

GENERAL SPECIFICATIONS

of material and labor required in the construction and completion of miscellaneous renovations entitled:

BRIGHTON AREA SCHOOLS 2019 BOND – PHASE 6 PROJECTS:

- **B.E.C.C. BUILDING**
 - **EAST WING CLASSROOM RENOVATIONS**
 - **EXTERIOR WINDOWS REPLACEMENT**
 - **1ST FLOOR UNIT VENTILATOR/AC UPGRADES**
 - **FIRE ALARM PANEL & DEVICE REPLACEMENT**
- **HILTON ELEMENTARY**
 - **BATHROOM RENOVATIONS**
- **BRIGHTON HIGH SCHOOL**
 - **SCIENCE RM RENOVATIONS**

for: Brighton Area Schools
Brighton, Michigan

in accordance with the
accompanying drawings and
specifications prepared by:

CONSTRUCTION DOCUMENTS

Cover Sheet	
Index	X-1 and X-2
Advertisement for Bids	AB-1
Instructions to Bidders	IB-1
Request For Proposals (RFP)-Hilton Elem. Bathroom Renovations	1 thru 18

DIVISION 01 – GENERAL REQUIREMENTS

Section 01A – General Requirements	1A-1 thru 1A-6
Section 01B – Special Conditions	1B-1 thru 1B-7
Section 01C – Alternates (BECC Building Only)	1C-1

DIVISION 02 – SITE WORK

Section 02L – Removal and Demolition	2L-1 thru 2L-3
--------------------------------------	----------------

DIVISION 03 – CONCRETE

Section 03A – General Concrete	3A-1 thru 3A-6
--------------------------------	----------------

DIVISION 04 – MASONRY

Section 04A – General Masonry	4A-1 thru 4A-8
-------------------------------	----------------

DIVISION 05 – METALS: STRUCTURAL AND MISCELLANEOUS

Section 05H – Light Gauge Metal Framing	5H-1 thru 5H-4
---	----------------

DIVISION 06 – CARPENTRY

Section 06A – General Carpenter Work	6A-1 thru 6A-3
Section 06B – Finish Carpentry and Millwork	6B-1 thru 6B-5

DIVISION 07 – THERMAL AND MOISTURE PROTECTION

Section 07A – Roofing and Sheet Metal Work	7A-1 thru 7A-3
Section 07B – Sealant Work	7B-1 thru 7B-2
Section 07F – Fireproofing	7F-1

DIVISION 08 – HARDWARE, DOORS, AND GLASS

Section 08A – Finish Hardware	8A-1 thru 8A-5
Section 08B – Metal Doors and Frames	8B-1 thru 8B-2
Section 08C – Glass and Glazing	8C-1 thru 8C-3
Section 08D – Store Front Construction	8D-1 thru 8D-3

DIVISION 09 – FINISHES

Section 09A – Painting and Decorating	9A-1 thru 9A-3
Section 09B – Floor Covering	9B-1 thru 9B-3
Section 09C – Gypsum Drywall	9C-1 thru 9C-4
Section 09D – Acoustical Treatment	9D-1 thru 9D-2
Section 09E - Tile Work	9E-1 thru 9E-3

DIVISION 10 – SPECIALTIES

Section 10B – Toilet Room Accessories
Section 10D – Toilet Partitions

10B-1
10D-1

DIVISION 11 – EQUIPMENT (NOT USED)

DIVISION 12 (NOT USED)

DIVISION 13 (NOT USED)

DIVISION 14 – (NOT USED)

DIVISION 15 – (REFER TO MEP SPECIFICATION DRAWING SHEETS)

DIVISION 16 – (REFER TO MEP SPECIFICATION DRAWING SHEETS)

ADVERTISEMENT FOR BIDS

Brighton Area Schools will receive sealed proposals for general contractor services for:

BRIGHTON AREA SCHOOLS 2019 BOND – PHASE 6 PROJECTS:

- ~~— B.E.C.C. BUILDING~~
 - ~~○ EAST WING CLASSROOM RENOVATIONS~~
 - ~~○ EXTERIOR WINDOWS REPLACEMENT~~
 - ~~○ 1ST FLOOR UNIT VENTILATOR/AC UPGRADES~~
 - ~~○ FIRE ALARM PANEL & DEVICE REPLACEMENT~~
- **HILTON ELEMENTARY**
 - **BATHROOM RENOVATIONS**
- ~~— BRIGHTON HIGH SCHOOL~~
 - ~~○ SCIENCE RM RENOVATIONS~~

Proposals will be received for General Contract - All Trades. All proposals shall be addressed to:

Brighton Area Schools
c/o David Jones
125 S. Church Street
Brighton, Michigan 48116
Telephone: (810) 299-4031

Plans and specifications may be requested from the offices of the Architects via email at:

djm@lindhout.com

D. Jason McIntyre – project architect
Lindhout Associates architects aia pc
10465 Citation Drive, Brighton, MI 48116
810-227-5668

Each proposal must be submitted on forms furnished within the Brighton Area Schools “Request for Proposals (RFP) Hilton Elementary Bathroom Renovations” and must be completed in full. Each proposal shall be sealed in an opaque envelope and marked with the name of the building project and the name of the bidder.

A bid bond executed by an approved security company or certified check in the amount of at least 5% of the sum of the proposal shall be submitted with each proposal.

All proposals submitted shall remain firm for a period of 30 days after the official opening of bids.

Brighton Area Schools reserves the right to reject any and all proposals, in whole or in part and to waive any informalities therein.

INSTRUCTIONS TO BIDDERS

Proposals, to be entitled for consideration, must be made in accordance with the included "Request For Proposals (RFP) Hilton Elementary Bathroom Renovations".

**BRIGHTON AREA SCHOOLS
CONTRACTOR SERVICES**

**REQUEST FOR PROPOSALS (“RFP”)
Hilton Elementary Bathroom Renovations**

January 24, 2024

Brighton Area Schools
REQUEST FOR PROPOSALS FOR
CONTRACTOR SERVICES
PART 1 – GENERAL INSTRUCTIONS

A. Instructions

Qualified firms are invited to submit proposals to Brighton Area Schools (the “District”) for the Hilton Elementary Bathroom Renovations (the “Project”). The Project will take place at the location(s) below: 9600 Hilton Road, Brighton, Michigan 48114. Mandatory walkthrough reviews will be performed at the same location at dates/times listed in sections below.

The Project consists of an interior renovation to existing spaces. New fixtures, flooring, finishes, toilet partitions, bathroom accessories, etc. are proposed. Nine single occupant, one Health Office, and seven multi-occupant bathrooms are all part of the project scope.

For the purpose of this RFP, the terms “proposal” and “bid” shall be treated as one and the same.

The District reserves the right to reject any or all proposals and to make any award that it considers to be in the best interest of the District.

Proposals shall not contain any recapitulation of the work to be done. No oral, telegraphic, or telephonic proposals or modifications will be considered.

B. Proposal Submission

To be considered by the District, seven (7) copies of the complete proposal must be received no later than 12:00 p.m., February 12, 2024. Proposals should be addressed to:

Brighton Area Schools
C/o David Jones
125 S. Church Street
Brighton, Michigan 48116
Telephone: (810) 299-4031

The lower left corner of the submittal envelope should be marked: PROPOSAL FOR CONTRACTOR SERVICES.

Pursuant to Michigan law, MCL 380.1267, proposals must include security (cashier’s check or bond) in an amount not less than 1/20 (5%) of the amount of the bid conditioned to secure the District from loss or damage by reason of the withdrawal of the bid or by the failure of the bidder to enter a contract for performance, if the bid is accepted by the District’s Board of Education. Any firm(s) not awarded will be refunded this security if submitted in the form of a cashier’s check.

Submitted proposals become the property of the District and will not be returned.

C. Late Proposals

Any proposal received by the District after the time specified above will not be considered. The party submitting a proposal shall bear full and total responsibility for ensuring timely receipt of that proposal.

D. Withdrawal of Proposals

Proposals may be withdrawn by written notice received at any time prior to the submission deadline. Proposals may be withdrawn in person, provided that the firm's representative signs a receipt for the proposal prior to the submission deadline.

E. Questions Concerning this RFP

Inquiries may be made to David Jones, Assistant Superintendent for Finance, at the address and telephone number above. Information about the District is available during business hours (8:00 a.m. to 4:30 p.m.).

F. Economy of Preparation

Proposals should be prepared simply, providing a concise description of the firm's ability to meet the requirements of this RFP. Please limit your proposal to the information requested in Part 3 - Proposal Details and Part 4 - Proposal Summary. Part 4 - Proposal Summary, must be signed by the person responsible for the decision as to services and costs being offered.

G. Site Visit

Bidders are required to attend a project review walkthrough Wednesday, February 7th, at 4:00pm at Hilton Elementary (9600 Hilton Road, Brighton MI, 48114) to personally inspect the site before bid submission and to become familiar with the spaces. Bidders should arrive at the Hilton Elementary main entrance for formal check-in. The District will not accept proposals from bidders who fail to inspect the facility.

H. Prime Responsibilities

The firm selected will be required to assume responsibility for all services offered in the proposal, regardless of who actually provides such services and whether the selected firm utilizes separate consultants. The selected firm shall be the sole point of contact with regard to contractual matters, including payment of any and all charges resulting from the contract.

A general scope of services is described below in this Part 1 under Section M.

I. Proposal Preparation Costs

All costs incurred for proposal preparation presentation, or contract negotiation are the responsibility of the firm. The District will not be responsible for, and will not pay, the cost for any information solicited or received.

J. Acceptance of Proposal Contents

The contents of the proposal of the selected firm will become contractual obligations when a contract is issued, except with regard to particular contents that are rejected by the District. Failure of the successful firm to abide by such obligations will result in cancellation of the award.

K. Proposed Project Schedule

The bid is expected to be awarded after the March 11th, 2024 Brighton Area School Board meeting. The Project is restricted to construction during summer break (June 13th, 2024 to August 24th, 2024) The District and all bidders recognize that this schedule is subject to change.

L. Collusive Bidding and Relationship Disclosure

The Proposer certifies that their Proposal is made without any previous understanding, agreement or connection with any person, firm, or company making a Proposal for the same project and is in all respects fair and without outside control, collusion, fraud, or other illegal action.

The Proposer shall submit a Familial Relationship Disclosure in substantially the form attached hereto as Attachment “B”.

The Proposer shall submit an Iran Economic Sanctions Act Certification in substantially the form attached hereto as Attachment “C”.

M. Scope of Services

It is assumed that any proposal submitted will include, but shall not necessarily be limited to, the performance of all of the activities listed below. The District will consider alternate proposals; however, the proposal must clearly indicate any activities that have been deleted and/or added from the requested scope of services.

1. Construction Phase Services

- a. Prepare for and commence construction, construction draw, and occupancy schedules.
- b. Propose change order requests, subject to District & Architect approvals.
- c. Review shop drawings and expedite the review process.
- d. Review payment and cost control procedures, including the following:
 - i. Subcontractors’ Schedule of Values, if applicable
 - ii. Subcontractors’ Payment Application and Certification, if applicable
 - iii. Subcontractors’ Sworn Statements and Waivers of Lien, if applicable
 - iv. Purchase Order and disbursement Summaries
 - v. Change Order Listings

- vi. Budget Cost Summary Reports
- e. Participate in progress meetings and provide progress reports of same.
 - i. As needed, meet with the District's Project Representative to discuss any activities which may affect operations.
 - ii. Weekly meeting with District representative and trade contractors.
 - iii. Monthly meetings for planning, coordination, and payments with District administrators which will include status reports on the Project, budget, change orders, and allowances for reimbursable expenses.
- f. Prepare as-built drawings and record and review operating and maintenance manuals, warranties, guarantees, and Project directories.
- g. Ensure that all construction is completed as specified by the construction documents and meets all codes and regulations of agencies having jurisdiction.
- h. Provide review and coordinate Project commissioning.
 - i. Prepare and complete punch lists, coordinate final inspections, and recommend District acceptance and occupancy.

