coordinate with Owner's security program.

1.13 VEHICULAR ACCESS AND PARKING

- A. Coordinate access and haul routes with Owner.
- B. Provide and maintain access to fire hydrants, free of obstructions.
- C. Coordinate parking areas to accommodate construction personnel. Construction personnel shall not park within 100 feet of a mall entrance.

1.14 WASTE REMOVAL

- A. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.
- B. Dumpsters will not be allowed on the street or Main Entry side of the building. All dumpsters are to be positioned to the side or rear of the building. Provide containers with lids. Remove trash from site periodically.
- C. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.

1.15 MAINTENANCE OF CONSTRUCTION AREA

- A. Maintain the construction site and project area to prevent the impact of weather. Snow removal and other maintenance needs within the project area and construction site are the responsibility of the Contractor.

1.16 NOT USED

1.17 FIELD OFFICES

- A. Office: Weathertight, with lighting, electrical outlets, heating, cooling equipment, and equipped with sturdy furniture, drawing rack and drawing display table.
- B. Provide space for Project meetings, with table and chairs to accommodate 6 persons.
- C. A temporary enclosure shall be used to store materials subject to damage or theft and shall be kept locked.

1.18 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities, materials, prior to Substantial Completion inspection.
- B. Clean and repair damage caused by installation or use of temporary work.
- C. Restore new permanent facilities used during construction to specified condition.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

PRODUCT REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. General product requirements.
- B. Existing products.
- C. Transportation, handling, storage and protection.
- D. Product option requirements.
- E. Substitution limitations and procedures.
- F. Maintenance materials, including extra materials, spare parts, tools, and software.

1.2 RELATED REQUIREMENTS

- A. Document 00 7300 - Supplementary Conditions: Substitution of Materials - Product options and substitution procedures prior to bid date.\

1.3 REFERENCE STANDARDS

- A. GreenSeal GS-36 - Commercial Adhesives; Green Seal, Inc.; 2000.
- B. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.4 SUBMITTALS

- A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- B. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- C. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
 - 1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

PART 2 PRODUCTS

2.1 EXISTING PRODUCTS

- A. Unforeseen historic items encountered remain the property of the Owner; notify Owner promptly upon discovery; protect, remove, handle, and store as directed by Owner.
- B. Reused Products: Reused products include materials and equipment previously used in this or other construction, salvaged and refurbished as specified.
- C. Specific Products to be Reused: The reuse of certain materials and equipment already existing on the project site is encouraged.
 - 1. See Section 01 1000 for list of items required to be salvaged for reuse and relocation.
 - 2. If reuse of other existing materials or equipment is desired, submit substitution request.

2.2 NEW PRODUCTS

- A. Provide new products unless specifically required or permitted by the Contract Documents.

- B. Do not use products having any of the following characteristics:
 - 1. Made outside the United States, its territories, Canada, or Mexico.
 - 2. Made using or containing CFC's or HCFC's.
 - 3. Product or shipping containers knowingly containing asbestos.
- C. Where all other criteria are met, Contractor shall give preference to products that:
 - 1. Are extracted, harvested, and/or manufactured closer to the location of the project.
 - 2. Have longer documented life span under normal use.
 - 3. Result in less construction waste.
- E. Urea-Formaldehyde Prohibition:
 - 1. Overall Project Requirement: Provide composite wood and agrifiber products having no added urea-formaldehyde resins.
 - a. Require each installer to certify compliance and submit product data showing product content.
 - 2. Specific Product Categories: Comply with limitations specified elsewhere.
- F. Adhesives and Joint Sealants:
 - 1. Definition: This provision applies to gunnable, trowelable, and liquid-applied adhesives, sealants, and sealant primers used anywhere on the interior of the building inside the weather barrier, including duct sealers.
 - 2. Provide only products having lower volatile organic compound (VOC) content than required by South Coast Air Quality Management District Rule No.1168.
 - a. Require each installer to certify compliance and submit product data showing product content.
 - 3. Specific Product Categories: Comply with limitations specified elsewhere.
- G. Aerosol Adhesives:
 - 1. Provide only products having lower volatile organic compound (VOC) content than required by GreenSeal GS-36.
 - a. Require each installer to certify compliance and submit product data showing product content.
 - 2. Specific Product Categories: Comply with limitations specified elsewhere.

2.3 PRODUCT OPTIONS

- A. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.
- B. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

2.4 MAINTENANCE MATERIALS

- A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification sections.
- B. Deliver to Project site; obtain receipt prior to final payment.

PART 3 EXECUTION

3.1 SUBSTITUTION PROCEDURES

- A. Architect will consider requests for substitutions only within 30 days after date of Agreement.
- B. Substitutions after award of contract may be considered only when a product becomes unavailable through no fault of the Contractor.
- C. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.

- D. A request for substitution constitutes a representation that the submitter:
 - 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
 - 2. Will provide the same warranty for the substitution as for the specified product.
 - 3. Will coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.
 - 4. Waives claims for additional costs or time extension that may subsequently become apparent.
 - 5. Will reimburse Owner and Architect for review or redesign services associated with re-approval by authorities.
- E. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.
- F. Whenever any article or any material is specified by a reference to a name of any manufacturer or dealer, or by specific reference to catalogues of any manufacture or dealer, intent is to establish a standard of excellence which the Architect/Engineer and Owner have determined upon as requisite and necessary for this project, and subject only therefore to such modifications as the Architect/Engineer and Owner may make in accordance with the procedure given in this article. It is therefore mandatory and binding upon bidders to abide within the limits of the restrictions imposed.
- G. Where words "or equal", "as selected", "approved", "approved make", "alternate", or other synonymous terms are used in reference to material, quality, methods or apparatus in lieu of or in addition to other specific references, it is to be distinctly understood that approval of any such substitutions is vested in the Architect/Engineer whose decision shall be final.

3.2 TRANSPORTATION AND HANDLING

- A. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
- B. Transport and handle products in accordance with manufacturer's instructions.
- C. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.
- D. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
- E. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.
- F. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.3 STORAGE AND PROTECTION

- A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication.
- B. Store and protect products in accordance with manufacturers' instructions.
- C. Store with seals and labels intact and legible.
- D. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.
- E. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.

- F. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
- G. Prevent contact with material that may cause corrosion, discoloration, or staining.
- H. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- I. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.
- J. The Contractor and each subcontractor shall be responsible for and shall take such precautions as are necessary to adequately protect from damage or deterioration and to safeguard from theft or pilferage all materials, tools and equipment pertaining to the Contractor's work which are on site of building, whether stored or incorporated in the structure.

END OF SECTION

EXECUTION

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Examination, preparation, and general installation procedures.
- B. Laying out the work.
- C. Protection of completed work.
- D. Cutting and Patching
- E. Maintaining acceptable project/site conditions
- F. Installation of Products and Systems

1.2 RELATED REQUIREMENTS

- A. Section 01 3000 – Project Management and Coordination: Submittals procedures.
- B. Section 01 4000 - Quality Requirements: Testing and inspection procedures.
- C. Section 01 7400 - Quality Requirements: Cleaning
- D. Section 01 7700 - Closeout: Project record documents, operation and maintenance data, warranties and bonds.

1.3 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Not used
- C. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
 - 1. Structural integrity of any element of Project.
 - 2. Integrity of weather exposed or moisture resistant element.
 - 3. Efficiency, maintenance, or safety of any operational element.
 - 4. Visual qualities of sight exposed elements.
 - 5. Work of Owner or separate Contractor.

1.4 NOT USED

1.5 PROJECT CONDITIONS

- A. Not used
- B. Not used
- C. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
- D. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.
- E. Not used
- F. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.
- G. Pest and Rodent Control: Provide methods, means, and facilities to prevent pests and insects from damaging the work.
- H. Rodent Control: Provide methods, means, and facilities to prevent rodents from accessing or invading premises.

- I. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations. Comply with federal, state, and local regulations.

1.6 COORDINATION

- A. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- B. Notify affected utility companies and comply with their requirements.
- C. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- D. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- E. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- F. Coordinate with Owner provided work and with Owner's vendors for HVAC system balancing, water treatment, Voice/Data modifications, Furniture, etc.
- G. Coordinate completion and clean-up of work of separate sections.
- H. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

PART 2 PRODUCTS

2.1 PATCHING MATERIALS

- A. New Materials: Where specified in product sections, use materials identified on those sections; Where existing materials are added to, modified or compromised, match existing products and work for patching and extending work.
- B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.
- C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 00 7300.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that existing conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
- B. Examine and verify specific conditions described in individual specification sections.
- C. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.
- D. Verify that utility services are available, of the correct characteristics, and in the correct locations.
- E. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means

acceptance of existing conditions.

3.2 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.3 LAYING OUT THE WORK

- A. Verify locations of reference points prior to starting work.
- B. Promptly notify Architect of any discrepancies discovered.
- C. Contractor shall locate and protect reference points.
- D. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
 - 1. Grid or axis for structures.
 - 2. Building foundation, column locations, ground floor elevations.
- E. Periodically verify layouts by same means.
- F. Maintain a complete and accurate log of layout work as it progresses.

3.4 GENERAL INSTALLATION REQUIREMENTS FOR ALL PRODUCTS AND SYSTEMS

- A. Install products as specified in individual sections, in full accordance with manufacturer's instructions and recommendations, as defined within individual Specification Sections and so as to avoid waste due to necessity for replacement.
- B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
- C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
- D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
- E. Make neat transitions between different surfaces, maintaining texture and appearance.

3.5 CUTTING AND PATCHING

- A. Whenever possible, execute the work by methods that avoid cutting or patching.
- B. Perform whatever cutting and patching is necessary to:
 - 1. Complete the work.
 - 2. Fit products together to integrate with other work.
 - 3. Provide openings for penetration of mechanical, electrical, and other services.
 - 4. Match work that has been cut to adjacent work.
 - 5. Repair areas adjacent to cuts to required condition.
 - 6. Repair new work damaged by subsequent work.
 - 7. Remove samples of installed work for testing when requested.
 - 8. Remove and replace defective and non-conforming work.
- C. Execute cutting and patching to complete the work, to uncover work in order to install improperly sequenced work, to remove and replace defective or non-conforming work, to remove samples of installed work for testing when requested, to provide openings in the work for penetration of mechanical and electrical work, to execute patching to complement adjacent work, and to fit products together to integrate with other work.

- D. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing.
- E. Employ skilled and experienced installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.
- F. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
- G. Restore work with new products in accordance with requirements of Contract Documents.
- H. Fit work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- I. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 07 8400, to full thickness of the penetrated element.
- J. Patching:
 - 1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
 - 2. Match color, texture, and appearance.
 - 3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.
- K. Refinish surfaces to match adjacent finish. For continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
- L. Make neat transitions. Patch work to match adjacent work in texture and appearance. Where new work abuts or aligns with existing, perform a smooth and even transition.

3.6 PROTECTION OF INSTALLED WORK

- A. Protect installed work from damage by construction operations.
- B. Provide special protection where specified in individual specification sections.
- C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- F. Remove protective coverings when no longer needed; reuse or recycle plastic coverings if possible.

END OF SECTION

CLEANING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Cleaning during construction.
- B. Final Cleaning.

1.2 RELATED REQUIREMENTS

- A. Individual Product Sections: Specific requirements for cleaning and protection.

PART 2 PRODUCTS

2.1 CLEANING MATERIALS

- A. Use only cleaning materials recommended by manufacturer of surface to be cleaned.

PART 3 EXECUTION

3.1 DURING CONSTRUCTION

- A. From the time work is begun until the Contract is completed, the Contractor shall have care, custody and control of the premises, subject to rights of the Owner. The Contractor shall maintain all of the work areas on the premises in first-class condition during term of operations under this Contract. The Contractor shall be responsible for his/her debris and waste and shall not allow rubbish or waste material to accumulate on or about the premises.
- B. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury
- C. Do not throw waste material and rubbish down from upper levels.
- D. Hammer in or bend over flush with the wood protruding nails in boards, planks, timbers, etc before disposing of them.
- E. Dispose of hazardous wastes in accordance with applicable laws and regulations.
- F. Promptly remove from the work area all waste materials and rubbish resulting from the performance of the work. Clean up on a day-to-day basis throughout the construction period.
- G. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
- H. Perform continuous clean-up of flammable debris to prevent accumulation.
- I. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.

3.2 FINAL CLEANING

- A. Leave all surfaces broom clean and ready for final cleaning unless otherwise required by the Specifications.
- B. The General Contractor will arrange for professional cleaners or experienced workers for other final cleaning, to remove dust, dirt, finger prints and labels from sight exposed interior and exterior surfaces and to polish glossy surfaces to a clear shine. Remove putty and paint from all glass and

wash and polish all glass surfaces. Replace at his own expense, all damaged, broken or scratched glass. Remove all marks, stains, soil or dirt from all painted or decorated work. Clean and polish all hardware. Remove all foreign matter from finished surfaces. Clean all fixtures and equipment to restore it to the original finish. Clean all graded areas of the site.

- C. At Completion of the Work promptly remove tools, equipment, machinery, and surplus materials from the Project site.
- D. If air handling equipment is operated during construction, filters for air handling equipment shall be replaced or thoroughly cleaned according to manufacturer's instructions, by the Heating and Ventilating Contractor. Refer to the Mechanical Specifications for additional requirements.
- E. The electrical subcontractor shall wash, vacuum, dust or otherwise clean light fixtures and other electrical work in finished spaces as necessary to remove all stains, dust and dirt. Other electrical equipment in mechanical rooms, transformer vaults, switch gear rooms, and similar unfinished spaces shall be left "broom clean". Burned out lamps shall be replaced.
- F. The Work shall be maintained in a clean condition until the Architect determines that the Project is substantially complete.

END OF SECTION

CLOSEOUT PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Starting of systems and equipment.
- B. Demonstration and instruction of Owner personnel.
- C. Closeout procedures, except payment procedures.
- D. General requirements for maintenance service.
- E. Demonstration and instruction for Owner's personnel.
- F. Project Record Documents.
- G. Operation and Maintenance Data.
- H. Warranties and bonds.
- I. Progress Photos
- J. Daily Log of Construction
- K. Documentation of all project RFI's, ASI's and reviewed Submittals
- L. Submittal of all Lien waivers from Contractor, all Subcontractors and Suppliers
- M. Submittal of IC-134's from Contractor and Subcontractors
- N. Submittal of Payroll Reports from Contractor and all Subcontractors

1.2 RELATED REQUIREMENTS

- A. Section 01 3000 - Administrative Requirements: Submittals procedures.
- B. Individual Product Sections: Specific requirements for operation and maintenance data.
- C. Individual Product Sections: Warranties required for specific products or Work.

1.3 SUBMITTALS

- A. All submittals are to be provided in two sets of bound paper copies (plus a warranty binder) and one electronic copy. Submit electronic files via USB drive, Dropbox or Google Drive link. Electronic files are to be organized in subfolders for each Division, with a separate subfolder for the general contractor items. Provide submittal checklist (Paragraph 3.7) checked to indicate each item provided.

Paper copies are to be provided in 3 ring binders labeled on the front **and on the binding end**.

Electronic submittals shall not include any single pdf of more than 50 pages.
- B. Operation and Maintenance Data:
 - 1. Manufacturer's detailed Operation and Maintenance instructions as required by individual specification sections.
 - 2. For Each Product or System: List names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
 - 3. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
 - 4. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.

5. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.
 6. Moisture protection and weather-exposed products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.
 7. Additional information as specified in individual product specification sections.
- C. Warranties and Bonds: (provide in a single separate 3 ring binder).
1. Obtain electronic and original copies of warranties and bonds, executed by responsible Subcontractors, suppliers, and manufacturers, within 30 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial completion is determined.
 2. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
 3. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
 4. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.
- D. Record Submittals: Provide electronic copies of submittals (shop drawings, product data, etc.) as approved during the project. Submittals shall include, all approved documents, shop drawings, color and finish selections, etc.
- E. Punch Lists: Provide electronic copies of the all completed punch lists (General construction, mechanical, electrical and civil) signed by the general contractor, with each item initialed by the general contractor indicating that each item has been verified as corrected.
- F. Inspection Certificates: Submit scans of certification certificates, properly executed by the various authorities having jurisdiction, which indicate that the Work, various items of equipment and systems have been inspected and are approved for occupancy, operation and permanent use.
- G. Evidence of Payment: Submit Contractor's Affidavit of Payment of Debts and Claims, AIA Document G706 in electronic and original form.
- H. Release of Liens: Submit Contractor's Affidavit of Release of Liens, AIA Document G706A in electronic and original form
- I. Consent of Surety for Final Payment: Submit Consent of Surety Company to Final Payment, AIA Document G707 in electronic and original form.
- J. For Contractor and each subcontractor submit Form IC-134, Minnesota Department of Revenue Withholding Affidavit for Contractors per Minnesota Statutes 290.92 and 290.97, certified by Minnesota Department of Revenue in electronic form.
- K. Payroll records showing compliance with Minnesota State Statute 177.41-44 regarding Prevailing Wage Rates for Commercial Construction in electronic form.
- L. Lien waivers for all previous payments to subcontractors, consistent with the amounts indicated on Applications for Payment in electronic form.
- M. Progress Photos for duration of project (See 03 3000).

- N. Daily Log of Construction: electronic scans and paper prints, including names and trades of all individuals on site each day of work (See 01 3000).
- O. Statement of Hazardous Materials Exclusion
 - 1. Contractor shall provide a signed statement indicating that to the best of the Contractor's knowledge, no hazardous materials have been used in the course of construction. For purposes of this statement, hazardous materials include asbestos, PCB's, lead, mercury and chlorofluorocarbons.
- P. Project Record Documents: Submit electronic (scanned) documents (drawings and Project Manual) describing deviations from or clarifications to the documents due to specific on-site conditions and describing any Addenda and/or Change Orders.
- Q. Requests for Information: Submit electronic copies of all Requests for Information (RFI's), including all official responses and back-up documentation.
- R. As-built site survey (where required by specifications).

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.1 SYSTEM STARTUP

- A. Coordinate schedule for start-up of various equipment and systems.
- B. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions that may cause damage.
- C. Verify tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.
- D. Verify that wiring and support components for equipment are complete and tested.
- E. Execute start-up under supervision of applicable Contractor personnel and manufacturer's representative in accordance with manufacturers' instructions.
- F. When specified in individual specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.
- G. Submit a written report that equipment or system has been properly installed and is functioning correctly.

3.2 DEMONSTRATION AND INSTRUCTION

- A. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at scheduled time, at equipment location.
- B. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.
- C. Provide a qualified person who is knowledgeable about the Project to perform demonstration and instruction of owner personnel.
- D. Video tape with audio recording the demonstration and instruction given to the Owner's personnel and issue two copies on a compact disc for Owner's Operation Manual.

3.3 ADJUSTING

- A. Adjust operating products and equipment to ensure smooth and unhindered operation.

3.4 FINAL CLEANING

- A. Execute final cleaning after Substantial Completion but before making final application for payment.
- B. Use cleaning materials that are nonhazardous and Green Seal Certified.
- C. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
- D. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.
- E. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
- F. Clean filters of operating equipment.
- G. Clean debris from roofs, gutters, downspouts, and drainage systems.
- H. Clean site; sweep paved areas, rake clean landscaped surfaces.
- I. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

3.5 CLOSEOUT PROCEDURES

- A. Make submittals that are required by governing or other authorities in the format such authorities may require.
 - 1. Obtain electronic copy from Civil Engineer to record revisions to original design, if any; and secure the required signatures on such drawing from the contractor having performed such work, if required by the governing authority.
 - 2. Provide copies to Architect and Owner.
- B. Notify Architect when work is considered ready for Substantial Completion review.
 - 1. Submit written certification that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect's review.
 - 2. If Contractor is aware of any items that are incomplete or are not in conformance with the Documents, those items shall be provided in written form to the Architect.
 - 3. The Architect and Engineers will review the Work and provide a Punch List of items identified during the review as incomplete or inconsistent with the Documents. This list may not be comprehensive of incomplete or unacceptable items and does will not relieve the Contractor of responsibility complete the project in full conformance with the Documents.
 - 4. The Contractor shall correct items of work listed in Punch Lists and executed Certificates of Substantial Completion within 30 calendar days of the date of Substantial Completion and provide a copy of the punch list signed by an Owner/Officer of the General Contractor organization, and initialing each individual item, signifying they are personally aware that each item has been completed in conformance with the Documents.
- C. Owner will occupy all of the building as specified in Section 01 1000.
- D. Notify Architect when work is considered finally complete.
- E. Complete items of work determined by Architect's final inspection.
- F. Complete and submit Operations and Maintenance Data within 10 calendar days of the date of Substantial Completion. Contractor is encouraged to assemble and provide Operations and Maintenance Data and approved submittals upon approval of the last submittal. Warranties, completed Punch Lists and As-builts shall be submitted under separate cover within 30 days of Substantial Completion.

3.6 MAINTENANCE

- A. Provide service and maintenance of components indicated in specification sections.
- B. Maintenance Period: As indicated in specification sections or, if not indicated, not less than one year from the Date of Substantial Completion or the length of the specified warranty, whichever is longer.
- C. Furnish service and maintenance of components indicated in specification sections for one year from date of Substantial Completion.
- D. Examine system components at a frequency consistent with reliable operation. Clean, adjust, and lubricate as required.
- E. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by the manufacturer of the original component.
- F. Maintenance service shall not be assigned or transferred to any agent or subcontractor without prior written consent of the Owner.

3.7 SUBMITTAL VERIFICATION CHECKLIST (to be included with all items checked as they are submitted for review by the Architect).

- Operation and Maintenance data for each product
- Warranties and Bonds in a separate binder for each product
- Record Submittals for each product used
- Punch Lists for each Division, signed by the General Contractor affirming completion of each item
- Inspection Certificates
- AIA Document G706 in electronic and original form
- ;AIA Document G706A in electronic and original form
- Document G707 in electronic and original form
- IC-134's
- Payroll records
- Lien waivers for all previous payments to subcontractors
- Progress Photos
- Daily Log of Construction
- Statement of Hazardous Materials Exclusion
- Project Record Documents (as-builts) for each trade
- Requests for Information (RFI's)
- Site as-built survey (where specified)

END OF SECTION

SELECTIVE DEMOLITION

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Selective demolition of building elements for alterations purposes.
- B. All demolition of materials, surfaces, finishes, ceilings, floors, walls, equipment, etc. required to accommodate the work of all disciplines, subcontractors and suppliers described in the Documents.
- C. Removal of all furniture, cabinets (freestanding and wall-mounted), display cases, display boards, storage units, etc. within all rooms indicated or required to be demolished to accommodate the Work.
- D. Turn over all door hardware (except hinges) and all door access controls devices to Owner.
- E. Removal of systems, equipment, devices, etc. identified on the drawings to be removed shall include all related hardware, structure, attachments, brackets, etc., unless specifically noted otherwise on the drawings.
- F. Where items are removed from existing surfaces to remain exposed, all holes, glue/sealant marks, or other blemishes are to be thoroughly removed or filled and/or repaired.
- G. Not used
- H. Remove all sleeves or enclosures left due to removal of services from floor penetrations, wall penetrations, etc.

1.2 RELATED REQUIREMENTS

- A. Section 01 1000 - Summary: Limitations on Contractor's use of site and premises.
- B. Section 01 6000 - Product Requirements: Handling and storage of items removed for salvage and relocation.

1.3 REFERENCE STANDARDS

- A. 29 CFR 1926 - U.S. Occupational Safety and Health Standards; current edition.
- B. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2004.

1.4 NOT USED

1.5 QUALITY ASSURANCE

- A. Demolition Firm Qualifications: Company specializing in the type of work required.
 - 1. Minimum of 5 years of documented experience.

PART 2 PRODUCTS

PART 3 EXECUTION

3.1 SCOPE

- A. Remove items indicated for disposal, salvage, relocation or recycling, as well as items that must be removed or temporarily relocated to complete the Work.

3.2 GENERAL PROCEDURES AND PROJECT CONDITIONS

- A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
 - 1. Obtain required permits.

2. Comply with applicable requirements of NFPA 241.
 3. Use of explosives is not permitted.
 4. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
 5. Provide, erect, and maintain temporary barriers and security devices.
 6. Use physical barriers to prevent access to areas that could be hazardous to workers or the public.
 7. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
 8. Do not close or obstruct roadways or sidewalks without permit.
 9. Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.
- B. Do not begin removal until receipt of notification to proceed from Owner.
- C. Do not begin removal until built elements to be salvaged or relocated have been removed.
- D. Protect existing structures and other elements that are not to be removed.
1. Provide bracing and shoring.
 2. Prevent movement or settlement of adjacent structures.
 3. Stop work immediately if adjacent structures appear to be in danger.
- E. Minimize production of dust due to demolition operations; do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.
- F. If hazardous materials are discovered during removal operations, stop work and notify Architect and Owner; hazardous materials include regulated asbestos containing materials, lead, PCB's, and mercury.
- G. Perform demolition in a manner that maximizes salvage and recycling of materials.
1. Comply with requirements of Section 01 7420 - Waste Management and Recycling.
 2. Dismantle existing construction and separate materials.
 3. Set aside reusable, recyclable, and salvageable materials; store and deliver to collection point or point of reuse.
- H. Prior to cutting any floor, roof deck, wall or structural element these surfaces must be thoroughly investigated for the presence of any conduit, water line or any other item that may obstruct removals or that may negatively impact use of the building or space. All items are to be documented prior to cutting. This process may require test holes, x-ray or ground penetrating radar.

3.3 EXISTING UTILITIES

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

necessary.

- G. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.
- H. Prepare building demolition areas by disconnecting and capping utilities outside the demolition zone; identify and mark utilities to be subsequently reconnected, in same manner as other utilities to remain.

3.4 SELECTIVE DEMOLITION FOR ALTERATIONS

- A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
 - 1. Verify that construction and utility arrangements are as shown.
 - 2. Report discrepancies to Architect before disturbing existing installation.
 - 3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.
- B. Separate areas in which demolition is being conducted from other areas that are still occupied.
 - 1. Provide, erect, and maintain temporary dustproof partitions of construction specified in Section 01 5000 in locations indicated on drawings.
- C. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.
- D. Remove existing work as indicated and as required to accomplish new work.
 - 1. Remove rotted wood, corroded metals, and deteriorated masonry and concrete; replace with new construction specified.
 - 2. Remove items indicated on drawings in such a way as to protect existing materials and systems to remain. Saw-cutting shall be executed wherever existing materials are to be partially removed, and shall be done with tools properly selected to complete the task without damaging adjacent surfaces, and to create a clean cut.
- E. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications): Remove existing systems and equipment as indicated.
 - 1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components.
 - 2. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
 - 3. See Section 01 1000 for other limitations on outages and required notifications.
 - 4. Verify that abandoned services serve only abandoned facilities before removal.
 - 5. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification.
- F. Protect existing work to remain.
 - 1. Prevent movement of structure; provide shoring and bracing if necessary.
 - 2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
 - 3. Repair adjacent construction and finishes damaged during removal work.
 - 4. Patch as specified for patching new work.

3.5 DEBRIS AND WASTE REMOVAL

- A. Remove debris, junk, and trash from site on a daily basis.
- B. Remove from site all materials not to be reused on site.
- C. Leave site in clean condition, ready for subsequent work.
- D. Clean up spillage and wind-blown debris.

END OF SECTION

UNIT MASONRY

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Concrete block patching at openings to accommodate the Work
- B. Mortar and Grout.
- C. Reinforcement and Anchorage.
- D. Accessories.

1.2 NOT USED

1.3 REFERENCE STANDARDS

- A. ACI 530/530.1/ERTA - Building Code Requirements and Specification for Masonry Structures; American Concrete Institute International; 2009.
- B. ACI 530.1/ASCE 6/TMS 602 - Specification For Masonry Structures; American Concrete Institute International; 2008.
- C. ASTM A82/A82M - Standard Specification for Steel Wire, Plain, for Concrete Reinforcement; 2007.
- D. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2009.
- E. ASTM A641/A641M - Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire; 2009a.
- F. ASTM C90 - Standard Specification for Loadbearing Concrete Masonry Units; 2011.
- G. ASTM C129 - Standard Specification for Nonloadbearing Concrete Masonry Units; 2006.
- H. ASTM C150 - Standard Specification for Portland Cement; 2011.
- I. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes; 2006.
- J. ASTM C270 - Standard Specification for Mortar for Unit Masonry; 2010.
- K. ASTM C404 - Standard Specification for Aggregates for Masonry Grout; 2007.
- L. ASTM C476 - Standard Specification for Grout for Masonry; 2010.

1.4 NOT USED

1.5 QUALITY ASSURANCE

- A. Comply with provisions of ACI 530/530.1/ERTA, except where exceeded by requirements of the contract documents.

1.6 WARRANTY

- A. Provide warranty against defects for installation and for all products for a period of 12 months from date of project Substantial Completion (not from product installation).

PART 2 PRODUCTS

2.1 CONCRETE MASONRY UNITS

- A. Concrete Block: Comply with referenced standards and as follows:
 - 1. Size: Ultra Fine Finish (or approved equal as reviewed by Architect) units with nominal face dimensions of 16 x 8 inches and nominal depth of 8 inches.
 - 2. Special Shapes: Provide non-standard blocks configured for corners.

3. All outside corners shall be bullnosed.
4. Non-Loadbearing Units: ASTM C129.
 - a. Hollow block, as indicated.

2.2 MORTAR AND GROUT MATERIALS

- A. Portland Cement: ASTM C150, Type I; color as required to produce approved color sample.
 1. Not more than 0.60 percent alkali.
- B. Hydrated Lime: ASTM C207, Type S.
- C. Grout Aggregate: ASTM C404.
- D. Water: Clean, potable and free of salts.

2.3 MORTAR AND GROUT MIXES

- A. Mortar for Unit Masonry: ASTM C270, using the Proportion Specification.
 1. Masonry below grade and in contact with earth: Type S.
 2. Face Brick and Manufactured Stone: Type N.
- B. Grout: ASTM C476. Consistency required to fill completely volumes indicated for grouting; fine grout for spaces with smallest horizontal dimension of 2 inches or less; coarse grout for spaces with smallest horizontal dimension greater than 2 inches.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive masonry.
- B. Verify that related items provided under other sections are properly sized and located.
- C. Verify that built-in items are in proper location, and ready for roughing into masonry work.

3.2 PREPARATION

- A. Direct and coordinate placement of metal anchors supplied for installation under other sections.
- B. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.
- C. Install self-adhering grade-line flashing to substrates as detailed on the drawings and follow manufacturer's instructions for installation. Where foundation wall waterproofing is implemented engage waterproofing contractor to inspect installation before and after the flashing is installed.

3.3 COURSING

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

3.4 PLACING AND BONDING

- A. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.

3.5 NOT USED

3.6 GROUTED COMPONENTS

- A. Reinforce columns as detailed by structural drawings.
- B. Lap splices minimum 48 bar diameters.
- C. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch of dimensioned position.
- D. Place and consolidate grout fill without displacing reinforcing.
- E. At bearing locations, fill masonry cores with grout for a minimum 16 inches either side of opening.