2. Post-construction Phase Services

- a. Assist in conducting training sessions for appropriate employees regarding the operation and maintenance of technical equipment.
- b. Provide staff readily available during three-month adjustment period as staff and students become accustomed to new surroundings.
- c. Provide follow-up for the duration of the longest warranty period covered by the Project.

N. Insurance Coverage

Before beginning work, the selected firm will be required to provide a copy of insurance certificates to The District for the required insurance types and amounts as listed in the project's specifications, Division 01A "General Requirements", Article 16 "Insurance". Refer to performance bond, payment bond, and other miscellaneous requirements provided in Article 16 as well.

O. Payment of Fees

The District will make payments to the Contractor in accordance with the awarded bid. Payments will be subject to 10% retainage. Professional fees and reimbursable expenses shall be itemized on the same invoice so that the District may issue one monthly check to the Contractor. The specific day of the

month on which invoices are to be received and checks released will be determined during contract negotiations with the selected firm.

P. Indemnification

If the acts or omissions of the Contractor or its employees, agents or officers cause injury to District person or property, the Contractor shall defend, indemnify and save harmless the District, its agents, officials, and employees against all claims, judgments, losses, damages, demands, and payments of any kind to persons or property to the extent occasioned from any claim or demand arising therefrom, to the extent allowed by law.

Q. Bidding Documents

1. The drawings and specifications are the exclusive property of the Architect and must not be altered in any fashion. The drawings and specifications shall be destroyed at the completion of the project. Bidding Documents will be distributed electronically upon request via email at: djm@lindhout.com.
2. The instruments upon which proposals and contract for the work to based are:
 - a. General conditions of the Contract, Standard Form as issued by the American Institute of Architects, Articles 1 through 14, together with additions and modifications as stated in Division 1 of the Specifications and specifically stricken in copy of General Conditions included herein.
 - b. Specifications for Work Divisions 1 through 16, except as specifically deleted.
 - c. Architectural, Mechanical and Electrical Drawings covering the work.
 - d. Addenda as may be issued in the course of bidding.
 - e. The form of Agreement which the successful Bidder will be required to execute is AIA Document A101.

R. BASE BID SPECIFICATIONS

1. Whenever the specifications call for one specific product, material application, etc. the Contractor or sub-contractor shall bid solely on that which is named. All Base Bids shall then be consistent in such a manner as to permit the best possible evaluation of all proposals.
 - a. Should any real and definite hardship result in the foregoing "Base Bid" the Contractor shall communicate the facts to the Architect, and if warranted, and addendum will be issued to all bidders rectifying the condition.

S. BID BOND

- 01 Every person, firm or corporation submitting a proposal shall be required to furnish with such bid, a certified check or bid bond which shall be forfeited to the Brighton Area Schools in case of failure of the bidder to sign a contract within fifteen days after the award of contract to him. The certified check or bond shall be in the amount of 5% of the bid amount.

T. SURETY BONDS

01 Accepted bidders will be required to furnish two surety bonds, each made out in the form consistent with that supplied by the AIA, document A312, as follows:

- a. A payment bond for the full amount of the contract running to the people of the State of Michigan Guaranteeing the payment of all subcontractors and all indebtedness incurred for labor, materials, or any cause whatsoever on account of this contractor in accordance with the laws of the State of Michigan relating to such bonds.
- b. A material and labor bond for the full amount of the contract to guarantee and insure the completion of the work according to the contract.

Brighton Area Schools

**REQUEST FOR PROPOSAL FOR
CONTRACTOR SERVICES
PART 2 – PROPOSAL REVIEW AND SELECTION PROCESS**

A. Time Frame for Contractor Selection

It is the intent of the District to select a Contractor according to the following schedule:

January 24, 2024	RFP is released.
February 7, 2024, 4-6:00pm.	Mandatory walkthrough review meeting with Owner & Architect at Hilton Elementary.
February 8, 2024, e.o.d.	Last day for clarifications & addenda issuance.
February 12, 2024, at Noon	Proposals are due.
February 12, 2024, at 12:15pm	Proposal opening (at BAS Board Room)
February 19th or 21st, time t.b.d.	Select bidder interviews with the BAS District staff and Architect.
March 11, 2024	Board of Education selects a Contractor and authorizes the Superintendent to finalize a contract.
June 13th, 2024	Earliest date for Contractor to begin work.

The District may modify or eliminate any of the above schedule in its sole discretion.

B. Review and Selection Process

The District reserves the right to reject any or all proposals that are determined not to be in the best interests of the District. The District will not necessarily select the lowest cost proposal.

C. Contractor Interviews

It is possible that the District will invite firms to participate in interviews with the Board of Education (and/or, if applicable, any Selection Committee) and to answer any questions that may exist about their proposal.

D. Evaluation Criteria

The District will evaluate proposals considering all of the information provided in response to this RFP, including but not necessarily limited to the following:

Adherence to RFP: To merit evaluation, submittals must conform, in both content and presentation, to the parameters established in this request.

Relevant Experience: Relevant experience of the firm with construction and renovation of K-12 public school facilities, particularly those of comparable size and complexity.

Qualifications: Qualifications and experience of the key staff to be assigned to these projects.

Timeliness: Ability of the firm to complete work tasks specified in this RFP in a timely fashion.

Responsiveness: The ability to meet quickly with District officials, contractors, etc. when necessary.

Team Compatibility: The ability of the firm to work with students, District employees, parents, community members, and governmental officials based on references and interviews.

Fee Proposal: The total fees for Contractor services.

E. Awarding of the Contract

All proposals received shall be subject to evaluation by Administration for the purpose of recommending a firm or firms with whom a contract will be signed. Authorization for execution of a contract will be approved by the District's Board of Education after it has had an opportunity to review the recommendations of the Administration.

The form of Contract shall be based on the modified version of AIA Document A101-2017 Edition, as modified. The bidder shall be deemed to agree with the attached document in its entirety, except and to the extent the bidder specifically objects in writing to any provision therein and attaches the objection(s) as a separate document to its response to this RFP, along with a proposed alternative.

Notwithstanding anything herein to the contrary, the District shall have the ability, in its sole discretion, to negotiate any term of the Contract. The award of a Contract shall be contingent upon the successful negotiation of same.

Brighton Area Schools

**REQUEST FOR PROPOSAL FOR
CONTRACTOR SERVICES
PART 3 – PROPOSAL DETAILS**

NAME OF FIRM: _____ YEAR ESTABLISHED: _____

ADDRESS: _____
(Street) (City/State) (Zip Code)

TELEPHONE NUMBER: _____ FAX NUMBER: _____
(Area Code) (Area Code)

A. BUSINESS ORGANIZATION

1. Individual _____ Partnership _____ Corporation _____ Other _____

2. Years firm has provided K-12 Contractor Services: _____

3. List Principals and officers of the firm:

4. List the various professional and support staff positions and number of personnel in each position in your firm.

<u>Professional Staff</u>	<u>Number</u>	<u>Support Staff</u>	<u>Number</u>
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5. Provide a brief history of your firm's experience with public school construction, if any.

6. List subcontractors or consultants outside your firm you propose using to provide services not available in your firm.

<u>Firm Name</u>	<u>Location</u> <u>City/State</u>	<u>Specialty</u>	<u>Number of Times</u> <u>Affiliated With You</u>
------------------	--------------------------------------	------------------	--

- 1.
- 2.
- 3.
- 4.

7. What is your firm’s present workload?

Number of Projects \$ Value

Number of projects in pre-construction phase:

Number of projects in construction phase:

Provide a list of all scheduled construction projects and unscheduled construction projects currently being handled by your firm, including an indication of percentage of completion for each project.

8. What is your General Liability Insurance coverage:

- a. Total amount of protection provided.
- b. Amount of deductible, if any.
- c. Name, address, phone #, and contact person of Insurance Company.
- d. Are the costs of this coverage included in your Fee Proposal? If not, what is that additional cost?

9. Have you had mediation, litigation, arbitration or a claim filed against or settled with your firm by an educational client or have you filed or settled the same against an educational client? If yes, explain each in detail.

10. Have you had mediation, litigation, arbitration or a claim filed against or settled with your company by any client outside of the educational market or have you filed the same against any other client? If yes, explain each in detail.

11. Has your firm ever been terminated, for cause or for convenience, prior to completion of a project or has your firm ever terminated a contractor contract, for cause or for convenience, prior to completion of a project? If yes, explain each in detail.

B. APPROACH TO CONTRACTOR SERVICES

1. Describe in detail, the process you will follow to commence construction for the Project.

2. List what you consider to be the best new school/school renovation project you have built:

Project Name:
School District:
Contact:
Phone Number
Total Cost
Square Footage
of Change Orders
Date Completed
Project Architect
Cost per Square Foot
Cost of Change Orders
Why do you consider this school to be your firm’s best work?

3. List the top five exceptional educational features of new school construction/school building renovations built by your firm.

4. Describe the method(s) of budget/cost control, quality control, and time schedule adherence you will use for the Project.

5. List the steps in your standard change order procedure, your criteria used to determine whether Additional Service fees will be charged and for change orders, and your fee schedule for change orders.

6. Explain your philosophy regarding change orders and identify on both a dollar and percentage basis the volume of change orders on each of your last five (5) K-12 new construction/addition-renovation construction projects. For these projects, indicate the proportion of those changes that were owner-initiated and the identity of the owner.

7. Describe how your firm stays up-to-date on construction code and regulatory requirements applicable to school construction.

8. Some of the construction work may occur while school is in session. Describe how your firm will minimize any interruptions to our day-to-day operations.

9. List the five (5) most recent school construction projects for which your firm has acted as Contractor, including a general description of the project and contact information for your primary contact with the school district.

- a. Project Name:
 - School District:
 - Contact:
 - Phone Number
 - Total Cost
 - Square Footage
 - # of Change Orders
 - Date Completed
 - Project Architect
 - Why do you consider this school to be your firm's best work?
- | |
|-----------------------|
| Cost per Square Foot |
| Cost of Change Orders |

b. Project Name:
School District:
Contact:
Phone Number
Total Cost
Square Footage
of Change Orders
Date Completed
Project Architect
Cost per Square Foot
Cost of Change Orders
Why do you consider this school to be your firm's best work?

c. Project Name:
School District:
Contact:
Phone Number
Total Cost
Square Footage
of Change Orders
Date Completed
Project Architect
Cost per Square Foot
Cost of Change Orders
Why do you consider this school to be your firm's best work?

d. Project Name:
School District:
Contact:
Phone Number
Total Cost
Square Footage
of Change Orders
Date Completed
Project Architect
Cost per Square Foot
Cost of Change Orders
Why do you consider this school to be your firm's best work?

e. Project Name:
School District:
Contact:
Phone Number
Total Cost
Square Footage
of Change Orders
Date Completed
Project Architect
Cost per Square Foot
Cost of Change Orders
Why do you consider this school to be your firm's best work?

C. Anticipated Project Schedule

The District desires that construction for the Project begin on June 13th, 2024 and that Substantial Completion be achieved by not later than August 24th, 2024. Please identify any concerns or reservations your firm may have with these general parameters and describe any negative impacts on the Project foreseen as a result of such parameters.

D. Cost Proposal

The cost proposal shall be stated as a lump sum as set forth below. If you believe any other information or clarification may be helpful to the District in determining your cost for services, please include that information in your proposal.

Brighton Area Schools

**REQUEST FOR PROPOSAL FOR
CONTRACTOR SERVICES
PART 4 – PROPOSAL SUMMARY**

All materials necessary to complete the Project shall be the responsibility of the Contractor.

Single Prime (All Trades) Contract: The undersigned Bidder, having carefully examined the Bidding and Contract Requirements, Conditions of the Contract, Drawings, Specifications, and all subsequent Addenda, as issued by the Owner, hereby agrees to furnish all material, labor, equipment, and services as described in the above documents, without exception, including all scheduled allowances and permits, if any, necessary to complete the Project, to the sum of:

\$ _____

This proposal has been prepared to provide the District with all the information requested in Part 3 - Proposal Details of the RFP regarding Contractor services. The undersigned certifies that the proposal contained herein meets or exceeds the scope of services as outlined in this RFP, and that any items that have been deleted from and/or added to the requested scope of services (including, but not limited to, the proposed contract language) are clearly noted as follows or separately attached:

Signed this ____ day of _____, 2024.

Firm Name: _____

Address: _____

Phone Number: _____ Fax Number: _____

By: _____
Signature and Title

ATTACHMENT "A"

AIA Document A101-2017 Standard Form of Agreement between Owner and Contractor.

ATTACHMENT “B”

FAMILIAL DISCLOSURE STATEMENT

AFFIDAVIT OF _____
(insert name of affiant)

STATE OF MICHIGAN)
)ss
COUNTY OF _____)

_____ makes this Affidavit under oath and states as follows:

(insert name of affiant)

1. I am a/the:

- President
- Vice-President
- Chief Executive Officer
- Member
- Partner
- Owner
- Other (please specify) _____

of _____ [insert name of contractor], a bidder for contractor services for Brighton Area Schools.

2. I have personal knowledge and/or I have personally verified that the following are all of the familial relationships existing between the owner(s) and the employee(s) of the aforementioned contractor and the school district’s superintendent and/or board members:

3. I have authority to bind the aforementioned contractor with the representations contained herein, and I am fully aware that the school district will rely on my representations in evaluating bids for contractor services.

4. I declare the above information to be true to the best of my knowledge, information and belief. I could completely and accurately testify regarding the information contained in this affidavit if requested to do so.

(signature of affiant)

Dated: _____

Subscribed and sworn before me in _____ County,
Michigan, on the ___ day of _____, 202__

(signature)

(printed)

Notary public, State of Michigan, County of _____

My Commission expires on _____

Acting in the County of _____

ATTACHMENT “C”

IRAN ECONOMIC SANCTIONS ACT CERTIFICATION

I am the _____ (title) _____ of _____ (bidder) _____, or I am bidding in my individual capacity (“Bidder”), with authority to submit a binding bid for the provision of contractor services to Brighton Area Schools. I have personal knowledge of the matters described in this Certification, and I am familiar with the Iran Economic Sanctions Act, MCL 129.311, et seq. (“Act”). I am fully aware that the school district will rely on my representations in evaluating bids.

I certify that Bidder is not an Iran-linked business, as that term is defined in the Act. I understand that submission of a false certification may result in contract termination, ineligibility to bid for three (3) years, and a civil penalty of \$250,000 or twice the bid amount, whichever is greater, plus related investigation and legal costs.

(signature)

(printed)

(date)

DIVISION 01A**GENERAL REQUIREMENTS****SECTION 01A****SUPPLEMENTARY GENERAL CONDITIONS**

01 The General Conditions of the Contract for the Construction of Buildings Standard Form of the American Institute of Architects, latest Edition: Article 1 through 14 inclusive are hereby, except as the same way be inconsistent with, made a part of this specification.

- a. Where any article of the "A.I.A. General Conditions" is herein supplemented, the A.I.A. provisions shall remain in effect. All the supplemental provisions shall be considered as added thereto. Where any such article is amended, voided or superseded, the provisions of such article not so specifically amended, voided or superseded, shall remain in effect.

02 **ARTICLE 15** **DRAWINGS AND SPECIFICATIONS**

- a. The drawings and specifications are complementary, and what is called for by one is binding as if called for by the other.

03 **ARTICLE 16** **INSURANCE**

This article shall void Article II of the General Conditions as cited in Paragraph A under the heading of this Division.

16.1 **CONTRACTORS LIABILITY INSURANCE**

16.1.1 The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, such insurance as will protect the contractor from claims set forth below which may arise out of or result from the Contractor's operations under the Contract, and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts and of them may be liable:

- .1 claims under workers' or workmen's compensation, disability benefit and other similar employee benefit acts which are applicable to the Work to be performed;
- .2 claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
- .3 claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
- .4 claims for damages insured by usual personal injury liability coverage which are sustained (1) by a person as a result of an offense directly or indirectly related to employment of such person by the Contractor, or (2) by another person;
- .5 claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
- .6 claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of any motor vehicle; and
- .7 claims involving contractual liability insurance applicable to the Contractors obligations, under Paragraph 3.18.

16.1.2 The insurance required by Subparagraph 16.1.1 shall be written for not less than the limits of liability specified in the Contract Documents, or required by law, whichever coverage is greater.

Coverage, whether written on an occurrence or claims-made basis, shall be maintained without interruption from date of commencement of the Work until date of final payment and termination of any coverage required to be maintained after final payment. Notwithstanding the above, the insurance required by paragraph 16.1 shall be on an occurrence basis.

- 16.1.2.1 Such insurance shall be written to include the following coverage and for not less than the following minimum limits or greater if required by law;
- .1 Worker's Compensation, Occupational Disease and Employer's Liability Insurance:
- A. State of Michigan - Statutory Limits
- B. Applicable Federal (if any) - Statutory limits.
- C. Employer's Liability -
 Bodily Injury by Accident - \$1,000,000 each accident
 Bodily Injury by Disease - \$1,000,000 each employee
 Bodily Injury by Disease - \$1,000,000 each policy limit
- .2 Commercial General Liability Insurance including as minimum coverage:
- Premises - Operations Liability
 - Independent Contractor's Protective Liability
 - Broad Form Property Damage Endorsement
 - Blank Contractual
 - Personal Injury, with Employment Exclusion deleted
- A. Special Requirements:
1. Property Damage Liability Insurance will provide "X, C, and U" (Explosion, collapse and underground hazard) coverage as applicable.
 2. Products and Completed Operation to be maintained for 1 year after final payment.
 3. The owner, architect, their consultants, agents and employees, shall be named as: additional insured's on the commercial general liability policy of the general contractor and/or subcontractor of any tier.
- B. Limits of Liability:
- \$1,000,000 Each Occurrence as respects Bodily Injury Liability or Property Damage Liability, or both combined.
- \$1,000,000 General Aggregate
- \$1,000,000 Products/Completed Operations Aggregate
- \$1,000,000 Personal and Advertising Injury
- .3 Automobile Liability Insurance":
- A. Special Requirements:
1. All owned, hired, and non-owned vehicles including the loading or unloading thereof.

2. The owner, architect, their consultants, agents and employees, shall be name as "additional insured's" on the commercial automobile liability policy of the general contractor and/or subcontractor of any tier.

B. Limits of Liability

\$1,000,000 Each occurrence as respects Bodily Injury Liability or Property Damage Liability, or both combined.

.4 Owner's and Architect's Protective Liability Incurrence:

The Contractor will furnish and maintain during the entire period of construction an Owner's Protective Liability Policy written in the name of the owner, architect, and architect's consultants, with the following limits of liability:

Limits of Liability:

\$1,000,000 Each occurrence as respects Bodily Injury Liability or Property Damage Liability, or both combined.

\$1,000,000 General Aggregate

.5 Umbrella/Excess Liability Insurance:

Limits of Liability

\$1,000,000 Each occurrence

\$1,000,000 Aggregate

16.1.3 Certificates of Insurance for the above coverage and the Owner's Protective Policy shall be submitted to the Architect for transmittal to the Owner for his approval prior to the start of construction. The Contractor shall certify to the Owner that he has obtained or will obtain similar certificates of insurance from each of his Subcontractors before their work commences. Each Subcontractor must be covered by insurance of the same character and in the same amounts as the Contractor unless the Contractor and the Owner agree that a reduced coverage is adequate. Each subcontractor's insurance shall cover the Owner, Architect, their agents and employees. The Contractor shall submit a statement with each monthly affidavit stating that he has obtained certificates of insurance, or other satisfactory evidence, that all required insurance is in force for each of the Subcontractors listed on his affidavit. If the "additional insured" have other insurance which is applicable to the loss, it shall be on an excess or contingent basis. The amount of the company's liability under this policy shall not be reduced by the existence of such other insurance Contractor certificates shall be in duplicate on standard Acord forms.

16.1.3.1 Certificate of insurance shall contain a statement therein or a rider attached thereto incorporating the indemnity clause stated in Paragraph 3.18 (Indemnification) and Subparagraphs 3.18.1, 3.18.1.1, 3.18.2 and 3.18.3 of the General Conditions, and including the changes and addition made in those subparagraphs within these Supplemental General Conditions.

16.1.3.2 These Certificates and the insurance policies required by this Paragraph 16.1 shall contain a provision that coverage afforded under the policies will not be canceled or allowed to expire until at least thirty (30) days prior written notice has been given to the Owner and Architect. If any of the foregoing insurance coverage is required to remain in force after final payment and are reasonably available, an additional certificate evidencing continuation of such coverage

shall be submitted with the final Application for Payment as required by Subparagraph 9.10.2. Information concerning reduction of coverage shall be furnished by the Contractor with reasonable promptness in accordance with the Contractor's information and belief.

- 16.1.3.3 The obligations of the Contractor under the provisions of this article shall not extend to the liability of the Architect, his agents or employees arising out of (1) the preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs, or specifications, or (2) the giving of or the failure to give directions or instructions by the Architect, his agents or employees to the extent that such giving or failure to give is the cause of the injury or damage.

16.2 OWNER'S LIABILITY INSURANCE

- 16.2.1 The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance. Optionally, the Owner may purchase and maintain other insurance for self-protection against claims, which may arise from operations under the Contract. The Contractor shall not be responsible for purchasing and maintaining this optional Owner's liability insurance unless specifically required by the Contract Documents.

16.3 PROPERTY INSURANCE

- 16.3.1 Unless otherwise provided, the Owner shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance in the amount of the initial Contract Sum as well as subsequent modifications thereto for the entire Work at the site on a replacement cost basis without voluntary deductibles. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made and provided in Paragraph 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Paragraph 16.3 to be covered, whichever is earlier. This insurance shall include interests of the Owner, Architect, the Contractor, Subcontractors and the Sub-subcontractors in the Work.

Property Insurance provided by Owners shall not cover any tools, apparatus, machinery, scaffolding, hoists, forms, staging, shoring and other similar items commonly referred to as construction equipment, which may be on the site and the capital value of which is not included in the Work. The Contractor shall make his own arrangements for any insurance he may require on such construction equipment.