3.7 BUILT-IN WORK

- A. As work progresses, install built-in metal door frames and other items to be built into the work and furnished under other sections.
- B. Install built-in items plumb, level, and true to line.
- C. Bed anchors of metal door and glazed frames in adjacent mortar joints. Fill frame voids solid with grout.
 - 1. Fill adjacent masonry cores with grout minimum 16 inches from framed openings.

3.8 CLEANING

- A. Remove excess mortar and mortar droppings each day using brushes, clean rags or burlap. Do not allow excess mortar to dry or harden on the face of masonry walls.
- B. Replace defective mortar. Match adjacent work.
- C. Clean soiled surfaces with cleaning solution in strict accordance with instructions by masonry product manufacturer. Thoroughly pre-wet the area to be cleaned. Allow product to work for the duration required by the manufacturer then rinse with clean potable water.

END OF SECTION

COLD FORMED METAL FRAMING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Steel stud wall and floor framing systems.

1.2 RELATED REQUIREMENTS

- A. Section 07 9005 - Joint Sealers.
- B. Section 09 2116 - Gypsum Board

1.3 REFERENCE STANDARDS

- A. AISI SG02-1 - North American Specification for the Design of Cold-Formed Steel Structural Members; American Iron and Steel Institute; 2001 with 2004 supplement. (replaced SG-971)
- B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2009.
- C. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2010.
- D. ASTM C955 - Standard Specification for Load-Bearing (Transverse and Axial) Steel Studs, Runners (Tracks), and Bracing or Bridging for Screw Application of Gypsum Panel Products and Metal Plaster Bases; 2010.
- E. ASTM C1177/C1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing; 2008.
- F. ASTM C1396/C1396M - Standard Specification for Gypsum Board; 2009a.
- G. PS 1 - Structural Plywood; 2007.
- H. SSPC-Paint 20 - Zinc-Rich Primers (Type I, "Inorganic," and Type II, "Organic"); Society for Protective Coatings; 2002 (Ed. 2004).

1.4 ADMINISTRATIVE REQUIREMENTS

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

1.5 NOT USED

1.6 QUALITY ASSURANCE

- A. NOT USED
- B. Manufacturer Qualifications: Company specializing in manufacturing the types of products specified in this section, and with minimum three years of documented experience.
- C. Installer Qualifications: Company specializing in performing the work of this section with minimum five years of experience.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Metal Framing, Connectors, and Accessories:
 - 1. ClarkDietrich Building Systems LLC: www.clarkdietrich.com.
 - 3. Studco Corporation:
 - 4. MarinoWare.
 - 5. Substitutions: See Section 01 6000 - Product Requirements.

2.2 FRAMING SYSTEM

- A. Provide primary and secondary framing members, bridging, bracing, plates, gussets, clips, fittings, reinforcement, and fastenings as required to provide a complete framing system.
- B. Design Criteria: Provide completed framing system having the following characteristics:
 - 1. Design: Calculate structural characteristics of cold-formed steel framing members according to AISI North American Specification for the Design of Cold-Formed Steel Structural Members. Calculations for loading and stresses, bearing the seal and signature of Professional Engineer registered in the state of the assigned project.
 - 2. Structural Performance: Design, engineer, fabricate, and erect to withstand specified design loads for project conditions within required limits.
 - 3. Design Loads: As indicated on the drawings.
 - 4. Deflections: Live load deflection meeting the following under total design load, unless otherwise indicated:
 - a. Exterior Walls: Maximum horizontal deflection of 1/240 of span.
 - b. Brick Veneer: Maximum horizontal deflection of 1/600 of span.
 - c. Exterior Insulation & Finish System: Maximum horizontal deflection of 1/240 of span.
 - d. Design non-axial loadbearing framing to accommodate not less than 1/2 in vertical deflection.
 - 5. Able to tolerate movement of components without damage, failure of joint seals, undue stress on fasteners, or other detrimental effects when subject to seasonal or cyclic day/night temperature ranges.
 - 6. Able to accommodate construction tolerances, deflection of building structural members, and clearances of intended openings.

2.3 FRAMING MATERIALS

- A. Studs and Track: ASTM C955; studs formed to channel, "C", or "Sigma" shape with punched web; U-shaped track in matching nominal width and compatible height.
 - 1. Gage and depth as determined by design and where indicated on the drawings, but not thinner than 20 gage.
 - 2. Galvanized in accordance with ASTM A653/A653M G90/Z275 coating.

2.4 Cold-Formed Steel Framing:

- 1. The floor joists and other floor framing components must be designed to meet the strength and deflection criteria specified in the contract documents.
- 2. The attachment flange or bearing edge for cold-formed steel must be a minimum 1-5/8" (41 mm) wide, 2" preferred, with at least 3/4" (19 mm) of the panel bearing on the supporting flange.
- 3. The size of the cold-formed steel framing flange required will vary based on the specified mil thickness/gauge and fastener selected.
- 4. Cold-formed steel framing thickness and size is always based on diaphragm capacity but must be a minimum 43 mil (18 gauge) and spaced no greater than 24" (610 mm) o.c. for up to 450 plf. When significant diaphragm capacity is required, 54 mil (16 gauge) may be required.
- 5. Joist bearing shall be provided at the foundation that is uniform and level.
- 6. Cold-formed steel joists shall be located directly over bearing studs or a header installed at the top of the bearing wall to distribute the load.
- 7. Joist framing must be perpendicular to rim joists.
- 8. On steel framing, a web stiffener shall be provided at reaction points and/or concentrated loads as specified in the contract documents. End blocking shall be provided where joist ends are not otherwise restrained from rotation.

9. Additional joists shall be provided under parallel partitions and around all floor openings that interrupt one or more spanning members. Framing must be properly fastened to the supporting walls or structure.
10. All blocking or bridging must be installed prior to the installation of 3/4" USG STRUCTO-CRETE® Brand Structural Panels.
11. Framing must be of good quality, free of bows, twists, or other malformations.

2.5 ACCESSORIES

- A. Bracing, Furring, Bridging: Formed sheet steel, thickness and dimensions as determined by the Contractor to provide a permanent, durable installation at conditions encountered; finish to match framing components.
- B. Plates, Gussets, Clips: Formed Sheet Steel, thickness determined for conditions encountered; finish to match framing components.
- C. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, Type I - Inorganic, complying with VOC limitations of authorities having jurisdiction.
- D. Wall gasket: 1/4" thick Neoprene Isolation Gasket Tape, high density closed cell foam manufactured for sound isolation. Provide at all walls intersecting window mullions, concrete, CMU window sills or similar surfaces.

2.6 FASTENERS

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

PART 3 EXECUTION

3.1 EXAMINATION

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

3.2 INSTALLATION OF STUDS

- A. Install components in accordance with manufacturers' instructions.
- B. Align floor and ceiling tracks; locate to wall layout. Secure in place with fasteners at maximum 24 inches on center.
- C. Place studs at 16 inches on center; not more than 2 inches from abutting walls and at each side of openings. Connect studs to tracks using clip and tie method.
- D. Construct corners using minimum of three studs. Install double studs at wall openings, door and window jambs.
- E. Install load bearing studs full length in one piece. Splicing of studs is not permitted.
- F. Install load bearing studs, brace, and reinforce to develop full strength and achieve design requirements.
- G. Coordinate placement of insulation in multiple stud spaces made inaccessible after erection.
- H. Install intermediate studs above and below openings to align with wall stud spacing.
- I. Provide deflection allowance in stud track, directly below horizontal building framing at non-load

bearing framing.

- J. Attach cross studs to studs for attachment of fixtures anchored to walls.
- K. Install framing between studs for attachment of mechanical and electrical items, and to prevent stud rotation.
- L. Touch-up field welds and damaged galvanized surfaces with primer.

3.3 TOLERANCES

- A. Maximum Variation from True Position: 1/4 inch.
- B. Maximum Variation of any Member from Plane: 1/8 inch.

END OF SECTION

CARPENTRY

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Installation of doors, wood frames, door hardware and other related items.
- C. Installation of work under Section 05 5000.
- D. Concealed wood blocking, nailers, and supports.
 - 1. Provide 16" x 16" solid blocking at all wall mounted door stops and hooks.
- E. Fire retardant treated FRT wood materials.
- F. All other carpentry/installation work required for the execution of the Work.

1.02 RELATED REQUIREMENTS

1.03 REFERENCE STANDARDS

- A. ANSI A208.1 - American National Standard for Particleboard; 2009.
- B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2009.
- C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2010b.
- D. AWPA C2 - Lumber, Timber, Bridge Ties and Mine Ties -- Preservative Treatment by Pressure Processes; American Wood Protection Association; 2003.
- E. AWPA C9 - Plywood -- Preservative Treatment by Pressure Processes; American Wood Protection Association; 2003.
- F. AWPA C20 - Structural Lumber -- Fire Retardant Treatment by Pressure Processes; American Wood-Protection Association; 2003.
- G. AWPA U1 - Use Category System: User Specification for Treated Wood; American Wood Protection Association; 2010.
- H. PS 1 - Structural Plywood; 2007.
- I. PS 20 - American Softwood Lumber Standard; National Institute of Standards and Technology (Department of Commerce); 2005.
- J. WCLIB (GR) - Standard Grading Rules for West Coast Lumber No. 17; West Coast Lumber Inspection Bureau; 2004, and supplements.

1.04 SUBMITTALS

1.05 DELIVERY, STORAGE, AND HANDLING

- A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.
- B. Fire Retardant Treated Wood: Prevent exposure to precipitation during shipping, storage, or installation.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
 - 1. All blocking within
 - 2. Species: Spruce-Pine-Fir (South), fire retardant treated at all locations, unless otherwise

indicated.

2. If no species is specified, provide any species graded by the agency specified; if no grading agency is specified, provide lumber graded by any grading agency meeting the specified requirements.
3. Grading Agency: Any grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee (www.alsc.org) and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.

B. Lumber fabricated from old growth timber is not permitted.

2.02 DIMENSION LUMBER FOR CONCEALED APPLICATIONS

- A. Grading Agency: West Coast Lumber Inspection Bureau (WCLIB).
- B. Sizes: Nominal sizes as indicated on drawings or as required to provide a permanent, stable installation, S4S.
- C. Moisture Content: S-dry or MC19.
- D. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:
 1. Lumber: S4S, No. 2 or Standard Grade.
 2. Boards: Standard or No. 3.

2.03 ACCESSORIES

- A. Fasteners and Anchors:
 1. Metal and Finish: Hot-dipped galvanized steel per ASTM A 153/A 153M for high humidity and preservative-treated wood locations, unfinished steel elsewhere.

2.04 FACTORY WOOD TREATMENT

- A. Treated Lumber and Plywood: Comply with requirements of AWP A U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
 1. Fire-Retardant Treated Wood: Mark each piece of wood with producer's stamp indicating compliance with specified requirements.
 2. Preservative-Treated Wood: Provide lumber and plywood marked or stamped by an ALSC-accredited testing agency, certifying level and type of treatment in accordance with AWP A standards.
- B. Preservative Pressure Treatment of Lumber Above Grade: AWP A U1, Use Category UC3B, Commodity Specification A using waterborne preservative to 0.25 lb/cu ft retention.
 1. Kiln dry lumber after treatment to maximum moisture content of 19 percent.
 - a. Treat lumber exposed to weather.
 2. Treat lumber in contact with roofing, flashing, or waterproofing.
 3. Treat lumber in contact with masonry or concrete.
 4. Treat lumber less than 18 inches above grade.
 5. Preservative Pressure Treatment of Plywood Above Grade: AWP A U1, Use Category UC2 and UC3B, Commodity Specification F using waterborne preservative to 0.25 lb/cu ft retention.
 - a. Kiln dry plywood after treatment to maximum moisture content of 19 percent.
 - b. Treat plywood in contact with roofing, flashing, or waterproofing.
 - c. Treat plywood in contact with masonry or concrete.
 - d. Treat plywood less than 18 inches above grade.

PART 3 EXECUTION

3.01 PREPARATION

- A. Coordinate installation of rough carpentry members specified in other sections.

3.02 INSTALLATION - GENERAL

- A. Select material sizes to minimize waste.
- B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.

3.03 BLOCKING, NAILERS, AND SUPPORTS

- A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim.

3.05 INSTALLATION OF CONSTRUCTION PANELS

- A. Communications and Electrical Room Mounting Boards: Secure with screws to studs with edges over firm bearing; space fasteners at maximum 24 inches on center on all edges and into studs in field of board.
 - 1. At fire-rated walls, install board over wall board indicated as part of the fire-rated assembly.
 - 2. Where boards are indicated as full floor-to-ceiling height, install with long edge of board parallel to studs.
 - 3. Install adjacent boards without gaps.

3.06 CLEANING

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

END OF SECTION

INSULATION

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Batt insulation at all new walls, and where indicated.

1.2 RELATED REQUIREMENTS

- A. Section 05 4000 - Cold-Formed Metal Framing: Supporting construction for batt insulation.
- B. Section 06 1000 - Rough Carpentry: Supporting construction for batt insulation.
- C. Section 09 2116 - Gypsum Board Assemblies: Acoustic insulation.

1.3 REFERENCE STANDARDS

- A. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation; 2010a.
- B. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2006.
- C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2010b.
- D. ASTM E136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace At 750 Degrees C; 2011.

PART 2 PRODUCTS

2.1 BATT INSULATION MATERIALS

- A. Where batt insulation is indicated, either glass fiber or mineral fiber batt insulation may be used, at Contractor's option.
- B. Glass Fiber Batt Insulation: Flexible preformed batt or blanket, complying with ASTM C665; friction fit.
 - 1. Combustibility: Non-combustible, when tested in accordance with ASTM E136, except for facing, if any.
 - 2. Thermal Resistance: R of 19.
 - 3. Thickness: 6 inch.
 - 4. Manufacturers:
 - a. CertainTeed Corporation: www.certainteed.com.
 - b. Johns Manville Corporation: www.jm.com.
 - c. Owens Corning Corp: www.owenscorning.com.

PART 3 EXECUTION

3.1 EXAMINATION

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

3.2 BATT INSTALLATION

- A. Install insulation in accordance with manufacturer's instructions.
- B. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.
- C. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services

within the plane of the insulation.

- D. At metal framing, place vapor retarder on warm side of insulation; lap and seal sheet retarder joints over member face.

3.3 PROTECTION

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

END OF SECTION

JOINT SEALERS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Sealants and joint backing
- B. Provide at all joints between new and old materials and between all dissimilar materials, including but not limited to gypsum board or brick/CMU to CMU, ceramic tile, louver infills, door frames, louvers, etc.
- C. Provide at perimeter of all millwork, countertops, lavatories, window sills, etc.
- D. Provide at all interior and exterior horizontal and vertical control joint locations. Color to match adjacent surface color.
- E. Provide at all locations where existing construction conditions prevent flush, tight connections with new construction, resulting in gaps greater than 1/8".
- F. Provide at all inside corners where both at least one wall is wall tile. Color to match wall tile color.
- G. Provide at all joints between aluminum framing and adjacent surfaces.

1.2 RELATED REQUIREMENTS

- A. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions.
- B. Section 08 8000 - Glazing: Glazing sealants and accessories.

1.3 REFERENCE STANDARDS

- A. ASTM C834 - Standard Specification for Latex Sealants; 2010.
- B. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2011.
- C. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2009.
- D. SCAQMD 1168 - South Coast Air Quality Management District Rule No.1168; current edition; www.aqmd.gov.

1.4 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate the work with other sections referencing this section.

1.5 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data indicating sealant chemical characteristics.
- C. Samples: Submit two samples, 1/4 x 2 inch in size illustrating sealant colors for selection.

1.6 QUALITY ASSURANCE

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

1.7 MOCK-UP

- A. Provide mock-up of sealant joints in conjunction with window and wall mock-up under provisions of Section 01 4000.
- B. Construct mock-up with specified sealant types and with other components noted.
- C. Locate where directed.

- D. Mock-up of the final color may remain as part of the Work.
- E. Provide up to 5 colors for selection as directed by the architect.

1.8 FIELD CONDITIONS

- A. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

1.9 WARRANTY

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Correct defective work within a five year period after Date of Substantial Completion.
- C. Warranty: Include coverage for installed sealants and accessories which fail to achieve airtight seal, exhibit loss of adhesion or cohesion, or do not cure.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Silicone Sealants
 - 1. Tremco Global Sealants: www.tremcosealants.com.
 - 2. BASF Construction Chemicals-Building Systems: www.chemrex.com.
 - 3. Pecora Corporation: www.pecora.com.
 - 4. Dow Corning; Product 756 or 786 or 999-A.
 - 5. G.E. Silicones; Product SCS9000NB or SCS 1700 or SCS 1200
 - 6. Substitutions: See Section 01 6000 - Product Requirements.
- B. Polyurethane Sealants:
 - 1. Tremco Global Sealants: www.tremcosealants.com.
 - 2. BASF Construction Chemicals-Building Systems: www.chemrex.com.
 - 3. Pecora Corporation: www.pecora.com.
 - 4. Sonneborn
 - 5. Substitutions: See Section 01 6000 - Product Requirements.
- C. Acrylic Emulsion Latex Sealants:
 - 1. Tremco; Product 834.
 - 2. Sonneborn; Product Sonolac
 - 3. Substitutions: See Section 01 6000 - Product Requirements.

2.2 SEALANTS

- A. Sealants and Primers - General: Provide only products having lower volatile organic compound (VOC) content than required by South Coast Air Quality Management District Rule No.1168, for interior products only.
- B. Type A - General Purpose Exterior Sealant: Polyurethane; ASTM C 920, Grade NS, Class 50, Uses M, G, and A; multi- component.
 - 1. Color: To be selected by Architect from manufacturer's standard range.
 - 2. Product: Dymeric 240FC manufactured by Tremco.
 - 3. Applications: Use for:
 - a. Joints between concrete and other materials.
 - b. Other exterior joints for which no other sealant is indicated.
- C. Type B - General Purpose Interior Sealant: Acrylic emulsion latex; ASTM C834, Type OP, Grade NF single component, paintable.
 - 1. Color: Standard colors matching finished surfaces.
 - a. Tremco Tremflex 834- Acrylic Latex manufactured by Tremco, Inc.

- b. Sonneborn Sonolac
- 2. Applications: Use for:
 - a. Interior wall and ceiling control joints. Match color of adjacent materials or provide paintable product.
 - b. Painted wood trim.
 - c. Interior door frames
 - d. Other interior joints for which no other type of sealant is indicated.
- D. Type C – Restroom Fixture Sealant: White silicone; ASTM C920, Uses I, M and A; single component, mildew resistant.
 - 1. Tremco Tremsil 200.
 - 2. Dow Corning 786.
 - 3. G.E. Silicone SCS 1700
 - 4. Applications: Use for:
 - a. Restroom fixtures.
- E. Type D - Concrete Paving Joint Sealant: Polyurethane, self-leveling; ASTM C920, Class 25, Uses T, I, M and A; multi- component.
 - 1. Color: Color as selected.
 - a. THC-901 manufactured by Tremco Inc.
 - b. SL-2 manufactured Sonneborn
 - c. Substitutions: See Section 01 6000 - Product Requirements.
 - 2. Applications: Use for:
 - a. Joints in sidewalks and vehicular paving.
 - b. Joints between paving materials and the exterior building walls.
- F. Type E - Butyl Sealant: ASTM C920, Grade NS, Class 12-1/2, Uses NT, M, A, G, O; single component, solvent release, non-skinning, non-sagging.
 - 1. Color: To be selected by Architect from manufacturer's standard range.
 - a. Tremco Butyl Sealant manufactured by Tremco, Inc.
 - 2. Applications: Use for:
 - a. Under thresholds at doors in exterior walls.
 - b. Metal flashing joints and seams.
 - c. Roof mounted curb perimeters.
- G. Type F - Silicone Sealant: ASTM C920, Grade NS, Class 25, Uses NT, A, G, M, O; single component, neutral curing, non-sagging, non-staining, fungus resistant, non-bleeding.
 - 1. Color: Standard colors matching finished surfaces.
 - a. Tremco Spectrem 4 (For full range of available colors)
 - b. G.E. Silicones SCS9000NB
 - c. Dow Corning 756
 - d. Dow Corning 791(at EIFS)
 - 2. Movement Capability: Plus and minus 25 percent.
 - 3. Service Temperature Range: -65 to 180 degrees F.
 - 4. Shore A Hardness Range: 15 to 35.
 - 5. Applications: Use for:
 - a. Exterior joints in vertical surfaces of masonry and exterior insulation and finish system.
 - b. Interior and exterior perimeter joints of metal frames in exterior walls.
- H. Type G – Corner Guard Sealant Restroom Tile Sealant: Silicone; ASTM C920, single component, mildew resistant.
 - 1. Tremco Spectrem 1
 - 2. Dow Corning comparable silicone sealant.
 - 3. G.E. comparable Silicone sealant
 - 2. Applications: Use for:
 - a. Provide at all floor and wall tile connections to dissimilar materials, where metal trim is

- not elsewhere specified. Color to match wall tile color.
- b. Provide at all inside corners where both at least one wall is wall tile. Color to match wall tile color.
- I. Type H – Corner Guard Sealant: Polyurethane; ASTM C 920, Grade NS, Class 50, Uses M, G, and A; multi- component.
 - 1. Color: To be selected by Architect from manufacturer's standard range.
 - 2. Product: BASF MasterSeal NP 2 (or Dymeric 240FC manufactured by Tremco).
 - 3. Applications: Use for:
 - a. Joints along each edge of all corner guards (appr. 48 at 4'-0" long).

2.3 ACCESSORIES

- A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.
- B. Exterior Joint Backing: Round foam rod compatible with sealant; closed cell polyethylene; oversized 25 to 35 percent larger than joint width; Green Rod manufactured by Nomaco.
- C. Interior Joint Backing: Round foam rod compatible with sealant; bi-cellular open and closed cell polyolefin foam plastic material ; oversized 25 to 33 percent larger than joint width; Green Rod manufactured by Nomaco..
- D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.
- E. Exterior Seal System – Michael Rizza Company, Inc. Exterior Vertical Seal System 2" (EV2). Provide at all connections between existing concrete exterior wall panels and new masonry.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that substrate surfaces are ready to receive work.
- B. Verify that joint backing and release tapes are compatible with sealant.

3.2 PREPARATION

- A. Remove loose materials and foreign matter that could impair adhesion of sealant.
- B. Clean and prime joints in accordance with manufacturer's instructions.
- C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.
- D. Protect elements surrounding the work of this section from damage or disfigurement.

3.3 INSTALLATION

- A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B. Perform installation in accordance with ASTM C1193.
- C. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated.
- D. Install bond breaker where joint backing is not used.
- E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
- F. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
- G. Tool joints concave.

3.4 CLEANING

- A. Clean adjacent soiled surfaces.

3.5 PROTECTION

- A. Protect sealants until cured.

END OF SECTION

HOLLOW METAL DOOR FRAMES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Steel frames for plastic laminate, steel and/or wood doors.

1.02 RELATED REQUIREMENTS

- A. Section 08 7100 - Door Hardware.
- B. Section 09 9000 Exterior & Interior Painting and Coating: Field painting.

1.03 REFERENCE STANDARDS

- A. ANSI/ICC A117.1 - American National Standard for Accessible and Usable Buildings and Facilities; International Code Council; 2003.
- B. ANSI A250.8 - SDI-100 Recommended Specifications for Standard Steel Doors and Frames; 2003.
- C. ANSI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames; 1998 (R2004).
- D. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2010.
- E. BHMA A156.115 - Hardware Preparation in Steel Doors and Steel Frames; 2006.
- F. NAAMM HMMA 840 - Guide Specifications for Installation and Storage of Hollow Metal Doors and Frames; The National Association of Architectural Metal Manufacturers; 2007.
- G. NFPA 80 - Standard for Fire Doors and Other Opening Protectives; 2010.
- H. UL (BMD) - Building Materials Directory; Underwriters Laboratories Inc.; current edition.
- I. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies; Current Edition, Including All Revisions.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes; and one copy of referenced grade standard.
- C. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and identifying location of different finishes, if any.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- B. Maintain at the project site a copy of all reference standards dealing with installation.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Store in accordance with NAAMM HMMA 840.
- B. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Steel Door Frames:
 - 1. Assa Abloy Ceko or Curries: www.assaabloydss.com.
 - 2. Steelcraft; www.steelcraft.com.
 - 3. Substitutions: See Section 01 6000 - Product Requirements.

2.02 DOORS AND FRAMES

- A. Requirements for All Door Frames:
 - 1. Accessibility: Comply with ANSI/ICC A117.1.
 - 2. Hardware Preparation: In accordance with BHMA A156.115, with reinforcement welded in place, in addition to other requirements specified in door grade standard.
 - a. Hinge tabs shall be arc welded, not spot welded.
 - 3. Finish: Factory primed, for field finishing.
- B. Combined Requirements: If a particular door frame unit is indicated to comply with more than one type of requirement, comply with all the specified requirements for each type; for instance, an exterior door that is also indicated as being sound-rated must comply with the requirements specified for exterior doors and for sound-rated doors; where two requirements conflict, comply with the most stringent.

2.03 STEEL FRAMES

- A. General:
 - 1. Comply with the requirements of grade specified for corresponding door.
 - a. ANSI A250.8 Level 1 Doors: 16 gage frames for doors 4 feet or less in width. Frames over 4 feet in width to be not less than 14 gauge.
 - 2. Finish: Factory primed, for field finishing.
 - 3. Provide mortar guard boxes for hardware cut-outs in frames to be installed in masonry or to be grouted.
 - 4. Frame Reinforcement for Hardware
 - a. Factory/shop mortise, reinforce, drill, and tap frames for door hardware attachment.
 - b. Receive hardware or templates from hardware supplier and prepare frames for hardware installation. Frame manufacturer is responsible for proper fit and performance of installed hardware.
 - c. Frame Reinforcement For Hardware: Factory install at all openings in frames for doors. Provide adequate size and strength of reinforcement to accommodate hardware and to support door.
 - Hinge Reinforcement: Not less than 7 gauge (0.179 inch).
 - Strike Clips: Not less than 16 gauge (0.0598 inch) by 12 inches long.
 - Strike Clips: Not less than 16 gauge (0.0598 inch), and be prepared for ANSI-A115.1-2 strike.
 - Reinforcement For Closer or Door Stop/Holder: Not less than 12 gauge (0.1046 inch).
 - Provide continuous across head of all frames at door openings.
 - Mortar (Masonry Grout) Boxes: Fully enclosing over hardware mortises.
 - 5. Provide steel closure plates at the back side of frames meeting adjacent frames.
- B. Interior Door Frames at new locations, Non-Fire-Rated: Fully welded type. Knock-down frames are not acceptable.
 - 1. 16 gage frames for doors 4 feet or less in width. Frames over 4 feet in width to be not less than 14 gauge.
- C. Interior Door Frames, Fire-Rated: Fully welded type. Knock-down frames are not acceptable.
 - 1. Fire Rating: Same as door, labeled.
 - 2. 16 gage frames for doors 4 feet or less in width. Frames over 4 feet in width to be not less than 14 gauge.

2.05 ACCESSORY MATERIALS

- A. Silencers: Resilient rubber, fitted into drilled hole; 3 on strike side of single door, 3 on center mullion of pairs, and 2 on head of pairs without center mullions.

2.06 FINISH MATERIALS

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

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that opening sizes and tolerances are acceptable.

3.02 INSTALLATION

- A. Install in accordance with the requirements of the specified door grade standard and NAAMM HMMA 840.
- B. In addition, install fire rated units in accordance with NFPA 80.
- C. Coordinate frame anchor placement with wall construction.
- D. Grout frames in masonry construction, using hand trowel methods; brace frames so that pressure of grout before setting will not deform frames.
- E. Coordinate installation of hardware.
- F. Coordinate installation of glazing.
- G. Touch up damaged factory finishes.
- H. Frames shall be installed plumb and straight and shall be 1/4" maximum from the face of the wall in the direction of travel.

3.04 TOLERANCES

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

3.05 ADJUSTING

- A. Adjust for smooth and balanced door movement.

3.06 SCHEDULE

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

END OF SECTION

WOOD DOORS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Wood veneer doors

1.02 RELATED REQUIREMENTS

- A. Section 08 1113 – Door Frames
- B. Section 08 8000 - Glazing.
- C. Section 08 7100 - Door Hardware

1.03 REFERENCE STANDARDS

- A. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards; 2009.
- B. AWI/AWMAC (QSI) - Architectural Woodwork Quality Standards Illustrated; Architectural Woodwork Institute and Architectural Woodwork Manufacturers Association of Canada; 2005, 8th Ed., Version 2.0.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Warranty.
- C. Shop Drawings: Illustrate door opening criteria, elevations, sizes, types, swings, undercuts required, special beveling, special blocking for hardware, factory machining criteria.
- D. Samples: Submit two samples of door finish, 6 x 6 inch in size illustrating wood grain, color, and sheen.
- E. Manufacturer's Installation Instructions: Indicate special installation instructions.

1.05 QUALITY ASSURANCE

- A. Maintain one copy of the specified door quality standard on site for review during installation and finishing.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Package, deliver and store doors in accordance with specified quality standard.
- B. Accept doors on site in manufacturer's packaging. Inspect for damage.
- C. Protect doors with resilient packaging sealed with heat shrunk plastic. Do not store in damp or wet areas; or in areas where sunlight might bleach finish. Seal top and bottom edges with tinted sealer if stored more than one week. Break seal on site to permit ventilation.

1.07 WARRANTY

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.
- B. Interior Doors: Provide manufacturer's warranty for the life of the installation.
- C. Include coverage for delamination of veneer, warping beyond specified installation tolerances, defective materials, and telegraphing core construction.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Wood Veneer Faced Doors:
 - 1. Eggers Industries www.eggersindustries.com
 - 2. Algoma Hardwoods www.algomahardwoods.com
 - 3. VT Industries, Inc: www.vtindustries.com.
 - 4. Substitutions: See Section 01 6000 - Product Requirements.

2.02 DOORS

- A. All Doors: See drawings for locations and additional requirements.
 - 1. Quality Level: Premium Grade, in accordance with AWI/AWMAC/WI Architectural Woodwork Standards.
 - 2. Quality Level: Premium Grade with A grade veneer, in accordance with AWI/AWMAC Architectural Woodwork Quality Standards Illustrated, Section 1300.
- B. Interior Doors: 1-3/4 inches thick unless otherwise indicated; flush construction.
 - 1. Provide solid core doors at all locations.
 - 2. Maple veneer stained to match Architect's sample

2.03 DOOR AND PANEL CORES

- A. Non-Rated Solid Core and 20 Minute Rated Doors: Type particleboard core (PC), plies and faces as indicated above.

2.04 DOOR FACINGS

- A. Plain sliced red oak veneer stained to match Masonite Aspiro Series Marshfield-Algoma Nutmeg.**

2.05 ACCESSORIES

- A. Glazing Stops for glass lites: Wood to match door facing, mitered corners; with countersink style tamper proof screws.