- 16.3.1.2 If the Owner does not intend to purchase such property insurance required by the Contract and with all of the coverage in the amount described above, the Owner shall so inform the Contractor in writing prior to commencement of the Work. The Contractor may then affect insurance, which will protect the interests of the Contractor, Subcontractors and Sub-subcontractors in the Work, and by appropriate Change Order, the cost thereof shall be charged to the Owner. If the contractor is damaged by the failure or neglect of the Owner to purchase or maintain insurance as described above, without so notifying the Contractor then the Owner shall bear all reasonable cost properly attributable thereto.
- 16.3.1.3 If the property insurance required minimum deductibles and such deductibles are identified in the Contract Documents, the Contractor shall pay costs not covered because of such deductibles. If the Owner or insurer increases the required minimum deductibles above the amounts so identified or if the Owner elects to purchase this insurance with voluntary deductible amounts, the Owner shall be responsible for payment of the additional costs not covered because of such increased or voluntary deductibles. If deductibles are not identified to the Contract Documents, the Owner shall pay costs not covered because of deductibles. The property insurance for the Work requires a minimum deductible of: \$5,000 per claim.

- 16.3.2 **Boiler and Machinery Insurance.** The Owner shall purchase and maintain boiler and machinery insurance required by the Contract Documents or by law, which shall specifically cover such insured objects during installation and until final acceptance by the Owner; this insurance shall include interests of the Owner, Contractor, Subcontractors and Sub-subcontractors in the Work, and the Owner and Contractor shall be named insured's.
- 16.3.3 **Loss of Use Insurance.** The Owner, at the Owner's option, may purchase and maintain such insurance as will insure the Owner against loss of use of the Owner's property due to fire or other hazards, however caused. The Owner waives the rights of action against the Contractor for loss of use of the Owner's property, including consequential losses due to fire or other hazards however caused.
- 16.3.4 If the Contractor requests in writing that insurance for risks other than those described herein or for other special hazards be included in the property insurance policy, the Owner shall, if possible, include such insurance, and the cost thereof shall be charged to the contractor by appropriate Change order.
- 16.3.5 If during the Project construction period the Owner insures properties, real or personal or both, adjoining or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, the Owner shall waive all rights in accordance with the terms of Subparagraph 16.3.7 for damages caused by fire or other perils covered by this separate property insurance. All separate policies shall provide this waiver of subrogation by endorsement or otherwise.
- 16.3.6 Before an exposure to loss may occur, the Owner shall file with the Contractor a copy of each policy that includes insurance coverage required by the Paragraph 16.3. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project. Each policy shall contain a provision that the policy will not be cancelled or allowed to expire until at least 30 days prior written notice has been given to the Contractor.
- 16.3.7 **Waivers of Subrogation.** If permitted by the Owner's and Contractor's insurance companies, without penalties, the Owner and Contractor waive all rights against (1) each other and any of their Subcontractors, Sub-subcontractors, agents and employees, each of the other, and (2) the Architect, Architect's consultants, separate contractors described in Article 6, if any, and any of their Subcontractors, Sub-subcontractors, agents and employees, for damages caused by fire or other perils to the extent covered by property insurance obtained pursuant to this Paragraph 16.3 or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the Owner as fiduciary. The Owner or Contractor, as appropriate, shall require of the Architect, Architect's consultants, separate contractors described in Article 6, if any, and the Subcontractors, Sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.
- 16.3.8 A loss insured under Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insured, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Subparagraph 16.3.10. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriated agreements, written where legally required for validity, shall require Subcontractors in similar manner.

- 16.3.9 If required in writing by a party in interest, the Owner as fiduciary shall, upon occurrence of an insured loss, give bond for proper performance of the Owner's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. The Owner shall deposit in a separate account proceeds he received, which the Owner shall distribute in accordance with such agreement as the parties in interest may reach or in accordance with an arbitration award in which case the procedure shall be as provided in Paragraph 4.5. If after such loss no other special agreement is made, replacement of damaged property shall be covered by appropriate Change Order.
- 16.3.10 The Owner as fiduciary shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five days after occurrence of loss to the Owner's exercise of this power; if such objection be made, arbitrators shall be chosen as provided in Paragraph 4.5. The Owner as fiduciary shall, in that case, make settlement with insurers in accordance with directions of such arbitrators. If distribution of insurance proceeds by arbitration is required, the arbitrators will direct such distribution.
- 16.3.11 Partial occupancy or use in accordance with Paragraph 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.

16.4 **PERFORMANCE BOND AND PAYMENT BOND**

- 16.4.1 The Owner shall have the right to require the Contractor to furnish bonds covering faithful performance of the Contract and payment of obligations arising there under as stipulated in bidding requirements or specifically required in the Contract Documents on the date of execution of the Contract.
- 16.4.2 Upon the request of any person or entity appearing to be a potential beneficiary of bonds, covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall permit a copy to be made.
- 16.4.3 When required by the Owner the Contractor, before commencing the Work, shall furnish a Performance Bond and a Labor and Material Payment Bond. The Performance Bond shall be in an amount equal to one hundred percent (100%) of the full amount of the Contract Sum as security for the faithful performance of the obligations of the Contract Documents, and the Labor and Material Payment Bond shall be in an amount to equal to one hundred percent (100%) percent of the full amount of the Contract Sum as Security for the payment of all persons performing labor and furnishing materials in connection with the Contract Documents. Such bond shall be on A.I.A. Document A-312, issued by the American Institute of Architects, shall be issued by a surety satisfactory to the Owner and shall name the Owner as primary obligee.

16.5 **MISCELLANEOUS REQUIREMENTS**

- 16.5.1 All insurance coverage shall be provided by insurance companies having policy holder ratings no lower than "A" and financial ratings not lower than "XII" in the Best's Insurance Guide, latest edition in effect as of the date of the Contract.
- 16.5.2 The Contractor is responsible for determining that Subcontractors are adequately insured against claims arising out of relating to the work. The premium cost and charges for such insurance, shall be paid by each Subcontractor.

SECTION 01B**SPECIAL CONDITIONS****ARTICLE 1S****TIME OF COMPLETION**

- 01 The contract involves the renovation of existing spaces and requires completion for occupancy in the least time consistent with good construction practices.
Hilton Elementary bathroom renovations are restricted to summer break construction (June 13th, 2024 to August 24th, 2024).

ARTICLE 2S**EXAMINATION OF SITE**

- 01 The General Contractor and those sub-contractors specifically involved shall be held to have examined the sites and have informed themselves of the conditions under which they must work. Their proposal shall make due allowance for the conditions that are reasonably apparent on site.

ARTICLE 3S**LAYING OUT WORK**

- 01 Each Sub-Contractor shall lay out the work, establish all levels and heights and provide the assistance of a competent surveyor for the work required by the sub-contractor.
- 02 The General Contractor shall establish a permanent benchmark where directed to which all measurements and levels shall be referred during the progress of the work.

ARTICLE 4S**TEMPORARY FIELD OFFICE**

- 01 The General Contractor shall establish a field office on site in location as directed by the Owner. Sub-contractors may at their option establish field offices if coordinated with the General Contractor.
- 02 The contractor's trailers, material storage, etc., shall be located so as to not interfere with Owner's use of existing building and parking areas on site when so occurring.

ARTICLE 5S**TEMPORARY UTILITIES**

- 01 Water: Water shall be available through Owners existing building on site. Mechanical Contractor shall furnish and maintain all temporary connections.
- 02 Electrical: Owner shall bear cost of metered power.
- 03 Telephone: The General Contractor shall maintain a working telephone instrument on site.

ARTICLE 6S**DELETED****TEMPORARY TOILETS****ARTICLE 7S****DELETED****COLD WEATHER PROTECTION****ARTICLE 8S****TEMPORARY HEAT**

- 01 All heating requiring temporary use of the permanent heating system shall be classified as "Temporary Heat".
- 02 The Heating Contractor shall have the permanent heating system ready to furnish temporary heat within 30 days after the building is enclosed. This shall include the setting of new boilers, unit ventilators and heating units with all necessary ductwork and piping to the boilers. Temporary heating units may be used where it is impossible to set permanent heating units.
- 03 The General Construction Contractor shall pay for all fuel for the operation of the system from the time that the system is first turned on until the Owner accepts the building. This shall include the cost of fuel; cleaning of boilers, ventilating units, filters, etc.; draining, cleaning and re-filling of system.
- 04 If the permanent heating system is used, the Heating Contractor shall be responsible for the system and its maintenance until acceptance by the Owner. A minimum temperature of 60°F and

a maximum temperature of 70°F shall be maintained during working hours and not less than 55°F at all other times.

ARTICLE 9S

SHOP DRAWINGS

- 01 All shop drawing submissions shall be examined by the General Contractor for coordination with other trades and general conformity to contract documents before submission to the Architect for the Architects review and shall bear the signature of the party so doing. The preferred submission of shop drawings is by electronic PDF drawings to the Lindhout Associates project architect, or his designee, at the appropriate e-mail address. Reviewed submissions will be returned electronically. Paper submissions, when necessary, shall furnish four (4) copies.
- 02 Corrections or comments made on the shop drawings during their review do not relieve the contractor from compliance with requirements of the drawings and specifications. This check is only for review of the general conformance with the design concept of the project and general compliance with the information given in the contract documents. The contractor is responsible for:
- Confirming and correlating all quantities and dimensions.
 - Selecting fabrication processes and techniques of construction.
 - Coordinating his or her work with that of all other trades and performing all work in a safe and satisfactory manner.
- 03 Architects review of Shop Drawings shall not be construed to relieve supplier of any obligations set forth in the original contract documents. Specific reference shall be made on the Shop Drawings of any changes in or contradictions of the original documents and specific acceptance of that contradiction must be made on the drawings by the Architect.
- 04 The preceding conditions are in addition to those covered under Article 3.12 of the General Conditions of the Contract.

ARTICLE 10S

CLOSE OUT AND GUARANTEES

- 01 At the completion of the Contract and prior to final payment:
- a. The General Contractor and sub-contractors shall give to the Owner a written guarantee that they will make good at their own expense any defects in material or workmanship, not due to ordinary wear or improper use, which may develop within one (1) year from the date of acceptance of the work unless otherwise stated in the specifications.
 - b. The Owner shall be furnished with the following as it may apply to the project and as called for in the specifications:
 1. Owner's manuals for operation and maintenance of equipment furnished under the Architectural trades.
 2. Owner's manuals for operation and maintenance for equipment furnished under the Mechanical contract; test reports of system balancing..
 3. Owner's manuals for operation and maintenance for equipment furnished under the Electrical contract; a complete brochure of lighting fixtures and lamps furnished; an as-built drawing of the electrical installation as described in the specifications.
 4. Any manufacturer certification and warranty for single ply roofing required beyond the normal two-year roofing guarantee.
 5. List of sub-contractors employed on the project, including addresses, phone and fax numbers.
 6. Final Certificate of Occupancy.

ARTICLE 11S

PROGRESS SCHEDULES

- 01 At the time of signing of the contract, the General Contractor, in co-operation with his sub-contractors, shall furnish a schedule giving the time of starting and finishing of each trade involved.

02 The Schedule shall be maintained throughout the job to give an up-to-date statement of progress and completion time.

03 Satisfactory rate of progress and completion on time shall be essential conditions of the contract.

ARTICLE 12S

DELETED

JOB SIGN

ARTICLE 13S

TEMPORARY PROTECTION

01 The General Contractor shall assume responsibility for the building, site and immediately adjacent areas, providing protection to meet the governing laws.

02 He shall provide suitable temporary walks, fences, enclosures, to maintain unobstructed areas for pedestrians, vehicles, fire protection equipment, etc., including temporary exit enclosures.