2.06 DOOR CONSTRUCTION

- A. Fabricate doors in accordance with door quality standard specified.
- B. Low-emitting Materials and recycled content: Provide doors made with recycled wood content and adhesives, composite wood products and documentation indicating that product contains no urea formaldehyde.
- C. Cores Constructed with stiles and rails:
- D. Provide solid blocks at lock edge and top of door for closer for hardware reinforcement.
- E. Factory machine doors for hardware other than surface-mounted hardware, in accordance with hardware requirements and dimensions.
- F. Factory fit doors for frame opening dimensions identified on shop drawings, with edge clearances in accordance with specified quality standard.
- G. Provide edge clearances in accordance with the quality standard specified.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that opening sizes and tolerances are acceptable.
- C. Do not install doors in frame openings that are not plumb or are out-of-tolerance for size or alignment.

3.02 INSTALLATION

- A. Install doors in accordance with manufacturer's instructions and specified quality standard.
- B. Do not field cut or trim; if fit or clearance is not correct, replace door.
- C. Use machine tools to cut or drill for hardware.
- D. Coordinate installation of doors with installation of frames and hardware.
- E. Coordinate installation of glazing.
- F. Install door louvers plumb and level.

3.03 TOLERANCES

- A. Conform to specified quality standard for fit and clearance tolerances.
- B. Conform to specified quality standard for telegraphing, warp, and squareness.

3.04 ADJUSTING

- A. Adjust doors for smooth and balanced door movement as well as plumb, straight, level and even reveals on all sides.
- B. Adjust closers for full closure and effective back check.

END OF SECTION

**SECTION 08 71 00
DOOR HARDWARE**

PART 1 - GENERAL

1.1 CONDITIONS

- A. Conditions of the contract (General and Supplementary Conditions) and Division 01 - General Requirements, govern the work of this section.
- B. This section includes all material and related service necessary to furnish all finish hardware indicated on the drawings or specified herein.
- C. Furnish UL listed hardware for all labeled and 20 min. openings in conformance with the requirements for the class of opening scheduled. Underwriters' requirements shall have precedence over specification where conflicts exist.
- D. All work shall be in accordance with all applicable state and local building codes. Code requirements shall have precedence over this specification where conflicts exist.

1.2 WORK INCLUDED

- A. This section includes the following:
 - 1. Furnish door hardware (for hollow metal, wood doors) specified herein, listed in the hardware schedule, and/or required by the drawings.
 - 2. Thresholds and Weather-stripping
 - 3. Electro-Mechanical Devices
 - 4. Access Control components and or systems specified within this section.
- B. Where items of hardware are not definitely or correctly specified and is required for the intended service, such omission, error or other discrepancy should be directed to the Architect prior to the bid date for clarification by addendum. Otherwise furnish such items in the type and quantity established by this specification for the appropriate service intended.

1.3 RELATED WORK IN OTHER SECTIONS

- A. This section includes coordination with related work in the following sections:
 - 1. Division 06 Section "Finish Carpentry".
 - 2. Division 08 Section "Hollow Metal Doors and Frames".
 - 3. Division 08 Section "Wood Doors"
 - 4. Division 26 Sections "Electrical"
 - 5. Division 28 Sections "Electronic Safety and Security".

1.4 REFERENCES

- A. Publications of agencies and organizations listed below form a part of this specification section to the extent referenced.
 - 1. DHI - Recommended Locations for Builders' Hardware.
 - 2. NFPA 80 - Standards for Fire Doors and Windows.
 - 3. NFPA 101 - Code for Safety to Life from Fire in Buildings and Structures.
 - 4. UL - Building Material Directory.
 - 5. DHI - Door and Hardware Institute
 - 6. WHI - Warnock Hersey
 - 7. BHMA - Builders Hardware Manufacturers Association
 - 8. ANSI – American National Standards Institute
 - 9. ANSI ICC500 – Standard for the Design and Construction of Storm Shelters
 - 10. IBC- International Building Code (as adopted and amended by local building code)

1.5 SUBMITTALS

- A. Within ten days after award of contract, submit detailed hardware schedule in quantities as required by Division 01 - General Requirements.

- B. Schedule format shall be consistent with recommendations for a vertical format as set forth in the Door & Hardware Institute's (DHI) publication "Sequence and Format for the Hardware Schedule". Hardware sets shall be consolidated to group multiple door openings which share similar hardware requirements. Schedule shall include the following information:
1. Door number, location, size, handing, and rating.
 2. Door and frame material, handing.
 3. Degree of swing.
 4. Manufacturer
 5. Product name and catalog number
 6. Function, type and style
 7. Size and finish of each item
 8. Mounting heights
 9. Explanation of abbreviations, symbols, etc.
 10. Numerical door index, indicating the hardware set/ group number for each door.
- C. When universal type door closers are to be provided, the schedule shall indicate the application method to be used for installation at each door: (regular arm, parallel arm, or top jamb).
- D. The schedule will be prepared under the direct supervision of a certified Architectural Hardware Consultant (AHC), or certified Door Hardware Consultant (DHC) employed by the hardware distributor. The hardware schedule shall be signed and embossed or stamped with the DHI certification seal of the supervising AHC or DHC. The supervising AHC or DHC shall attend any meetings related to the project when requested by the architect.
- E. Check the specified hardware for suitability and adaptability to the details and surrounding conditions.
- F. Review drawings from related trades as required to verify compatibility with specified hardware. Indicate unsuitable or incompatible items, and proposed substitutions in the hardware schedule.
- G. Provide documentation for all hardware to be furnished on labeled fire doors indicating compliance with positive pressure fire testing UL 10C.
- H. Furnish manufacturers' catalog data for each item of hardware in quantities as required by Division 01 - General Requirements.
- I. Submit a sample of each type of hardware requested by the architect. Samples shall be of the same finish, style, and function as specified herein. Tag each sample with its permanent location so that it may be used in the final work.
- J. Furnish with first submittal, a list of required lead times for all hardware items.
- K. After final approved schedule is returned, transmit corrected copies for distribution and field use in quantities as required by Division 01 - General Requirements.
- L. Furnish approved hardware schedules, template lists, and pertinent templates as requested by related trades.
- M. Furnish necessary diagrams, schematics, voltage and amperage requirements for all electro-mechanical devices or systems as required by related trades. Wiring diagrams shall be opening specific and include both a riser diagram and point to point diagram showing all wiring terminations.
- N. After receipt of approved hardware schedule, Hardware supplier shall initiate a meeting including the owner's representative to determine keying requirements. Upon completion of initial key meeting, hardware supplier shall prepare a proposed key schedule with symbols and abbreviations as set forth in the door and hardware institute's publication "Keying Procedures, Systems, and Nomenclature". Submit copies of owner approved key schedule for review and field use in quantities as required by Division 01 - General Requirements. Wiring diagrams shall be included in final submittals transmitted for distribution of field use.

1.6 QUALITY ASSURANCE

- A. Manufacturers and model numbers listed are to establish a standard of function and quality. Similar items by approved manufacturers that are equal in design, function, and quality, may be considered for prior approval of the architect, provided the required data and physical samples are submitted for approval as set forth in Division 01 - General Requirements.
- B. Where indicated in this specification, products shall be independently certified by ANSI for compliance with relevant ANSI/BHMA standards A156.1 - A156.36 – Standards for Hardware and Specialties. All products shall meet or exceed certification requirements for the respective grade indicated within this specification. Supplier shall provide evidence of certification when requested by the architect.
- C. Obtain each type of hardware (hinges, latch & locksets, exit devices, closers, etc.) from a single manufacturer, although several may be indicated as offering products complying with requirements.
- D. Electrical drawings and electrical specifications are based on the specific electrified hardware components specified in hardware sets. When electronic hardware components other than those indicated in hardware sets are provided, the supplier shall be responsible for all costs incurred by the design team and their consultants to review and revise electrical drawings and electrical specifications. Supplier shall also be responsible for any additional costs associated with required changes in related equipment, materials, installation, or final hook up to ensure the system will operate and function as indicated in the construction documents, including hardware set operational / functional descriptions.
- E. All hardware items shall be manufactured no earlier than 6 months prior to delivery to site.
- F. Hardware supplier shall be factory trained and certified by the manufacture to provide and support all computer managed locks and system components.
- G. Installation of hardware shall be installed or directly supervised and inspected by a skilled installer certified by the manufacturer of locksets, door closers, and exit devices used on the project, or with not less than 3 years' experience in successful completion of projects similar in size and scope.
- H. Provide hardware for all labeled fire doors, which complies with positive pressure fire testing UL 10C.
- I. Comply with all applicable provisions of the standards referenced within section 1.4 of this specification.
- J. Hardware supplier shall participate when reasonably requested to meet with the contractor and or architect to inspect any claim for incorrect or non-functioning materials; following such inspection, the hardware supplier shall provide a written statement documenting the cause and proposed remedy of any unresolved items.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Hardware supplier shall deliver hardware to the job site unless otherwise specified.
- B. All hardware shall be delivered in manufacturers' original cartons and shall be clearly marked with set and door number.
- C. Coordinate with contractor prior to hardware delivery and recommend secure storage and protection against loss and damage at job site.
- D. Contractor shall receive all hardware and provide secure and proper protection of all hardware items to avoid delays caused by lost or damaged hardware. Contractor shall report shortages to the Architect and hardware supplier immediately after receipt of material at the job site.
- E. Coordinate with related trades under the direction of the contractor for delivery of hardware items necessary for factory installation.

1.8 PRE-INSTALLATION MEETING

- A. Schedule a hardware pre-installation meeting on site to review and discuss the installation of continuous hinges, locksets, door closers, exit devices, overhead stops, and electromechanical door hardware.
- B. Meeting attendees shall be notified 7 days in advance and shall include: Architect, Contractor, Door Hardware Installers (including low voltage hardware), Manufacturers representatives for above hardware items, and any other effected subcontractors or suppliers.
- C. All attendees shall be prepared to distribute installation manuals, hardware schedules, templates, and physical hardware samples.

1.9 WARRANTY

- A. All hardware items shall be warranted against defects in material and workmanship as set forth in Division 01 - General Requirements.
- B. Repair, replace, or otherwise correct deficient materials and workmanship without additional cost to owner.

PART 2 - PRODUCTS

2.1 FASTENERS

- A. All exposed fasteners shall be Phillips head or as otherwise specified and shall match the finish of the adjacent hardware. All fasteners ex-posed to the weather shall be non-ferrous or stainless steel. Furnish correct fasteners to accommodate surrounding conditions.
- B. Coordinate required reinforcements for doors and frames. Seek approval of the architect prior to furnishing through-bolts. Furnish through-bolts as required for materials not readily reinforced.

2.2 BUTT HINGES

- A. Acceptable manufacturers and respective catalog numbers:

	<u>Ives</u>	<u>Stanley</u>	<u>Hager</u>	<u>McKinney</u>
1. Standard Weight, Plain Bearing	5PB1	F179	****	T2714
2. Standard Weight, Ball Bearing	5BB1	BB179	BB1279	TB2714
3. Standard Weight, Ball Bearing, Non-Ferrous	5BB1	FBB191	BB1191	TB2314
4. Heavy Weight, Ball Bearing	5BB1HW	FBB168	BB1168	T4B3786
5. Heavy Weight, Ball Bearing, Non-Ferrous	5BB1HW	FBB199	BB1199	T4B3386

- B. Hinges shall be independently certified by ANSI for compliance with ANSI A156.1 (2006). Hinges shall meet or exceed the following ANSI grade requirements as indicated below:
 - 1. Standard Weight, Plain Bearing Hinges: Grade 3
 - 2. Standard Weight, 2 Ball Bearing Hinges: Grade 2
 - 3. Heavy Weight, 4 Ball Bearing Hinges: Grade 1
- C. Unless otherwise specified, furnish the following hinge quantities for each door leaf.
 - 1. 3 hinges for doors up to 90 inches.
 - 2. 1 additional hinge for every 30 inches on doors over 90 inches.
 - 3. 4 hinges for Dutch door applications.
- D. Unless otherwise specified, top and bottom hinges shall be located as specified in Division 08 Section "Hollow Metal Doors and Frames". Intermediate hinges shall be located equidistant from others.
- E. Unless otherwise specified, furnish hinge weight and type as follows:
 - 1. Standard weight: plain bearing hinge 5PB1 or ball bearing hinge 5BB1 for interior openings through 36 inches wide without a door closer.
 - 2. Standard weight: ball bearing hinge 5BB1 for interior opening over 36 through 40 inches wide without a door closer, and for interior openings through 40 inches wide with a door closer.

3. Heavyweight: 4 ball bearing hinge 5BB1HW for interior openings over 40 inches wide, and for all vestibule doors.
 4. Heavyweight: 4 ball bearing hinge 5BB1HWss for exterior openings unless otherwise listed in groups.
 5. Heavyweight: 4 ball bearing hinge 5BB1HWss 5" for all exterior doors or 4 ball bearing hinge 5BB1HW 5" for interior doors, that have an automatic operator.
- F. Unless otherwise specified, furnish hinges for exterior doors, fabricated from brass, bronze, or stainless steel. Unless otherwise specified, hinges for interior doors may be fabricated from steel.
- G. Unless otherwise specified, furnish hinges in the following sizes:
1. 5" x 5" 2-1/4" thick doors
 2. 4-1/2" x 4-1/2" 1-3/4" thick doors
 3. 3-1/2" x 3-1/2" 1-3/8" thick doors
- H. Furnish hinges with width to accommodate trim and allow for 180-degree swing.
- I. Unless otherwise specified, furnish hinges with flat button tips with non-rising pins. Furnish non-removable pin (NRP) hinges at all reverse-handed doors that are furnished with lockable hardware.
- J. Unless otherwise specified, furnish all hinges to template standards.

2.3 FLUSH BOLTS AND DUST PROOF STRIKES

- A. Acceptable manufacturers and respective catalog numbers:
- | | <u>Ives</u> | <u>Door Controls</u> | <u>Hager</u> |
|--|-------------|----------------------|--------------|
| 1. Dust Proof Strike | DP2 | 80 | 280X |
| 2. Auto Flush Bolt (Metal Door) | FB31P | 842 | 292D |
| 3. Auto Flush Bolt (Wood Door) | FB41P | 942 | 291D |
| 4. Constant Latching Bolt (Metal Door) | FB51P | 845 | 293D |
| 5. Constant Latching Bolt (Wood Door) | FB61P | 945 | 294D |
- B. Unless otherwise specified, provide 12" rods for manual flush bolts for door 7'6" or less, 24" top rods for doors over 7'6" to 8'6".
- C. Unless otherwise specified, provide doors over 8'6" with automatic top bolts.
- D. Provide automatic flush bolts where required to maintain fire door listing and or egress requirements on pairs of doors.
- E. All flush-bolt applications shall be UL listed to be installed with top flush-bolt only. Provide auxiliary fire bolt as required for fire rated openings where less bottom bolt has been specified.
- F. Provide all bottom flush bolts with non-locking dust proof strikes.

2.4 EXIT DEVICES

- A. Acceptable manufacturers and respective catalog numbers:
- | | <u>Von Duprin</u> | <u>No Substitution</u> |
|-------------------------|-------------------|------------------------|
| 1. Wide Stile, Push Pad | 99 Series | |
| 2. Lever Trim | 996 Series | |
| 3. Pull Trim | 990 Series | |
- A. Exit devices shall be independently certified by ANSI for compliance with ANSI A156.3, Grade 1 (2008).
- B. Obtain exit devices from a single manufacturer, although several may be indicated as offering products complying with requirements.
- C. All exit devices shall be equipped with a sound-dampening feature to reduce touch pad return noise.

- D. Quiet Electric Latch Retraction shall be accomplished using a motor driven assembly, and shall incorporate the following features:
 - 1. Motor shall retract both the push pad assembly and latchbolt.
 - 2. Automatic calibration of latch throw and pull.
 - 3. Built-in time delay.
 - 4. On-board installation and troubleshooting diagnostics built into power supply and device.
 - 5. Retry mode if device does not pull on the first try.
- E. On full glass doors there shall be no exposed fasteners on the back of the mechanism visible through the glass.
- F. All exit devices shall be provided with flush end caps to reduce potential damage from impact.
- G. All exit devices shall be provided with dead-locking latch bolts to ensure security.
- H. All exit devices shall be U.L. listed for accident hazard. Exit device for use on fire doors shall also be U.L. listed for fire exit hardware.
- I. Provide optional strikes, special length rods, and adapter plates to accommodate door and frame conditions. Provide narrow style series devices in lieu of wide stile series devices where optional strikes will not accommodate door and frame conditions.
- J. Coordinate with related trades to ensure adequate clearance and reinforcement is provided in doors and frames. Provide thru bolts as required.
- K. Refer to hardware groups for exit device applications utilizing the option of: "less bottom rod and floor strike" (LBR)
- L. All exit devices shall be provided with optional trim designs to match other lever and pull designs used on the project.
- M. Unless specific exit device dogging options are noted within hardware sets, provide dogging options as follows:
 - 1. Fire Rated devices: Dogging not permitted.
 - 2. Non-Rated Exit Only functions not equipped with outside trim or pull: Less Dogging.
 - 3. Non-Rated Classroom functions: Less Dogging.
 - 4. Non-Rated devices utilizing electric latch retraction or electrified outside trim: Less Dogging.
 - 5. All Other Non-Rated devices: Cylinder Dogging utilizing interchangeable core cylinders. Cylinder keyway shall match locksets furnished on this project (Best 7-pin small format).
- N. Provide glass bead kits as required to accommodate door conditions. Screws shall not be visible through full glass doors.
- O. Where specified, provide compatible keyed mullions with cylinder for pairs of doors.
- P. Provide Von Duprin #154 or equivalent mullion stabilizers at all doors with removable mullions.
- Q. Provide reinforced crossbars for all traditional style exit devices applied to doors over 36" wide.

2.5 LOCKS AND LATCHES

- A. Acceptable manufacturers and respective catalog numbers:

	<u>Schlage</u>	<u>Best</u>	<u>No Substitution</u>
1. Grade 1 Cylindrical	ND Series SPA	9K Series 14D	
- B. Bored locks shall be independently certified by ANSI for compliance with ANSI A156.2 (2011).
- C. Mortise locks shall be independently certified by ANSI for compliance with ANSI A156.13 (2012).
- D. Provide full narrow escutcheon at mortise locks with indicators.
- E. Minimize transmission of heat to lock trim. Provide temperature control modules (TCM) on all electrified locks when cataloged by the lock manufacturer.
- F. Unless otherwise specified, all locks and latches to have:

1. 2-3/4" Backset
 2. 1/2" minimum throw latchbolt
 3. 1" throw deadbolt
 4. ANSI A115.2 strikes
- G. Provide guarded latch bolts for all locksets, and latch bolts with throw to maintain fire rating of both single and paired door assemblies.
- H. Provide strike with lip length adequate to clear surrounding trim.
- I. Provide wrought boxes for strikes at inactive doors, wood frames, and metal frames without integral mortar covers.
- J. All locks to be compatible with Owner's Best 7-PIN small format Master Keying system.

2.6 COORDINATORS

- A. Acceptable manufacturers and respective catalog numbers:
- | | <u>Ives</u> | <u>Door Controls</u> | <u>Hager</u> |
|---------------------|-------------|----------------------|--------------|
| 1. Bar Coordinator | COR x FL | 600 x Filler | 297D x 297F |
| 2. Mounting Bracket | MB Series | AB, C Series | 297 Series |
- B. Provide coordinators at all pairs of doors having automatic flush bolts and closers on the inactive leaf, and for pairs of doors having vertical rod/mortise exit device combinations with overlapping astragals.
- C. Provide appropriate filler bars, closer mounting brackets, carry bars, and special top latch preparations as required by adjacent hardware.

2.7 CLOSERS

- A. Acceptable manufacturers and respective catalog numbers:
- | <u>LCN</u> | <u>No Substitution</u> |
|------------------------|------------------------|
| 1. 4040XP / 4040XP EDA | |
- B. Door closers shall be independently certified by ANSI for compliance with ANSI A156.4, Grade 1 (2013).
- C. Obtain door closers from a single manufacturer, although several may be indicated as offering products complying with requirements.
- D. Provide extra heavy-duty arm (EDA / HD) when closer is to be installed using parallel arm mounting.
- E. Hardware supplier shall coordinate with related trades to ensure aluminum frame profiles will accommodate specified door closers.
- F. Provide "SPECIAL TEMPLATE - #1728 / #0723" closer arms as required to accommodate aluminum frame head details with "non-structural stops" when closers will be required to utilize parallel arm mounting positions. Frame mounting shoe shall be shortened, and pivot hub height shall be increased to permit frame mounted shoe to be positioned on frame rabbit (rather than the frame stop), and behind the frame stop rather than on top of the frame stop. Contact LCN Door Closers at: 877-671-7011 for pricing and design assistance.
- G. Closers shall use high strength cast iron cylinders, forged main arms, and one-piece forged steel pistons.
- H. Closers shall utilize a stable fluid withstanding temperature range of +120deg F to -30deg F without seasonal adjustment of closer speed to properly close the door. Closers for fire-rated doors shall be provided with temperature stabilizing fluid that complies with standards UL10C.
- I. Unless otherwise specified, all door closers shall have full covers and separate adjusting valves for sweeps, latch, and backcheck.

- J. Provide closers for all labeled doors. Provide closer series and type consistent with other closers for similar doors specified elsewhere on the project.
- K. Provide closers with adjustable spring power. Size closers to ensure exterior and fire rated doors will consistently close and latch doors under existing conditions. Size all other door closers to allow for reduced opening force not to exceed 5 lbs.
- L. Install closers on the room side of corridor doors, stair side of stairways and interior side of exterior doors.
- M. Closers shall be furnished complete with all mounting brackets and cover plates as required by door and frame conditions, and by adjacent hardware.
- N. Door closers shall be provided with a powder coat finish to provide superior protection against the effects of weathering. Powder coat finish shall successfully pass a 100-hour salt spray test.
- O. Closers with pressure relief valve (PRV) shall not be acceptable.

2.8 KICK PLATES AND MOP PLATES

- A. Furnish protective plates as specified in hardware groups.
- B. Where specified, provide 10" kick plates, 34" armor plates, and 4" mop plates. Unless otherwise specified, metal protective plates shall be .050" thick; plastic plates shall be 1/8" thick.
- C. Protective plates shall be 2" less door width, or 1" less door width at pairs. All protective plates shall be beveled 4 sides and counter sunk.
- D. Protection plates over 16" shall not be provided for labeled doors unless specifically approved by door manufacturers listing. When protection plates over 16" are provided for labeled doors, the plate shall be labeled.
- E. Where specified, provide surface mounted door edges. Edges shall butt to protective plates. Provide edges with cutouts as required adjacent hardware.
- F. Adjust dimensions of protection plates to accommodate stile and rail dimensions, lite and louver cutouts, and adjacent hardware. Where required by adjacent hardware, protection plates shall be factory drilled for cylinders or other mortised hardware.

2.9 OVERHEAD STOPS

- A. Acceptable manufacturers and respective catalog numbers:

	<u>Glynn-Johnson</u>	<u>Rixson</u>	<u>Sargent</u>
1. Heavy Duty Surface Mount	GJ900 Series	9 Series	590
- B. Unless otherwise specified, furnish GJ900 series overhead stop for hollow metal or 1-3/4" solid core doors equipped with regular arm surface type closers that swing more than 140 degrees before striking a wall, for hollow metal or 1-3/4" solid core doors that open against equipment, casework, sidelights, or other objects that would make wall bumpers inappropriate, and as specified in hardware groups.
- C. Furnish sex bolt attachments for wood and mineral core doors unless doors are supplied with proper reinforcing blocks.
- D. Provide special stop only ("SE" suffix) overhead stops when used in conjunction with electronic hold open closers.
- E. Do not provide holder function for labeled doors.

2.10 WALL STOPS AND HOLDERS

- A. Acceptable manufacturers and respective catalog numbers:

	<u>Ives</u>	<u>Hager</u>	<u>Burns</u>
1. Wrought Convex Wall Stop	WS406CVX	232W	570
2. Wrought Concave Wall Stop	WS406CCV	236W	575

- | | | | |
|--------------------------|------|------|-----|
| 3. Automatic Wall Holder | WS40 | 326W | 533 |
|--------------------------|------|------|-----|
- B. Furnish a stop or holder for all doors.
 - C. Provide concave style wall stop at all adjacent integral push button locks; provide convex style wall stop at all other locations.
 - D. Where wall stops are not applicable, furnish overhead stops.
 - E. Furnish floor stops only where specified in hardware sets.
 - F. Do not provide holder function for labeled doors.

2.11 WEATHERSTRIP, GASKETING

- A. Acceptable manufacturers and respective catalog numbers:

	<u>Zero</u>	<u>Pemko</u>	<u>NGP</u>	<u>Reese</u>
1. Adhesive Gasket	188	S88	5050	797
- B. Weatherstrip and gasketing shall be independently certified by ANSI for compliance with ANSI A156.22 (2005).
- C. Where specified in the hardware groups, furnish the above products unless otherwise detailed in groups.
- D. Provide weatherstripping all exterior doors and where specified in hardware sets.
- E. Provide intumescent and other required edge sealing systems as required by individual fire door listings to comply with positive pressure standards UL 10C.
- F. Provide Zero 188 smoke gaskets at all fire rated doors and smoke and draft control assemblies.
- G. Provide gasketing for all meeting edges on pairs of fire doors. Gasketing shall be compatible with astragal design provided by door supplier as required for specific fire door listings.

2.12 ELECTRIC STRIKES

- A. Acceptable manufacturers and respective catalog numbers:

	<u>Von Duprin</u>	<u>HES</u>
1. Type 1	6300 Series	9500 Series
- B. Provide electric strikes compatible with the type of locks shown at each opening where specified.
- C. Electric strikes shall be UL listed as Burglary-Resistant Electric Door Strikes and where required shall be UL listed as Electric Strike for Fire Doors.
- D. Provide transformers and rectifiers for each strike as required. Verify voltage with electrical contractor.

2.13 POWER SUPPLIES

- A. Provide quantities and types as specified in hardware sets. Shared power supplies will not be accepted without prior approval from the owner.
- B. All power supplies shall have the following features:
 - 1. 12/24 VDC Output, field selectable.
 - 2. Class 2 Rated power limited output.
 - 3. Universal 120-240 VAC input.
 - 4. Low voltage DC regulated and filtered.
 - 5. Polarized connector for distribution boards.
 - 6. Fused primary input.
 - 7. AC input and DC output monitoring circuit w/LED indicators.
 - 8. Cover mounted AC Input indication.
 - 9. Tested and certified to meet UL294.
 - 10. NEMA 1 enclosure.
 - 11. Hinged cover w/lock down screws.

12. High voltage protective cover.
- C. All power supplies shall incorporate fused distribution boards.
- D. All electro-mechanical systems requiring fail safe circuits shall be capable of interfacing with the fire alarm system to cut power to appropriate system components. Unless already provided in another system component, all power supplies utilized in fail safe circuits shall include an integral relay which when connected to the N/C fire alarm contact will cut power to all openings connected to the individual power supply. Power supply, unless otherwise specified, will automatically reset itself when fire alarm relay returns to normal state following a fire alarm.

2.14 FINISHES AND BASE MATERIALS

- A. Unless otherwise indicated in the hardware groups or herein, hardware finishes shall be applied over base metals as specified in the following finish schedule:

<u>HARDWARE ITEM</u>	<u>BHMA FINISH</u>
1. Butt Hinges: Interior	652 (US26D - Satin Chromium)
2. Flush Bolts	626 (US26D - Satin Chromium)
3. Exit Devices	626 (US26D - Satin Chromium)
4. Locks and Latches	626 (US26D - Satin Chromium)
5. Pulls and Push Plates/Bars	630 (US32D - Satin Stainless Steel)
6. Coordinators	600 (Prime painted or mill alum.)
7. Closers	689 (Powder Coat Aluminum)
8. Protective Plates	630 (US32D - Satin Stainless Steel)
9. Overhead Stops	630 (US32D - Satin Stainless Steel)
10. Wall Stops and Holders	630 (US32D - Satin Stainless Steel)
11. Miscellaneous	626 (US26D - Satin Chromium)

2.15 KEYING

- A. Acceptable manufacturers and respective catalog numbers:
- Best No Substitution
- B. Provide all locks and cylinders in keyways as required to accommodate owners existing Best master key system.
- C. All locks under this section shall be keyed as directed by the Owner to match Owner's Best 7-pin small format master key system.
- D. Keying shall be by lock manufacturer where permanent records shall be kept.
- E. Provide temporary brass construction cores for all exterior lock cylinders. Provide 10% additional temporary cores and or cylinders as required to provide secure storage locations during construction.
- F. Furnish a total of 2 keys per cylinder. Actual cut keys to be determined by owner.
- G. Permanent cylinder cores shall be installed by the owner, or owner's representative. Temporary cylinders and cores shall be returned to the distributor once permanent cores have been installed.
- H. Permanent master keys, control keys, and change keys shall be delivered by registered mail to the owner. Construction keys shall be delivered to the contractor.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Prior to installation of hardware, installer shall examine door frame installation to ensure frames have been set square and plumb. Installer shall examine doors, door frames, and adjacent wall, floor, and ceiling for conditions, which would adversely affect proper operation and function of door assemblies. Do not proceed with hardware installation until such deficiencies have been corrected.

3.2 INSTALLATION

- A. Before hardware installation, general contractor/construction manager shall coordinate a hardware installation seminar with a 1 week notice to all parties involved. The seminar is to be conducted on the installation of hardware, specifically of locksets, closers, exit devices, continuous hinges and overhead stops. Manufacturer's representative of the above products to present seminar. Seminar to be held at the job site and attended by installers of hardware (including low voltage hardware) for aluminum, hollow metal and wood doors. Training to include use of installation manuals, hardware schedule, templates and physical products samples.
- B. Provide blocking or reinforcement for all hardware mounted to drywall construction, including wall mounted door stops and holders.
- C. Shim doors as required to maintain proper operating clearance between door and frame.
- D. Install all hardware in accordance with the approved hardware schedule and manufacturer's instructions for installation and adjustment.
- E. Set units level, plumb and true to the line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.
- F. Drill and countersink units which are not factory-prepared for anchorage fasteners. Space fasteners and anchors in accord with industry standards.
- G. Drill appropriate size pilot holes for all hardware attached to wood doors and frames.
- H. Unless otherwise specified, locate all hardware in accordance with the recommended locations for builders hardware for standard doors and frames as published by the Door and Hardware Institute.
- I. Use only fasteners supplied by or approved by the manufacturer for each respective item of hardware.
- J. Conceal push and pull bar fasteners where possible. Do not install through bolts through push plates.
- K. Install hardware on UL labeled openings in accordance with manufacturer's requirements to maintain the label.
- L. Apply self-adhesive gasketing on frame stop at head & latch side and on rabbet of frame at hinge side.
- M. Install hardware in accordance with supplemental "S" label instructions on all fire rated openings.
- N. Install wall stops to contact lever handles or pulls. Do not mount wall stops on casework, or equipment.
- O. Where necessary, adjust doors and hardware as required to eliminate binding between strike and latchbolt. Doors should not rattle.
- P. Overhead stops used in conjunction with electrified hold open closers shall be templated and installed to coincide with engagement of closer hold open position.
- Q. Install door closers on corridor side of lobby doors, room side of corridor doors, and stair side of stairways.
- R. Adjust spring power of door closers to the minimum force required to ensure exterior and fire rated doors will consistently close and latch doors under existing conditions. Adjust all other door closers to ensure opening force does not to exceed 5 lbs.
- S. Adjust "sweep", "latch", & "back check" valves on all door closers to properly control door throughout the opening and closing cycle. Adjust total closing speed as required to comply with all applicable state and local building codes.