03 The General Contractor is referred to Article 10 of the General Conditions - Protection of Persons and Property.

ARTICLE 14S

ACCESS TO SITE

01 Contractors shall consult with Owner on maintaining access route to the site for construction vehicles. All damage to existing walks, drives and landscaped areas traversed by construction vehicles shall be made good by the General Contractor.

ARTICLE 15S

OWNER'S USE OF SITE

01 The Owner will maintain normal operation on the existing building on site during the construction period. The various contractors shall take all possible precautions to minimize interference with the operations. Specific considerations shall be as follows.

- a. Access to existing building shall be maintained at all times.
- b. Maintain uninterrupted, protected egress from all required exit doors of the building to the satisfaction of the Local Fire Marshal or Building Authority.
- c. On site storage of materials shall be arranged in such a manner to not interfere with the normal use of the parking areas. Particular consideration should be given to maintaining full access for Sunday services.

ARTICLE 16S

CONSTRUCTION SEQUENCE

01 Hilton Elementary: Between June 13th, 2024 and August 24th, 2024 (summer break) the existing building will be, in most part, inactive. The General Contractor shall schedule bathroom renovations between those dates.

ARTICLE 17S

OTHER CONTRACTORS

01 The contractor or contractors for this work shall at all times allow the Owner and any other contractors and their employees to be in the building or about the premises undisturbed as may be required in the execution of other portions of the building work, and installation of equipment, etc. Each contractor shall so arrange his work that it will interfere as little as possible with that of other trades or contracts; and in the event of disputes of such nature, the Architect's ruling in the matter shall be final and binding on all parties.

ARTICLE 18S

AWARD OF SUBCONTRACTS

01 The award of subcontracts shall be subject to the right of rejection by the Owner and the Architect of any individual sub-contractor. All contracts made by the General Contractor with sub-contractors shall be covered by the terms and conditions of the prime contract.

10

ARTICLE 19S**OCCUPATION OF BUILDING**

- 01 The Owner reserves the right to negotiate with the contractor to occupy the building, or any portion thereof, before the building has been finally completed and accepted. It being mutually understood and agreed that such occupancy does not relieve the contractors from completing their respective work or obligations within the time specified.
- 02 Considerations relative to insurance coverage during partial occupancy shall be as outlined in Article 16.3.11 of the Supplemental General Conditions, Section 1A of the specifications.

ARTICLE 20S**PERMITS**

- 01 The General Contractor shall apply and pay, where necessary, for all required building and land use permits; all required plan review fees; in addition to any other required permits.
- 02 The mechanical and electrical contractors shall apply and pay for their respective permits and any required plan review fees. They shall call for all inspections and comply with all requirements.
- 03 If an inspection fee is charged due to the failure of sub-contractor to meet code or make his work accessible for the inspection, he is responsible for the re-inspection fee charged, if any.
- 04 The General Contractor, sub-contractors and their suppliers shall comply with Michigan Building Code Section 1704 Special Inspections, as it may be applied to the project by the local Building Authority for inspections and certifications.

ARTICLE 21S**OWNER'S CONTINGENCY FUND**

- 01 The General Contractor shall include in his proposal a sum of 10% of total bid for an Owner's Contingency Fund.
- 02 The Contingency Fund shall be charged for unexpected field conditions and items of errors and omissions in the drawings and specifications.
- 03 The General Contractor shall be responsible for his own contingency allowance for default of, and errors of, sub trades as necessary to complete the intended scope of the work.
- 04 Overhead and profit on this sum shall be considered included in Base Proposal.
- 05 Unused portion of the Owner's Contingency Fund will be credited to Owner on Final Payment.
- 06 Significant changes in the work required by the Owner will be covered by Change Orders.

ARTICLE 22S**NON
DISCRIMINATION**

- 01 In connection with performance of work under this contract, the contractor agrees as follows:
- a. The Contractor shall not discriminate against any employee or applicant for employment with respect to hire, tenure, terms, condition or privileges of employment on a matter directly or indirectly related to employment, because of race, color, religion, national origin, age, sex, height, weight, or marital status pursuant to the Elliot Larsen Civil Rights Act, 1976, P.A. 453. The Agency and the Municipality shall also comply with the provisions of the Michigan Handicappers Civil Rights Act, 1976, P.A. 220 and the Federal Rehabilitation Act of 1973, P.A. 93-112, 87 Stat. 394, which require that no employee or client or otherwise qualified handicapped individual shall, solely by reason of his/her handicap, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal Assistance. No person shall, on the grounds of race, creed, color, sex, age, national origin, height, weight, handicap, or marital status be excluded from participation in, be denied the proceeds of, or be subject to discrimination in the performance of this contract. The Consultant further

covenants that it will comply with the Civil Rights Act of 1973, as amended; and the Michigan Civil Rights Act of 1976 (78. Stat. 252 and 1976 PA 453) and will require a similar covenant on the part of any consultant or sub-consultant employed in the performance of this contract.

ARTICLE 23S**DELETED****LOCAL BONDING REQUIREMENTS****ARTICLE 24S****TRADE AGREEMENTS**

01 The drawings and specifications make no attempt to define jurisdictional boundaries of the various trade unions. Systems and materials are specified under headings most suited to the project and construction locale from the Architect's and Owners viewpoint.

ARTICLE 25S**DELETED****GAS SERVICE****ARTICLE 26S****DELETED****SOIL EROSION PERMIT****ARTICLE 27S****DELETED****CONSTRUCTION FENCE****ARTICLE 28S****SAFETY RULES**

01 All contractors and their employees shall comply with applicable requirements of "General Safety Rules and Regulations for the Construction Industry", as promulgated by the Construction Safety Commission of the State of Michigan including all amendments.

02 General Contractor and all sub-contractors shall become familiar with and comply with the "Safety and Health Regulation for Construction" as promulgated by the Occupational Safety and Health Administrator of the U.S. Department of Labor.

ARTICLE 29S**CONNECTION CHARGES**

01 All charges for water and sewer connections shall be paid by the Owner at time of obtaining building permit.

ARTICLE 30S**BASE BID SPECIFICATION**

01 Whenever the specifications call for one specific product, material application, etc. the Contractor or sub-contractor shall bid solely on that which is named. All Base Bids shall then be consistent in such a manner as to permit the best possible evaluation of all proposals.

- a. The Owner and architect in no way wish to overlook any possible alternate material that may be satisfactory as a direct substitute. *A list of proposed alternates of materials, products, methods, etc., may be proposed to, or by, the General Contractor or Construction Manager for inclusion in the proposal to the Owner. The proposal to the Owner shall state the proposed substitute and the cost savings, if any, of the substitution.* The Base Bid, however, shall be based on all items as specified.
- b. Should any real and definite hardship result in the foregoing "Base Bid" the Contractor shall communicate the facts to the Architect, and if warranted, an addendum will be issued to all bidders rectifying the condition.

ARTICLE 31S**TESTING**

01 All testing as called for in the specifications shall be performed by a licensed testing laboratory approved by the Architect.

02 The General Contractor shall be responsible for obtaining and paying for the services of the approved laboratory for testing as outlined in the following Sections of the specifications as they may apply to the project:

- a. Section 02D – Storm Drains and Sanitary Sewers

1. As the local authority may require.
- b. Section 03A – Concrete Work
 1. All cast in place concrete.

ARTICLE 32S**DAVIS BACON ACT/PREVAILING WAGE**

01 In connection with performance of work under this contract, the contractor agrees as follows:

- a. The Contractor agrees to comply with the requirements of the Davis-Bacon Act as it applies to contractors and subcontractors performing on federally funded or assisted contracts in excess of \$2,000 for the construction, alteration, or repair (including painting and decorating) of public buildings or public works. All laborers and mechanics on projects funded directly by or assisted in whole or in part by and through funding appropriated by the Act are paid wages at rates not less than those prevailing on projects of a character similar in the locality as determined by subchapter IV of Chapter 31 of title 40, United States Code (Davis-Bacon Act).

For information on Davis Bacon Wage Determination please reference the Department of Energy's (DOE) EECBG Notice 10-004A and/or currently effective DOE Notices.

For more information and currently effective EECBG notices please visit:

http://www1.eere.energy.gov/wip/davis-bacon_act.html#eecbg

For information on Davis Bacon Wage Determination please visit: <http://www.wdol.gov/Index.aspx>

ARTICLE 33S**AMERICAN RECOVERY and REINVESTMENT ACT (AARA)**

01 In connection with performance of work under this contract, the contractor agrees as follows:

- a. The Contractor shall comply with the provisions of the American Recovery and Reinvestment Act (ARRA) for EECBG projects. The Buy American provision in the American Recovery and Reinvestment Act of 2009 (section 1605 of Title XVI), provides that, subject to three listed exceptions (non-availability, unreasonable cost, and inconsistent with the public interest), none of the funds appropriated or otherwise made available by the Act may be used for a project for the construction, alteration, maintenance, or repair of a public building or public work unless all the iron, steel, and manufactured goods used are produced in the United States. The law also requires that this provision be applied in a manner consistent with U.S. obligations under international agreements. The provisions of this guidance apply to all recipients, sub-recipients and contractors working on projects using Recovery Act funding. The Buy American Recovery Act provisions only apply to projects funded under the Recovery Act for the construction, alteration, maintenance or repair of a public building or public work. The guidance below is designed to help applicants and recipients determine if their Recovery Act funded project is for the construction, alteration, maintenance or repair of a public building or public work.

More information on the AARA please visit the following links:

http://www1.eere.energy.gov/recovery/buy_american_provision.html

http://www1.eere.energy.gov/recovery/pdfs/eere_program_guidance_buy_american.pdf

ARTICLE 34S**DELETED****WASTE STREAM MANAGEMENT****ARTICLE 35S****EQUAL EMPLOYMENT OPPORTUNITY**

01 In connection with performance of work under this contract, the contractor agrees as follows:

- a. The Contractor shall with Executive Order 11246 of Sept. 24, 1965, entitled "Equal Employment Opportunity", as amended by Executive Order 11375 of October 13, 1967, and as supplemented in Department of Labor regulations (41 CFR chapter 60).

ARTICLE 36S**COPELAND ANTI-KICKBACK ACT**

01 In connection with performance of work under this contract, the contractor agrees as follows:

- a. The Contractor shall with the Copeland "Anti-Kickback" Act (18 U.S.C. 874) as supplemented in Department of Labor regulations (29 CFR part 2). (Applies to contract and subgrants for construction or repair)

ARTICLE 37S**DEBARMENT, SUSPENSION, INELIGIBILITY
and VOLUNTARY EXCLUSION**

01 In connection with performance of work under this contract, the contractor agrees as follows:

- a. The Contractor shall with the provisions of 24 CFR Part 24 that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this contract. Additionally, the Consultant shall not use, directly or indirectly, any of the funds provided by this contract to employ, award contracts to, or otherwise engage the services of, or fund any contractor/subcontractor during any period that the contractor/subcontractor is debarred, suspended or ineligible under the provisions of 24 CFR Part 24.

ARTICLE 38S**PROHIBITION OF POLITICAL and RELIGIOUS ACTIVITY**

01 There shall be no religious worship or instruction as part of, or in connection with, the performance of this agreement. None of the funds, materials, property or services under this agreement shall be used in the performance of this agreement for any partisan political activity, including lobbying, as specified in Federal Circular A-122 Cost Principles for Nonprofit Organizations -- lobbying revisions, or to further the election, defeat, recall, impeachment, appointment or dismissal of any candidate for or from any public office.