- T. Install "hardware compatible" (bar stock) type weatherstripping continuously for an uninterrupted seal. Adjust templating for parallel arm door closers, exit devices, etc., as required to accommodate weatherstripping.
- U. Unless otherwise specified or detailed, install thresholds with the bevel in vertical alignment with the outside door face. Notch and closely fit thresholds to frame profile. Set thresholds in full bed of sealant.
- V. Compress sweep during installation as recommended by sweep manufacturer to facilitate a water-resistant seal.
- W. Deliver to the owner 1 complete set of installation and adjustment instructions, and tools as furnished with the hardware.

3.3 FIELD QUALITY CONTROL

- A. After installation has been completed, the hardware supplier and manufacturer's representative for locksets, door closers, exit devices, and overhead stops shall check the project and verify compliance with installation instructions, adjustment of all hardware items, and proper application according to the approved hardware schedule. Hardware supplier shall submit a list of all hardware that has not been installed correctly.
- B. After installation has been completed, the hardware supplier and manufacturer's representative shall meet with the owner to explain the functions, uses, adjustment, and maintenance of each item of hardware. Hardware supplier shall provide the owner with a copy of all wiring diagrams. Wiring diagrams shall be opening specific and include both a riser diagram and point to point diagram showing all wiring terminations.

3.4 ADJUSTMENT AND CLEANING

- A. At final completion, and when H.V.A.C. equipment is in operation, installer shall make final adjustments to and verify proper operation of all door closers and other items of hardware. Lubricate moving parts with type lubrication recommended by the manufacturer.
- B. All hardware shall be left clean and in good operation. Hardware found to be disfigured, defective, or inoperative shall be repaired or replaced.

3.5 HARDWARE SCHEDULE

- A. The following schedule of hardware groups are intended to describe opening function. The hardware supplier is cautioned to refer to the preamble of this specification for a complete description of all materials and services to be furnished under this section

HW SET: 01

QTY		DESCRIPTION	CATALOG NUMBER	MFR
	EA	CONTINUOUS HINGE	AS REQUIRED	IVE
1	EA	PRIVACY LOCK W/ IND	ND73 OS-OCC	SCH
1	EA	SURFACE CLOSER	4040XP / 4040XP EDA	LCN
1	EA	KICK PLATE	8400 10"	IVE
1	EA	WALL STOP	WS406	IVE
1	EA	PERIMETER GASKET	188S	ZER

FUNCTION: PUSHBUTTON LOCKS OUTSIDE LEVER. ROTATING INSIDE LEVER OR CLOSING THE DOOR RELEASES PUSHBUTTON AND OUTSIDE LEVER IS UNLOCKED. KEY OUTSIDE LOCKS/UNLOCKS LEVER. OUTSIDE INDICATOR DISPLAYS OCCUPIED/VACANT. INSIDE LEVER IS ALWAYS UNLOCKED.

END OF SECTION

GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Gypsum board and/or metal stud assemblies, including framing, fasteners, bracing, acoustical sealant, etc.
- B. Acoustic insulation.
- C. Gypsum wallboard at walls, ceilings, soffits, dropped headers and over wood members at roof openings.
- D. Joint treatment and accessories.
- E. Patching of openings indicated in the documents, and where electrical or other items are removed from existing gyp. bd., leaving holes larger than 1 inch in any dimension.
- F. Fiberglas Composite Panels.
- G. Cementitious tile backer board at all new wall tile on all steel stud framed partitions.

1.2 RELATED REQUIREMENTS

- A. Section 06 1000 - Rough Carpentry: Wood blocking product and execution requirements.
- B. Section 07 9005 - Joint Sealers: Acoustic sealant.

1.3 REFERENCE STANDARDS

- A. Not used
- B. ANSI A108.11 - American National Standard for Interior Installation of Cementitious Backer Units; 1999 (R2005).
- C. Not used
- D. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board; 2002 (Reapproved 2007).
- E. Not used
- F. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2006.
- G. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products; 2009a.
- H. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board; 2008.
- I. ASTM C1396/C1396M - Standard Specification for Gypsum Board; 2009a.
- J. ASTM E72 - Standard Test Methods of Conducting Strength Tests of Panels for Building Construction; 2010.
- K. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2009.
- L. ASTM E413 - Classification for Rating Sound Insulation; 2010.
- M. GA-216 - Application and Finishing of Gypsum Board; Gypsum Association; 2010.
- N. GA-226 - Application of Gypsum Board to Form Curved Surfaces; Gypsum Association; 2008.
- O. GA-600 - Fire Resistance Design Manual; Gypsum Association; 2009.

P. ICC (IBC) - International Building Code; 2009.

Q. UL (FRD) - Fire Resistance Directory; Underwriters Laboratories Inc.; current edition.

1.4 Not used

1.5 QUALITY ASSURANCE

A. Fire-Test-Response Characteristics: For gypsum board assemblies with fire-resistance ratings, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction. Products used in the assembly shall carry a classification label from a testing laboratory acceptable to authority having jurisdiction. Maintain one copy of all installation standards at project site.

B. Sound Transmission Characteristics: For gypsum board assemblies with STC ratings, provide materials and construction identical to those tested in assembly indicated according to ASTM E 90 and classified according to ASTM E 413 by a qualified independent testing agency.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in original packages, containers, or bundles bearing brand name and identification of manufacturer or supplier.

B. Store materials inside under cover and keep them dry and protected against damage from weather, direct sunlight, surface contamination, corrosion, construction traffic, and other causes. Stack gypsum panels flat to prevent sagging.

C. Deliver materials in original packages, containers, or bundles bearing brand name and identification of manufacturer or supplier.

D. Store materials inside under cover and keep them dry and protected against damage from weather, direct sunlight, surface contamination, corrosion, construction traffic, and other causes. Stack gypsum panels flat to prevent sagging.

PART 2 PRODUCTS

2.1 BOARD MATERIALS

A. Manufacturers - Gypsum-Based Board:

1. Georgia-Pacific Gypsum LLC; www.gp.com/gypsum.
2. National Gypsum Company; www.nationalgypsum.com.
3. United States Gypsum; www.usg.com.

B. Gypsum Wallboard: Basis of Design: National Gypsum Gold Bond® BRAND Hi-Abuse XP® Gypsum Board. Comparable products by Georgia-Pacific or United States Gypsum may be allowed subject to review of moisture and abuse resistance characteristics and product composition by the Architect.

1. Panel Physical Characteristics:

- a. Core: Regular gypsum core
- b. Thickness: 5/8 inch
- c. Long Edges: Tapered.
- d. Mold Resistance: 10 when tested in accordance with ASTM D 3273
- e. Flexural Strength - Parallel: 45 lbs, when tested in accordance with ASTM C 473
- f. Humidified Deflection: less than 5/8 inch when tested in accordance with ASTM C 473
- g. Nail pull resistance: 80 lbs, when tested in accordance with ASTM C 473
- h. Water Absorption: less than 5 percent when tested in accordance with ASTM C 473
- i. Permeance: greater than 37 perms, when tested in accordance with ASTM E 96
- j. Combustibility: Noncombustible when tested in accordance with ASTM E 136

- k. Flame spread/Smoke Developed: 0/0 when tested in accordance with ASTM E 84
 - l. Environmental Requirements: Provide products that comply with testing and product requirements for low emitting materials
- 1. Application: Use for all vertical surfaces 10'-0" AFF and below.
 - 2. Thickness:
 - a. Vertical Surfaces: 5/8 inch.
 - b. Ceilings: 5/8 inch.
- C. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
- 1. Application: Use for horizontal and vertical surfaces above 10'-0" AFF, unless otherwise indicated.
 - 2. At Assemblies Indicated with Fire-Rating: Use type required by indicated tested assembly; if no tested assembly is indicated, use Type X board, UL or WH listed.
 - 3. Thickness:
 - a. Vertical Surfaces: 5/8 inch.
 - b. Ceilings: 5/8 inch.
- D. Tile backer board
- 1. Rigid substrate 5/8" thick made of Portland cement, aggregate and glass mesh that provides an exceptionally hard, durable surface that is able to withstand prolonged exposure to moisture, in accordance with ASTM C1325 or ANSI A118.9 specifications. Provide at all locates where new tile is being installed on a new or modified surface.
 - a. National Gypsum Company PermaBase
 - b. United States Gypsum Board Company, Durock

2.3 ACCESSORIES

- A. Acoustic Insulation: ASTM C665; preformed glass fiber, friction fit type, unfaced.
- B. Acoustic Sealant: As specified in Section 07 9005.
- C. Water-Resistive Barrier: As specified in Section 07 2500.
- D. Joint Materials: ASTM C475 and as recommended by gypsum board manufacturer for project conditions.
 - 1. Ready-mixed vinyl-based joint compound.
 - 2. Chemical hardening type compound.
- E. High Build Drywall Surfer: Vinyl acrylic latex-based coating for spray application, designed to take the place of skim coating and separate paint primer in achieving Level 5 finish.
- F. Textured Finish Materials: Latex-based compound; plain.
- G. Screws: ASTM C 1002; self-piercing tapping type; cadmium-plated for exterior locations.
- H. Wall gasket: 1/4" thick Neoprene Isolation Gasket Tape, high density closed cell foam manufactured for sound isolation. Provide at all walls intersecting window mullions, concrete, CMU or similar surfaces.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that project conditions are appropriate for work of this section to commence.
- B. 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.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

- D. Suspended Ceilings: Coordinate installation of ceiling suspension systems with installation of overhead structure to ensure that inserts and other provisions for anchorages to building structure have been installed to receive ceiling hangers at spacing required to support ceilings and that hangers will develop their full strength.

3.2 ACOUSTIC ACCESSORIES INSTALLATION

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

3.3 BOARD INSTALLATION

- A. Comply with ASTM C 840. Install to minimize butt end joints, especially in highly visible locations.
- B. Single-Layer Non-Rated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.
- C. Fire-Rated Construction: Install gypsum board in strict compliance with requirements of assembly listing.
- D. Exterior Soffit Board: Install perpendicular to framing, with staggered end joints over framing members or other solid backing.
- E. Cementitious Backing Board: Install over steel framing members and plywood substrate where indicated, in accordance with ANSI A108.11 and manufacturer's instructions.
- F. Installation on Metal Framing: Use screws for attachment of all gypsum board.
- G. Install gypsum board on neoprene sound isolation tape around and across window sills to meet window mullions where walls are indicated to terminate at window mullions. Face of wall toward window mullion to receive gypsum board and be fully finished.
- H. Curved Surfaces: Apply gypsum board to curved substrates in accordance with GA-226.
- I. Moisture Protection: Treat cut edges and holes in moisture resistant gypsum board with sealant.
- J. All gypsum board is to be installed with a ½" gap between the bottom of the gypsum board panel and the finished floor.**

3.6 INSTALLATION OF TRIM AND ACCESSORIES

- A. Control Joints: Place control joints consistent with lines of building spaces and as indicated and at a spacing of not more than 30 feet where there is no other relief.
- B. Corner Beads: Install at external corners, using longest practical lengths.
- C. Wall gasket: Install ¼" thick Neoprene Isolation Gasket Tape on the faces of all intersecting window mullions, and on window sills where walls cross over sills.

3.7 JOINT TREATMENT

- A. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
 - 1. Level 4: Walls and ceilings to receive paint finish or wall coverings, unless otherwise indicated.
 - 2. Level 3: Walls to receive textured wall finish.
 - 3. Level 2: In utility areas, behind cabinetry, and on backing board to receive tile finish.
 - 4. Level 1: Fire rated wall areas above finished ceilings, whether or not accessible in the completed construction.

- B. Finish gypsum board in scheduled areas in accordance with levels defined in ASTM C 840 and as scheduled below.
 - 1. Above Finished Ceilings Concealed From View: Level 1.
 - 2. Utility Areas and Areas behind Cabinetry: Level 2.
 - 3. Walls to Receive Textured Wall Finish: Level 3.
 - 4. Walls and Ceilings to Receive Flat or Eggshell Paint Finish: Level 4.
 - 5. Walls and Ceilings to Receive Semi-Gloss or Gloss Paint Finish: Level 5.
- C. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
 - 1. Feather coats of joint compound so that camber is maximum 1/32 inch.
 - 2. Taping, filling, and sanding is not required at surfaces behind adhesive applied ceramic tile and fixed cabinetry.
 - 3. Taping, filling and sanding is not required at base layer of double layer applications.
- D. Where Level 5 finish is indicated, spray apply high build drywall surfacer over entire surface after joints have been properly treated; achieve a flat and tool mark-free finish.
- E. Fill and finish joints and corners of cementitious backing board as recommended by manufacturer.

3.8 TOLERANCES

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

END OF SECTION

TILING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Tile patching at walls and floors were necessary to accommodate the Work. Tile will come from Owner's stock.

1.2 RELATED REQUIREMENTS

- A. Section 07 9005 - Joint Sealers.

1.3 REFERENCE STANDARDS

- A. ANSI A108 Series/A118 Series/A136.1 - American National Standard Specifications for the Installation of Ceramic Tile (Compendium); 2005.
 - 1. ANSI A108.1a - American National Standard Specifications for Installation of Ceramic Tile in the Wet-Set Method, with Portland Cement Mortar; 2005.
 - 2. ANSI A108.1b - American National Standard Specifications for Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex Portland Cement Mortar; 1999 (R2005).
 - 3. ANSI A108.4 - American National Standard Specifications for Installation of Ceramic Tile with Organic Adhesives or Water Cleanable Tile-Setting Epoxy Adhesive; 1999 (R2005).
 - 4. ANSI A108.5 - American National Standard Specifications for Installation of Ceramic Tile with Dry-Set Portland Cement Mortar or Latex-Portland Cement Mortar; 1999 (R2005).
 - 5. ANSI A108.6 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant, Water Cleanable Tile-Setting and -Grouting Epoxy; 1999 (R2005).
 - 6. ANSI A108.8 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant Furan Resin Mortar and Grout; 1999 (R2005).
 - 7. ANSI A108.9 - American National Standard Specifications for Installation of Ceramic Tile with Modified Epoxy Emulsion Mortar/Grout; 1999 (R2005).
 - 8. ANSI A108.10 - American National Standard Specifications for Installation of Grout in Tilework; 1999 (R2005).
 - 9. ANSI A108.11 - American National Standard for Interior Installation of Cementitious Backer Units; 1999 (R2005).
 - 10. ANSI A118.3 - American National Standard Specifications for Chemical Resistant, Water Cleanable Tile Setting and -Grouting Epoxy and Water Cleanable Tile-Setting Epoxy Adhesive; 1999 (R2005).
 - 11. ANSI A118.4 - American National Standard Specifications for Latex-Portland Cement Mortar; 1999 (R2005).
 - 12. ANSI A118.7 - American National Standard Specifications for Polymer Modified Cement Grouts for Tile Installation; 1999 (R2005).
 - 13. ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units; 1999 (R2005).
 - 14. ANSI A136.1 - American National Standard for Organic Adhesives for Installation of Ceramic Tile; 1999 (R2005).
 - 15. ANSI A137.1 - American National Standard Specifications for Ceramic Tile; 2008.
- B. TCNA (HB) - Handbook for Ceramic Tile Installation; 2010.

1.4 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene a preinstallation meeting two weeks before starting work of this section; require attendance by all affected installers.

1.5 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Samples: Provide samples of grout and all tile
- C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- D. Maintenance Data: Include recommended cleaning methods, cleaning materials, stain removal methods, and polishes and waxes.
- E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 6000 - Product Requirements, for additional provisions.
 - 2. Extra Tile: 2 percent of each size, color, and surface finish combination, but not less than 6 of each type.

1.6 QUALITY ASSURANCE

- A. Maintain one copy of The Tile Council of North America Handbook and ANSI A108 Series/A118 Series on site.
- B. Company Qualifications: Company specializing in performing tile installation, with minimum of 5 years of documented experience.
- C. Installer Qualifications: Work shall be performed only by mechanics trained, skilled and experienced in performing tile installation, with minimum of 5 years of documented experience.

1.7 DELIVERY, STORAGE, AND HANDLING

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

1.8 FIELD CONDITIONS

- A. Do not install adhesives in an unventilated environment.
- B. Maintain ambient and substrate temperature of 50 degrees F minimum and 75 degrees F maximum during installation and within 24 hours of tile, mortar and grout materials. Humidity in spaces to receive tile shall not exceed that recommended by manufacturers of grout or tile.

1.9 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Floor Tile Units: Furnish quantity of full sized units equal to 2 percent of amount installed for each type, color, pattern and size indicated.
 - 2. Wall Tile Units: Furnish quantity of full sized units equal to 2 percent of amount installed for each type, color, pattern and size indicated.

1.10 WARRANTY

- A. The manufacturer of the installation products shall warrant that their brand Installation System for a period of 10 years (effective from the date of installation).will not transfer cracks from the substrate through the tile or stone, or through the grout and will maintain the bond between the tile and the approved substrate, under normal use, when subjected to in-plane movement of cracks up to 1/8".

PART 2 PRODUCTS

2.1 TILE

A. Daltile Porcelato Graniti Floor and wall tile to come from Owner's attic stock.

1. Grigio Scuro CD42 at floors, base and wall accent tile bands.
2. Beige CD31 at typical walls.

2.2 NOT USED

2.3 ADHESIVE MATERIALS

A. Manufacturers:

1. Bonsal American, Inc: www.sakrete.com
2. Bostik Inc: www.bostik-us.com.
3. Mapei Corporation; www.mapei.com.
4. Substitutions: See Section 01 6000 - Product Requirements.

2.4 MORTAR MATERIALS

A. Manufacturers:

1. Bonsal American, Inc: www.sakrete.com
2. Bostik Inc: www.bostik-us.com.
3. Custom Building Products: www.custombuildingproducts.com.
4. Substitutions: See Section 01 6000 - Product Requirements.

B. Mortar Bed Materials: Portland cement, sand, latex additive, and water.

C. Mortar Bond Coat Materials:

1. Latex-Portland Cement type: ANSI A118.4.

2.5 GROUT MATERIALS

A. Grout:

1. Bostik Inc; Product TruColor Pre-mixed Grout: www.bostik-us.com.
2. TEC; Product AccucolorXT(unsanded at walls, sanded on floors).
3. Mapei; Product Keracolor S.
4. Laticrete; Product Tri-Poly Series 1500.
5. Substitutions: See Section 01 6000 - Product Requirements.

B. Grout: Polymer modified cement grout, sanded as specified in ANSI A118.7.

1. Colors:
 - a. Tec Charcoal 929 at Grigio Scuro tile
 - b. Tec Almond 984 at Beige tile

2.6 ACCESSORY MATERIALS

A. Joint Sealant: One part silicone sanitary sealant - Dow Corning 786 or G.E. Silicones SCS1700.or TEC AccuColor 100% Silicone Sealant. Color as selected by Architect to match adjacent tile.

1. Provide sealant at all vertical corners at ceramic tile walls.

B. Patching and Leveling Products:

1. VersaPatch® Latex Modified Floor Patch and Leveler (327), as part of the TEC brand installation system.
2. Exterior Applications only: Primer and Patch Additive (861), as part of the TEC brand installation system.

3. Substitution: See Section 01 6000 Product Requirements.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that sub-floor surfaces are smooth and flat within the tolerances specified for that type of work and are ready to receive tile.
- B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive tile.
- C. Verify that sub-floor surfaces are dust-free and free of substances that could impair bonding of setting materials to sub-floor surfaces. Commencement of work implies acceptance of surface and assumption of responsibility for an acceptable installation.
- D. Verify that concrete sub-floor surfaces are ready for tile installation by testing for moisture emission rate and alkalinity; obtain instructions if test results are not within limits recommended by tile manufacturer and setting materials manufacturer.
- E. Verify that required floor-mounted utilities (i.e. Floor Drains etc.) are in correct location.

3.2 PREPARATION

- A. Protect surrounding work from damage.
- B. Vacuum clean surfaces and damp clean.
- C. Seal substrate surface cracks with filler. Level existing substrate surfaces to acceptable flatness tolerances.
- D. Install cementitious backer board in accordance with ANSI A108.11 and board manufacturer's instructions. Tape joints and corners, cover with skim coat of dry-set mortar to a feather edge.

3.3 INSTALLATION - GENERAL

- A. Install tile and thresholds and grout in accordance with applicable requirements of ANSI A108.1 through A108.13, manufacturer's instructions, and The Tile Council of North America Handbook recommendations.
- B. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners and bases neatly. Align floor and base joints.
- C. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make joints watertight, without voids, cracks, excess mortar, or excess grout.
- D. Form internal angles square and external angles bullnosed.
- E. Sound tile after setting. Replace hollow sounding units.
- F. Keep expansion joints free of adhesive or grout. Apply sealant to joints.
- G. Allow tile to set for a minimum of 48 hours prior to grouting.
- H. Grout all tile joints except where indicated to receive sealant.
- I. Apply sealant to junction of tile and dissimilar materials and junction of dissimilar planes.
- J. Provide sealant joints all vertical corners, expansion joints, control joints, joints between tile and dissimilar materials, and between two adjacent dissimilar tiles.

3.6 INSTALLATION - WALL TILE

- A. Over cementitious backer units on studs, install in accordance with The Tile Council of North America Handbook Method W244, using membrane at toilet rooms.
- B. Over interior concrete and masonry install in accordance with The Tile Council of North America

Handbook Method W202, thin-set with dry-set or latex-Portland cement bond coat.

- C. Over gypsum wallboard on wood or metal studs install in accordance with The Tile Council of North America Handbook Method W243, thin-set with dry-set or latex-portland cement bond coat, unless otherwise indicated.
- D. Grout joint thickness:
 - 1. Glazed wall tile: 1/16"
 - 2. Unglazed wall tile: 3/16"
- E. Factory-provided spacers to be used at all times. Spacers shall remain in place until setting materials have fully secured the tile against movement.

3.7 CLEANING

- A. Clean tile and grout surfaces in accord with the applicable portions of ANSI A 108.10..
- B. Seal tile joints when permissible by manufacturer's recommendations.

3.8 PROTECTION

- A. Cover tile with continuous hardboard after installation.
- B. Do not permit traffic over finished floor surface for 4 days after installation.

END OF SECTION

ACOUSTIC TILE CEILINGS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Removal and reinstallation plus new Suspended metal grid ceiling system and Acoustic Ceiling Tile as defined in the documents and as required to accomplish the Work.

1.2 RELATED REQUIREMENTS

- A. Section 26 5100 - Interior Lighting: Light fixtures in ceiling system.

1.3 REFERENCE STANDARDS

- A. ASTM C635 - Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings; 2007.
- B. ASTM C636/C636M - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels; 2008.
- C. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2006.
- D. ASTM E580/E580M - Standard Practice for Installation of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Subject to Earthquake Ground Motions; 2011.
- E. ASTM E1264 - Standard Classification for Acoustical Ceiling Products; 2008e1.

1.4 SUBMITTALS

- A. Product Data: Provide data on suspension system components.
- B. Samples: Submit ONE sample 6 x 6 inch in size illustrating material and finish of acoustical units. NO GRID SAMPLES ARE TO BE SUBMITTED.

1.5 QUALITY ASSURANCE

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

1.6 FIELD CONDITIONS

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

1.7 ATTIC STOCK

- A. Provide a minimum of one full box of acoustical units for each type included in the work.

PART 2 PRODUCTS

2.1 ACOUSTICAL UNITS

- A. Manufacturers:
 - 1. USG: www.usg.com.
 - 4. Substitutions: See Section 01 6000 - Product Requirements.
- B. Acoustical Units - General: ASTM E1264, Class A.
- C. Acoustical Panels Type 1: ACT-1: Painted mineral fiber, ASTM E1264 Type III, with the following characteristics:
 - 1. Size: 24 x 24 inches.
 - 2. Thickness: 5/8 inches.
 - 4. NRC Range: 0.55, determined as specified in ASTM E1264.
 - 5. **Edge: SQ Square edge within all rooms except hallways, lobbies, corridors,**

vestibules, etc. Tegular edge in all hallways, corridors, lobbies, vestibules and other public areas.

6. Surface Color: White.
7. Surface Pattern: Non-directional.
8. Product: 2210 Radar ClimaPlus by USG Interiors.
9. Suspension System: Exposed grid Type 15/16 inch wide - color to match tile.

2.2 SUSPENSION SYSTEM(S)

- A. Manufacturers:
 1. Armstrong World Industries, Inc: www.armstrong.com.
 2. Chicago Metallic Corporation: www.chicagometallic.com.
 3. USG: www.usg.com.
 4. Substitutions: See Section 01 6000 - Product Requirements.
- B. Suspension Systems - General: ASTM C635; die cut and interlocking components, with stabilizer bars, clips, splices, perimeter moldings, and hold down clips as required.
- C. Exposed Steel Suspension System: Formed steel, commercial quality cold rolled; intermediate-duty.
 1. Profile: Tee; 15/16 inch wide face.
 2. Construction: Double web.
 3. Finish: White

2.3 ACCESSORIES

- A. Support Channels and Hangers: Galvanized steel; size and type to suit application, seismic requirements, and ceiling system flatness requirement specified.
- B. Perimeter Moldings: Same material and finish as grid.
 1. At ALL New Exposed Grid: Provide L-shaped molding for mounting at same elevation as face of grid.
- E. Touch-up Paint: Type and color to match acoustical and grid units.
 1. Armstrong "SuperCoat" Ceiling Panel Touch-up Paint.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that layout of hangers will not interfere with other work or add excessive loads to the structural components above.

3.2 INSTALLATION - SUSPENSION SYSTEM

- A. Install suspension system in accordance with ASTM C636/C636M, ASTM E580/E580M, and manufacturer's instructions and as supplemented in this section.
- B. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.
- C. Locate system on room axis according to reflected plan.
- D. Install after major above-ceiling work is complete. Coordinate the location of hangers with other work.
- E. Provide hanger clips during steel deck erection. Provide additional hangers and inserts as required.
- F. Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where

carrying members are spliced, avoid visible displacement of face plane of adjacent members.

- G. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.
- H. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.
- I. Support fixture loads using supplementary hangers located within 6 inches of each corner, or support components independently.
- J. Do not eccentrically load system or induce rotation of runners.
- K. Any exterior suspended ceiling system shall be properly braced so as to prevent uplift from a 45 mph wind.
- L. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.
 - 1. Use longest practical lengths.
 - 2. Overlap corners.
- M. Install light fixture boxes constructed of gypsum board or acoustical tile above light fixtures in accordance with fire rated assembly requirements and light fixture ventilation requirements when required.

3.3 INSTALLATION - ACOUSTICAL UNITS

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

3.4 TOLERANCES

- A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet.
- B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

END OF SECTION

RESTROOM ACCESSORIES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Accessories for toilet rooms.
- B. Grab bars.

1.2 RELATED REQUIREMENTS

- A. Section 06 1000 - Rough Carpentry: Concealed supports for accessories, including in wall framing and plates.

1.3 REFERENCE STANDARDS

- A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2010.
- B. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2010.
- C. ASTM C1036 - Standard Specification for Flat Glass; 2006.
- D. ASTM C1503 - Standard Specification for Silvered Flat Glass Mirror; 2008.
- E. ASTM F2285 - Standard Consumer Safety Performance Specification for Diaper Changing Tables for Commercial Use; 2004 (Reapproved 2010).
- F. GSA CID A-A-3002 - Mirrors, Glass; U.S. General Services Administration; 1996.

1.4 SUBMITTALS

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

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Products listed are made by Bobrick.
- B. Other Acceptable Manufacturers:
 - 1. American Specialties, Inc: www.americanspecialties.com.
 - 2. Bradley Corporation: www.bradleycorp.com.
 - 3. Substitutions: Section 01 6000 - Product Requirements.

2.2 MATERIALS

- A. Accessories - General: Shop assembled, free of dents and scratches and packaged complete with anchors and fittings, steel anchor plates, adapters, and anchor components for installation.
 - 1. Grind welded joints smooth.
 - 2. Fabricate units made of metal sheet of seamless sheets, with flat surfaces.
- B. Stainless Steel Sheet: ASTM A666, Type 304.
- C. Galvanized Sheet Steel: Hot-dipped galvanized steel sheet, ASTM A653/A653M, with G90/Z275 coating.
- D. Mirror Glass: Float glass, ASTM C1036 Type I, Class 1, Quality Q2, with silvering, protective and physical characteristics complying with ASTM C1503.

- E. Adhesive: Two component epoxy type, waterproof.
- F. Fasteners, Screws, and Bolts: Hot dip galvanized, tamper-proof, security type.
- G. Expansion Shields: Fiber, lead, or rubber as recommended by accessory manufacturer for component and substrate.

2.3 FINISHES

- A. Stainless Steel: No. 4 satin brushed finish, unless otherwise noted.
- B. Baked Enamel: Pretreat to clean condition, apply one coat primer and minimum two coats epoxy baked enamel.
- C. Back paint components where contact is made with building finishes to prevent electrolysis.

2.4 TOILET ROOM ACCESSORIES

- A. Toilet Paper Dispenser: Double roll, surface mounted bracket type, cast aluminum, eccentric-shaped plastic spindle for 1/2 revolution delivery designed to prevent theft of tissue roll.
 - 1. Product: B-2740 manufactured by Bobrick.
 - a. Bradley Model 5241 Double Roll Bradex
- B. Grab Bars: Stainless steel, 1-1/2 inches outside diameter, minimum 0.05 inch wall thickness, nonslip grasping surface finish, concealed flange mounting; 1-1/2 inches clearance between wall and inside of grab bar.
 - 1. Length and configuration: As indicated on drawings.
 - 2. Product: B-6806 manufactured by Bobrick.
 - a. Bradley Model 812-2 Series
- C. Sanitary Napkin Disposal Unit: Durable, high-impact ABS, surface mounted, removable receptacle. Provide one in each restroom stall.
 - 1. Product: B-5270 Matrix Series manufactured by Bobrick.
- D. Not Used
- E. Paper Towel Dispensers to be provided by Owner and installed by Contractor
- F. Soap Dispensers to be provided by Owner and installed by Contractor

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify exact location of accessories for installation.
- C. Verify that field measurements are as indicated on drawings.
- D. See Section 06 1000 for installation of blocking, reinforcing plates, and concealed anchors in walls, and ceilings.

3.2 PREPARATION

- A. Deliver inserts and rough-in frames to site for timely installation.
- B. Provide templates and rough-in measurements as required.

3.3 INSTALLATION

- A. Install accessories in accordance with manufacturers' instructions.
- B. Install plumb and level, securely and rigidly anchored to substrate.

- C. Mounting Heights and Locations: As required by accessibility regulations, as indicated on drawings, and as follows:
 - 1. Bottom of Mirrors: maximum 40" above finish floor to actual mirror surface.
 - 2. Grab Bars at Barrier-Free Stalls: Comply with Minnesota Accessibility Code Standards in quantity, length and mounting positions.
- D. Soap and Paper Towel dispensers to be supplied by Owner and installed by Contractor.

END OF SECTION