SECTION 01C – BECC BUILDING ONLY**ALTERNATES**

- 01 In addition to the Base Proposal, each Bidder shall submit Alternate Proposals as follows:
1. Alternate No.1 – ADD for the inclusion of walk-off carpeting as indicated within the “BECC Building’s East Wing Classroom Renovations” drawings.
 2. Alternate No. 2 – ADD for the inclusion to renovate two (2) multi-occupant toilet rooms within the “BECC Building’s East Wing Classroom Renovations” drawings.

ALTERNATE NO. 1
DIVISIONS 02 AND 09

- 01 The intent of this alternate is to obtain the additive costs to change/add for the addition of walk-off carpet as indicated in Drawing Sheets D1.
- 02 The following considerations shall be made in quoting on the Alternate:
- a. Demo of existing tile floor areas shall be coordinated with Owner. Occupancy & use of the existing building is to be maintained.
 - b. Provide floor leveler as required prior to carpet installation.
 - c. New rubber base and carpeting as specified in Interior Design (ID) drawings sheets.
- 03 The work under this alternate shall be done in accordance with the base proposal specifications

ALTERNATE NO. 2
DIVISIONS 02, 09, 10, 15, AND 16

- 01 The intent of this alternate is to obtain the additive costs to change/add for the addition of renovations to existing multi-occupant toilet rooms as indicated on Drawing Sheets D1, A1, and A2.
- 02 The following considerations shall be made in quoting on the Alternate:
- a. Occupancy & use of the existing building is to be maintained. Coordinate plumbing and electrical shut-offs with Owner
 - b. Provide floor leveler as required prior to new tile installation.
 - c. Refer to Interior Design (ID) sheets for new finish materials. Refer to MEP drawings sheets for MEP information.
- 03 The work under this alternate shall be done in accordance with the base proposal specifications

SECTION 02L**REMOVAL AND DEMOLITION****SCOPE OF WORK**

- 01 All work under this heading shall meet requirements of Division 1 and Instructions to Bidders and include everything necessary and incidental to completion of removal and demolition work.
- 02 Work Included:
- a. Removal and demolition of existing building components as detailed on the Drawings Sheets specified herein.
 - b. This Contractor shall obtain and pay for all required permits and all bonding covering his work.
- 03 Certificates of insurance policies shall be filed with the Owner and the Architect prior to commencing work.

INSPECTIONS

- 01 Contractor and Owners representatives shall meet prior to beginning of work to inspect the site and establish limits of the work.
- 02 This contractor shall call for any inspections of the demolition work required by the local authority.

EXISTING SERVICES

- 01 Protect and maintain all active conduit, sewers, pipes, overhead and underground wires existing on the site.
- 02 This contractor shall be responsible to arrange with local service providers the removal of their respective meters and equipment when their services are scheduled or shown to be abandoned.
- 03 When occurring, this Contractor shall plug with concrete any abandoned storm or sanitary sewer lines at the property lines.

TEMPORARY PROTECTION

- 01 Provide, erect and maintain all necessary fences, planking, bracing, shoring, sheath piling, warning signs to protect the existing site and all persons using same or public sidewalks adjacent to the site.
- 02 Remove all protections when work is completed and hazardous conditions are no longer present.
- 03 Provide temporary weather protection and building security of existing space during the removal of existing enclosures and coordinate with other trades the timing of the removal and their ability to continue temporary protection.

REMOVAL AND DEMOLITION

- 01 Perform all removal and demolition work as outlined on the drawings.
- 02 All paint and component coatings are assumed to contain lead at detectable levels. If the coatings are to be disturbed, the contractor is responsible for complying with all requirements of the Occupational and Safety Health Administration (OSHA) Lead in Construction Standard (29 CFR 1926.62). All work shall be conducted by EPA Certified personnel.

- 03 Materials that may become hazardous during demolition shall be removed and disposed of properly prior to the commencement of any demolition.
- 04 Some items shall be salvaged/re-used or salvaged/returned to Owner where shown on the drawings.

RECYCLED MATERIAL

- 01 Removal and Demolition Contractor shall employ any offered recycling service available for the various materials being removed from the building.

WORKMANSHIP

- 01 All work shall be executed in an orderly and careful manner, with due consideration for adjacent property holders.
- a. Driveways and parking areas shall be kept clear and swept daily.
 - b. Rubbish and debris shall be removed promptly and not allowed to accumulate.
 - c. Sprinkle rubbish and debris with water as required to control dust.

PROHIBITED ACTIVITIES

- 01 Prohibited activities are as follows:
- a. Creation of "Attractive Nuisances".
 - b. Storing, unprotected or overnight, of hazardous or dangerous materials.
 - c. Burning of any nature.
 - d. Burying of rubble on site.

ASBESTOS CONTAINING MATERIALS

- 01 Asbestos containing materials in regulated amounts have been detected or assumed. These materials shall be abated prior to disturbance.
- 02 The Owner's representative will provide environmental area air monitoring. The selected bidder will be responsible for complying with the requirements of 29 CFR 1926.1101 and appendix A of the attached applicable hazardous material surveys relating to permissible exposure limits.
- 03 All abatement work must commence as noted in the scope of work for the project. All issues listed in the scope of work must be fulfilled. It will be a requirement that the project will be completed prior to the completion date agreed upon before the commencement of abatement operations. The project will only be considered complete once an appropriate clearance is obtained for the work area according to federal regulations, state acts and project specifications and the site is cleaned and vacated by the Contractor.
- 04 All abatement work performed by this Contractor must comply with all applicable federal regulations and state acts. Any fines or monies levied against the owner or Performance Environmental Services, Inc. due to activities or omissions by the Contractor will be charged to the Contractor and subtracted from the invoice amount.
- 05 Throughout the duration of the project, this Contractor shall have an accredited competent person on site when asbestos is being removed.
- 06 A mandatory pre-bid walk-through is scheduled for bidders to identify and quantify the materials to be removed.

- 07 It is the Contractor's responsibility to familiarize themselves with the work areas and all materials which are to be abated prior to the submittal of a bid. All specific information included in this bid package in regards to sizes, amounts or materials are only estimations of the work that will need to be accomplished. **The Contractor accepts complete responsibility for the bid based on his own measurements and projections for the scope of the abatement project.**
- 08 The contractor will be responsible for disposal of all waste generated on-site. If a dumpster is required to be placed on-site, it is the contractor's absolute responsibility to be present to properly locate the dumpster when it is delivered.
- 09 The following is a summary of the scope of work, See attached hazardous material survey for each building for more detailed scope, findings, recommendations and certificates of laboratory analysis. Abatement work will include the locations and materials listed at the end of this Section. It is the Contractor's responsibility to quantify all materials to be abated.

DIVISION 03**CONCRETE****GENERAL**

- 01 All concrete work shall be detailed and constructed in accordance with the latest specifications of the American Concrete Institute and Concrete Reinforcing Steel Institute and all materials shall conform to current standard specifications of the ASTM as may apply to the work and respective materials.

SECTION 03A**CONCRETE****SCOPE OF WORK**

- 01 All work under this heading shall meet requirements of Division 1 and Instructions to Bidders and include everything necessary and incidental to completion of items outlined.
- 02 Work Included:
- a. Supported floor slabs, slabs on grade, slab patching/infilling, reinforcing mesh.
 - b. 4" sand bed at slabs on grade.
- 05 Items furnished by other divisions for installation by this Division:

- 06 Work by Others:

MATERIALS

- 01 Cement: Shall be Portland Cement (ASTM C-150 Type 1) of American Manufacturer.
- 02 Aggregate: All aggregate shall conform to ASTM C-33 Specifications for Concrete Aggregate. Maximum aggregate size shall not exceed 3/4 of clear space between reinforcing bars or 1/5 minimum thickness of formed slabs.
- a. Pea Gravel shall be clean washed river-run gravel, 3/8" size and conform to ASTM C33.
- 03 Combined Aggregate: Shall be of such composition as to permit between 30% and 50% to pass through a No. 4 sieve.
- 04 Water: Shall be suitable for drinking purposes.
- 05 Sand: Shall meet MDOT specification for Grade 2 porous fill containing less than 5% of particles passing a No. 200 screen
- 06 Reinforcing Steel: Shall be ASTM A-615 specifications for deformed billet steel for concrete reinforcement (Fy=60,000 psi).
- 07 Reinforcing Mesh: Shall be ASTM A-185 specification for wire mesh having a rigid connection of intersecting wires. Gage of wires and spacing is shown on drawings.
- 08 Concrete: Limits for proportions of concrete made with average materials are indicated in the following table. Trial mixtures shall establish exact proportions for all materials to be used within the limits of the table.

CLASS OF CONCRETE	MINIMUM 28 DAY STRENGTH (PSI)	MAX. W/C RATIO LBS. HOH/LB. CEMENT	NOM. AGGR. SIZE	MINIMUM CEMENT CONTENT PER CUBIC YARDS* WEIGHT		SLUMP	AIR CONT .%
STRUCTURAL CLASS 5	4500	0.49	3/4" 1 -1/2"	Determined by trial mix		4"	2 1
STRUCTURAL CLASS 4	4500	0.54	3/4" 1 -1/2"	6-1/4 5-3/4	588 541	4"	2 1
STANDARD EXPOSED CONCRETE	4500	0.45	3/4" 1-1/2"	6-1/4 5-3/4	611 541	3" 4"	6 5-1/2
STANDARD FLOOR CONCRETE**	4000	0.45	3/4" 1-1/2"	6 5-1/2	564 517	3"	3-1/2 4-1/4
STANDARD FOUNDATION CONCRETE	3000	0.60	3/4" 1-1/2"	5-1/2 5-1/4	517 494	3"	2 1
STANDARD CONCRETE TOPPING	3500	0.60	3/8" pea gravel	6	564	4"	2

* Cement content may be reduced by 1/2 bag per cu. yd. for un-reinforced mass concrete.

** Omit air entraining agent in hardened slabs.

Additional design mixes by the supplier that meet the above performance requirements are permitted pending proper documentation and submission for Architect's approval prior to bid due date.

09 Admixtures: For air entraining and water-reducing shall be as manufactured by W.R. Grace Co. or Master Builders, and employed in strict accordance with the manufacturers recommendations (ASTM C260 & ASTM C494, Type A). Air content in air entrained concrete delivered shall be +/- 1-1/2 percent. Non-corrosive, non-chloride accelerator shall be "Accelguard" by The Euclid Chemical Co. (ASTM C494, Type C or E). No admixtures containing chloride ions are permitted. No fly ash shall be permitted in exterior concrete.

10 Reinforcing Fibers:

a. Synthetic Fibers: Shall be 100% virgin nylon (polyamides) fibers from Axim Italcementi Group, PO Box 234, 8282 Middlebranch Road, Middlebranch, Ohio, 44652. Fibrosol N fibers shall be used in all concrete where indicated under "Material Location" in the specifications. The fibers shall be used in strict compliance with the manufacturer's recommendations as to type and amount and/or as indicated on drawings. The fiber manufacturer or approved distributor shall provide the services of a qualified employee for a pre-job meeting and initial job start up. Only fibers designed and manufactured specifically for use in concrete from 100% virgin nylon (polyamides) and so certified by the manufacturer shall be acceptable.

b. Steel Fibers: Shall be ASTM A820 Type 1 cold drawn wire fibers from SI Corporation, 4019 Industry Drive, Chattanooga, Tennessee 37416. Novocon 1050HE fibers shall be used in all concrete locations as specified within the contract documents. The fibers shall be used in strict accordance with the manufacturer's recommendations as to type and amount and/or as indicated on drawings. The fiber manufacturer or approved distributor shall provide the services of a qualified employee for a pre-job meeting and initial job start up. Only steel fibers designed and manufactured specifically for use in concrete

from ASTM A820 Type 1 cold drawn wire and so certified by the manufacturer shall be acceptable.

- c. Accepted Alternate Manufacture: Contractor may submit, to the architect for review, alternates for potential acceptance as an equal product.
- 11 Expansion Joint Material: W. R. Meadows or equivalent conforming to ASTM D-1752 for interior work and ASTM D1751 for exterior work.
- 12 Curing Compound: ChemRex "Masterkure N-Seal VOC" or Sonneborn "Kure-N-Seal, Euclid Chemical "Diamond Clear VOX" or Dayton Superior "Safe Cure & Seal" (J-18).
- 13 Combination Curing Compound / Hardner: Sonneborn " Kure-N-Harden.
- 14 Non-Shrink Grout: ChemRex "Masterflow 928" or "Sonogrout" 10K, grout.
- 17 Perimeter Insulation: Shall be Dow Styrofoam "Scoreboard" extruded polystyrene foam insulation or U.S.I. "FoamulaR", 2" x 24".
- 18 Vapor Barrier: .010 polyethylene film.
- 19 Waterstops: Celco Waterstop-RX.

MATERIAL LOCATIONS

- 01 Sand: At grading course below slabs on grade.
- 02 Standard Floor Concrete: Patch & infill slabs on grade
- 03 Concrete Engineered Reinforcing Fibers:
- 04 Expansion Joint Material: At all slabs abutting concrete or masonry walls.
- 05 Curing Compound: Floor slabs and walks.
- 06 Vapor Barrier: Below all slabs on grade.

FORM WORK

- 01 Form work shall follow ACI-347 "Recommended Practice for Concrete Form Work." Forms shall be constructed of wood planking or plywood (use plywood where concrete is exposed above grade,) or be of a re-usable metal type. Chamfer all external corners of exposed work.
- a. Permitted abrupt or gradual irregularities in formed surfaces shall be Class A C D as scheduled in Table 3.1 of the above reference.
- 02 All forms shall be mortar tight, rigid, strong and so constructed to prevent distortion during the placing of concrete. Due allowances shall be made for impact. Forms shall be built to given dimensions and maintained until concrete is of sufficient strength for removal. Concrete members shall have obtained sufficient strength to sustain dead and live loads without damage before removing any form work.
- 04 Provide necessary metal accessories to hold forms in correct alignment. Accessories shall be so constructed as to permit removal to a depth of at least 1 inch from the surface of the concrete. Tie rods shall be held in place by devices attached to walls. Use cone type, not wire ties or pipe.

REINFORCING STEEL AND MESH

- 01 Provide shop drawings for all reinforcing steel.
- 02 On site storage of reinforcing steel shall provide isolation from the ground and protection from the weather.
- 03 All reinforcement bar and mesh shall be free of paint, dirt, oil and excessive rust.
- 04 Place reinforcement as shown on the Drawings in a secure manner to prohibit displacing during the pouring of concrete. Bars shall be securely wired together at their intersections.
- 05 Mesh reinforcement shall be carefully and frequently hooked during the placement of floor slabs on grade to assure its placement at a distance approximately 1-1/2" from the top of the slab.
- 06 Provide OSHA approved caps for all exposed ends of reinforcing steel extending beyond completed pours and awaiting future embedment.
- 07 Where optional trenched concrete foundation walls are used (See FOUNDATION WALLS), set bottom steel on concrete bricks to maintain 3" clearance from earth. Top steel shall be placed into concrete at completion of trench pour while concrete is still of proper consistency to receive the bars and maintain them in proper position.

CONCRETE

- 01 Concrete shall be transit-mixed from a plant approved by the Architect, and shall conform to ASTM Designation C-94/94M.
- 02 The transit-mix plant shall have in operation satisfactory measuring devices to assure accurate and uniform proportions of the materials as specified. Verification of this information shall accompany each individual delivery to the job site. Information shall include material quantities of the mix: moisture contents; admixes, (if any); size of the load and time of day and date when truck was loaded.
- 03 Mixing trucks shall be of an approved design to provide separate container for holding water. Mixing water shall be added **ONLY** at the proper time required to provide necessary consistency and not to exceed maximum slump as specified.

DEPOSITING CONCRETE

- 01 No concrete shall be placed without prior notice to Architect.
- 02 All formwork shall be cleaned, wetted down or oiled (in freezing weather) before depositing concrete. When placing concrete on grade, fill shall be smooth and firmly tamped to proper elevations. See Division 02 for compaction requirements.
- 03 Concrete shall be conveyed from mixer to the place of deposit in buggies, carts or conveyers as soon as possible after mixing. Do not use troughs. Handling of concrete shall be done in such a manner as to prevent free fall of more than three (3) feet. Always place concrete into face of previously placed material. When placing into deep forms, discharge concrete through hose or hopper directly to the level of the material being placed so as to prevent free fall.
- 04 All pours shall be continuous, keeping concrete plastic until final levels are attained. Take all necessary precautions to prevent voids and surface defects. Tamp or vibrate as conditions warrant. Penetrate previously placed layers at regular intervals when vibrating. Consult with Architect on location of all construction joints required.

FLOOR SLABS ON GRADE

- 01 This contractor shall provide 4" sand bed on sub-grade prepared by Division 02 for all slabs on grade. All work shall be performed in accordance with Section 02C.
- 02 Generally concrete floors on grade shall be 4" thick. Maintain full slab thickness above all conduit and piping. Match existing adjacent slab thicknesses.
- 03 Expansion joint shall occur at perimeter of slabs and at isolated columns where occurring and shall consist of 1/2" thick expansion joint material, full depth of slab.
- 04 Surfaces shall be troweled smooth and level, free from waves.

- a. The flatness and levelness requirements shall be defined by the following Face Floor Profile Numbers:

Flatness F _F	Levelness F _L	Typical Use
20	15	Non-critical Areas
25	20	Commercial office carpeted areas
35	25	Thin-set flooring areas, moderate warehouse traffic
45	35	Polished slabs – "B" class finish
50	40	Areas receiving precision and/or testing equipment

- b. The As-Built flatness and levelness of the floors shall be tested in accordance with ASTM E 1155 as soon as possible after placement and no longer than 72 hours. Reports shall be made immediately available to the Architect.
- c. Substantial variances with the required numbers will require replacement of the slabs. Grinding and planning are permitted only at minor variations.
- d. Provide broom finish and scoring as shown at entrance slab and walks.
- 05 Maintain established elevations and grades throughout the pour.
- 06 Apply curing compound within 18 hours of finishing slabs. Compound shall be uniformly applied in accord with manufacturers specifications.
- 07 Apply hardener in accord with manufacturers specification to all slabs scheduled to receive hardener.
- 07 Apply hardener in accord with manufacturers specification to all slabs scheduled to receive hardener. Coverage to be 150 lbs. Per 100 square foot of slab. After completion of hardener application provide curing compound per manufacturers recommendations.
- 08 Consult with Architect for location of construction joints separating pours.
- 09 Provide and install perimeter insulation where indicated on the drawings. Insulation shall be installed vertically (and horizontally at perimeter heating ducts) and be placed directly below the bottom of the slab. Maintain position of insulation throughout placing of concrete to insure complete insulation barrier for perimeter of building and heating ducts.
- 10 Note areas requiring dropped slab to receive separate floor finishes.
- 11 Provide metal screed set level at operable wall openings to insure proper floor level to receive door seals.

- 12 Provide recesses for floor closers when scheduled under Division 08.

CONCRETE TESTING

- 01 General Contractor shall arrange and pay for an approved independent testing laboratory to make test cylinders of all poured-in-place concrete. Test cylinders and laboratory tests shall be made in accord with ACI Standards and ASTM Specifications. Provide a minimum of one test (consisting of three cylinders per each test) for each 50 cubic yards placed, but not less than one test per day. One cylinder shall be broken at 7 days; tow at 28 days. Cylinders shall be properly cured by the laboratory making the tests.

CURING AND WEATHER PROTECTION

- 01 Protect concrete at all times, keeping surfaces damp for at least seven days in warm weather, and keep covered as long as required in freezing weather.
- 02 Cold weather concreting work shall be performed in accordance with ACI 308.1-11 at the following minimum temperatures:
- a. Air Temperature 30-45 degrees F: Concrete temperature 60 degrees F minimum.
 - b. Air Temperature 0-30 degrees F: Concrete temperature 65 degrees F minimum.
 - c. Air Temperature below 0 degrees F: Concrete temperature 70 degrees F minimum.
 - d. Maintain concrete temperature at not less than 50 degrees for at least 7 days.
- 03 Warm weather concreting shall be performed in accordance with ACI 302.1-11 with the maximum allowable temperatures of 90 degrees.
- 04 The method of maintaining the proper temperature during hardening shall be subject to prior approval. Obtain Architects approval of any admixtures employed to facilitate cold and hot weather concreting.

POINTING AND CLEANING

- 01 Where walls, slab edges and concrete other than specified to be etched is exposed to view, fill all holes, smooth all irregularities and point smooth with mortar. Concrete shall be steel brushed clean and left in smooth even color.

GUARANTEE

- 01 This contractor shall provide a written guarantee all work under this contract shall be free of any defects in material or workmanship, not due to ordinary wear or improper use, which may develop within one (1) year from the date of acceptance of the work.

DIVISION 04**MASONRY****GENERAL**

- 01 All mason work shall conform with the latest standards of the National Concrete Masonry Association; the American Concrete Institute; the National Masonry Institute; the Building Code Requirements for Masonry Structures (ASCE 5/TMS 402), Specification for Masonry Structures (ASCE 6/TMS 602) and all materials shall conform to current standard specifications of the ASTM as they apply to the work and respective materials. Laying methods shall be in accordance with the recommendations of the Masonry Institute of Michigan.

SECTION 04A**GENERAL MASONRY WORK****SCOPE OF WORK**

- 01 All work under this heading shall meet requirements of Division 01 and Instructions to Bidders and include everything necessary and incidental to completion of items outlined.
- 02 Work included:
- a. Exterior brick and block walls.
 - b. Interior block walls and partitions.
- 03 Items furnished by other Divisions for installation by this Division:
- a. By Division 05 - All loose steel lintels, shelf angles, bearing plates and miscellaneous steel elements built into masonry.
 - b. By Section 5H – Wall tie studs.
- 04 Work by Others:
- 05 Work furnished to others for installation:

MATERIALS

- 01 All Portland, natural and masonry cements, quicklime and hydrated lime for use in masonry mortar and grout shall meet the minimum strength requirements of ASTM C270 and ASTM C476.
- 02 Water: Shall be suitable for drinking purposes.
- 03 Aggregate: Shall be natural sand and shall conform to the requirements of the Specification for Masonry Mortar, ASTM C144.
- 04 Prepared Mortar: Shall conform to ASTM Specification C91 masonry cement.
- 05 Mortar Coloring: Soloman Grind-Chem Services, CPI Industries
- 06 Integral Color Mortar: Holcim Rainbow Products Rainbow Mortamix Custom Color Masonry Cement or Medusa Custom Color Masonry Cement (Preferred alternate to Mortar Coloring).
- 07 Limits for proportions of mortar and grout made with average materials are indicated in the following tables:
- a. Portland Cement / Lime Mortar

Mortar Type	Portland Cement	Lime	Sand
M	1	1/4	3 ¾

S	1	1/2	4 ½
N	1	1	6
O	1	2	9

b. Masonry Cement and Mortar Cement

Mortar Type	Portland Cement Type or Mortar Cement Type	Portland Cement or Blended Cement	Sand
M	1(M)		3
or M	1(N)	1	6
S	1(S)		3
or S	1(N)	1/2	4 ½
N	1(N)		3
O	1(N)		3

08 Mortar Additives: Water reducer and repellent shall be Krete Gard Mortar Mix as manufactured by Krete Industries, Inc. Mix shall contain no chlorides. No other additives shall be used without submission of complete product documentation and written approval of the Architect.

09 Grout: Shall be coarse grout meeting the requirements of Modified ASTM C-476, providing 21.93 cubic feet of Portland Cement and 605 cubic yards of coarse aggregate. Grout shall have a minimum compressive strength of 3000 psi at 28 days. Aggregate for grout shall meet ASTM C 404.

10 Concrete Masonry Units (CMU): Shall be load bearing burned clay, burned shale, cinder or blast furnace slag aggregate modular units conforming to the Concrete Masonry Specifications for use in the State of Michigan, Technical Series No. 4.08.55. Units shall meet ASTM C90 Specifications with aggregate meeting ASTM C331. Units shall meet UL requirements for 2 Hour rating.

- a. Provide pre-cast lintels meeting ASTM C1072 as called for of the above material.
- b. Provide all necessary standard units to accommodate the various conditions indicated on the drawings for slab bearing, dampproofing, door jambs, window jambs, bullnose, etc.

11 Face Brick: Shall conform to the Standard Specification for Facing Brick ASTM 216, latest edition. Brick shall be Grade SW , Type FBX.

Brick Size: Match existing.

12 Weep Vents: Shall be Dur-O-Wal Cell Vent Weep Hole Ventilator, 3-5/8" x 3/8" wide. Weeps shall be furnished in color approved by the Architect to match mortar. Mason-Pro and Mortar Net products acceptable.

13 Masonry Reinforcing Wire: Shall be Hohmann and Barnard, Inc. ASTM A153/153M, Class B2 hot dip galvanized after fabrication, as scheduled below. Alternate Manufacturers: Duro-Wal, Block-Mesh, Heckman.

Wall Materials		Grouted Piers	Reinforcing Wire		
Veneer	Back-up		No.	Name	Size
	8" or 12" Block	No	120	LOX-ALL TRUSS REINFORCEMENT	Std.

	8" or 12" Block	Yes	220	LOX-ALL LADDER MESH REINFORCEMENT	Std.
4"	8" or 12" Block	No	165	LOX-ALL TRUSS-BOX-MESH	Std.
4"	8" or 12" Block	Yes	265	LOX-ALL LADDER-BOX-MESH	Std.
4"	Studs	n/a	120	LOX-ALL TRUSS REINFORCEMENT (size to match veneer thickness)	Std.

- 14 Wall Ties: Wire Bond SureTie WS Anchoring System. Conformance: ASTM A82 / A82M (cold drawn steel wire), ASTM A153 / A153M-B2 (zinc coating). System consists of #4515 Adjustable double hook, #4522 wire slot and #4590 thermal grip washer. Insulation depth: verify existing conditions as needed. Alternate Manufacturer: Hohmann & Barnard.
- 15 Through wall flashing: Shall be Hohmann & Barnard, Inc. Epra-Max EPDM Thru-Wall Flashing or W.R. Grace Perm-a-Barrier wall flashing. Provide pre-formed corners.
- 16 Metal Drip Plate Flashing: Shall be 26 gauge (.0187") stainless steel.
- 17 Rigid Insulation: Shall be Dow Styrofoam "Scoreboard" extruded polystyrene foam insulation or U.S.I. "Foamular", 2" x 24".
- 18 Cavity Wall Insulation: Dow "Cavitymate Plus", Owens-Corning Foamular CW25, 16" wide, 1" (1.5" or 2") thick.
- 19 Foamed in Place Fill Insulation: Shall be cfiFOAM, Inc, Core Foam; Tailored Chemical Products "Core-Fill 500, or PolyMaster, Inc. Polymaster high pressure aminoplast foam Insulation
- 20 Strap Tie Holdowns: Shall be Simpson Strong Tie Connections, PA51 or PA68, 12 gauge, to suit conditions shown.
- 21 Pea Stone: Shall be commercial grade pea gravel with sizes ranging from 1/2" to #8 mesh round particles.
- 22 Damproofing: Shall be Shall be ChemRex Sonneborn, Masterseal 610, Mameco, Tremco TREMproof 201/222.
- 23 Pan Flashing: Shall be Blok-Flash - High-density polyethylene composition mold, .0625 in. thick flashing pan with .3125 perimeter flanges.
- 24 Cast Stone: Custom cast stone shall meet or exceed ASTM C1364. Manufacturer shall be a current member of the Cast Stone Institute. Color shall be as selected from standard colors.
- a. Provide units as matching existing conditions.

ON SITE STORAGE

- 01 Store all masonry units, aggregates and accessories on elevated platforms, under cover, and in a dry location. If units become wet do not install until they are in an air-dried condition.

SUBMISSIONS

- 01 Provide product data for masonry accessories including mortar mesh, weep vents, wire reinforcing, wall ties, etc. for Architects review.

MATERIAL LOCATIONS

- 01 Mortar Type M: Masonry in contact with earth.
- 02 Mortar Type S: Masonry above grade, grouted and filled masonry; piers of hollow units; interior masonry, partitions, conditions other than above.
- 03 Mortar Type N: Non-bearing masonry veneer above grade (brick and block).
- 04 Concrete Masonry Units (CMU): as needed at interior for wall patching
- 05 Mortar Coloring:
- 06 Masonry Reinforcing Wire: Shall be used in all unit masonry above grade. Wire shall be used at 16" centers vertically in all block partitions; block and brick veneer and block walls.
- 07 Wall Ties: At all veneered masonry. Ties shall be placed at 16" on center vertically and maximum of 32" on center horizontally.
- 08 Face Brick: As needed for infill/repair at window replacement and exterior louver replacement locations.
- 09 Through wall flashing: Shall be provided at the grade line of exterior brick walls; intermediate location at two story wall areas; below stone copings and window sills; at all exterior steel and block lintels. Where membrane roofing does not carry over the top of parapet walls provide through wall flashing below masonry copings.
- 10 Weep Vents: Shall be installed immediately above all through wall flashings and as indicated on the drawings.
- 11 Holddown Straps: At base of stud walls throughout perimeter of building.
- 12 Metal Flashing: At all two piece flashings; shelf angles.
- 13 Rigid Insulation:
- 14 Cavity Wall Insulation:
- 15 Foamed in Place Fill Insulation:
- 16 Pea Stone: Shall be provided on flashing course in cavity space at building perimeter and in cavity space above through wall flashing at all window openings, door openings and shelf (relieving) angles.
- 17 Damproofing: Shall be provided consistently on the exterior of the interior masonry within the cavity wall.
- 18 Pan Flashing: Shall be provided at base flashing of single wythe CMU exterior walls
- 19 Cast Stone: As needed at BECC Building when/if needed at window replacement.

LAYING MASONRY UNITS

- 01 All work shall be laid to the proper lines. Each pier and wall shall be kept plumb and each course level with joints, accurately maintained. Lay all masonry utilizing necessary care to achieve cleanliness. Remove excess mortar from exposed exterior and interior masonry surfaces as the

work progresses and before it adheres to the face of the masonry. Clean mortar droppings from all exposed reinforcing loops.

- 02 All concrete masonry units shall be laid in accordance with, and the tolerances of the Concrete Masonry Specifications for use in the State of Michigan, except as may be specifically stated otherwise herein.
- 03 All walls shall be carried up simultaneously as nearly as practicable, properly braced until tied in, and raked back at all changes to insure thorough bonding.
- 04 All concrete masonry walls shall be wire reinforced at 16" o.c. vertically. Additionally, provide layer of reinforcing above all lintels and below all sills (18" beyond each side of opening). Lap all corners; center in walls and cover with mortar before laying masonry.
- 05 Brick veneer shall be laid with brick ties secured to wall studs. Ties shall be embedded in the mortar joint of the brick veneer a minimum of 1/2 the veneer thickness. Provide wall ties at a maximum 16" o.c. vertically and either 24" or 32" o.c. horizontally depending upon stud spacing.
- 06 Build in all required anchors, steel lintels, metal door frames, etc., furnished by other trades. Provide wood bucks where required to receive finished woodwork. Provide anchor bolts at masonry walls for wood plates and wood blocking.
- 07 At masonry walls below grade, fill all cores with grout to grade. Grout lifts shall be 5'-0" maximum. Grout in all hold down connectors where required and leave sufficient projection of straps to permit attachment of bottom wood plate by Division 06.
- 08 At cavity walls the exterior wythe shall be laid without furrowing. At bed joints, mortar shall be spread, then beveled into a pyramid shape with the apex of the pyramid located approximately 1/3 of the thickness of the brick in from the exterior face of the wythe. Adjust as necessary to accommodate the area and shape of the brick cores. At head joints, spread mortar to cover the entire width and height of the edge of the unit and batter slightly at the face and back edges. Position brick into contact with bed mortar from the back side, approximately 1 inch away from the previously laid brick and behind the line. With a continuous motion, bring the brick into final position while compressing both the bed and head joints.
- 09 Through Wall Flashing: Shall be installed in strict accordance with manufacturers instructions. Provide two piece flashing here indicated on drawings. Membrane shall extend to within 1/2" of face of wall and overlap metal flashings forming a drip as detailed, and be carried unbroken thru wall above grade or over steel lintels as shown on drawings. When indicated on the wall details the flashing material may be terminated at the face of the wall and not be provided with the metal flashing. At foundation walls membrane shall commence 12" minimum below grade, rise vertically to brick ledge and be carried across ledge and extend a minimum of 12" vertically up back up. Use adhesive tape, spray primer, self adhering flashing material or termination bars to terminate vertical extensions. Lap all joints as required by manufacturer. Provide end dams at all horizontal flashing terminations. Provide mortar mesh or pea gravel where specified under "Material Locations" and install weep holes where indicated.
- 10 Install weep vents at 32" on center horizontally above all through wall flashing. Vents shall be installed flush with face of veneer and tightly fit.
- 11 Build slots or chases in masonry walls to receive plumbing pipes, heating pipes, conduit, ducts, etc. Slots in bearing walls not indicated on the drawings shall be located as directed by the Architect.
- 12 Slush all hollow metal door frames full with mortar. Fill at "Hi-hats" if applicable where walls and partitions meet metal floor and roof deck. Grout elevator sill and frames as required.

- 13 Employ masonry saw wherever necessary to provide clean, sharp unchipped edges. Provide neat fitting work at electrical boxes, etc. (Outlet boxes are specified with square corners under Division 16).
- 14 Joints shall be generally 3/8" thick and concave for brick and block where exposed; struck joints for interior brickwork.
- 15 Provide grout at bond beams at bearing level of first floor and/or roof framing. Provide 2 - #5 continuous reinforcing bars in bond beams with corner bars around corners and at wall intersections. Lap splice bars. Maintain position of reinforcing bars 2" to 3" from top of course and maintain 1/2" cover to shell face when placing grout. Set anchor bolts and bearing plates for all joists and plates. Anchor bolts shall be galvanized after fabrication.
- 16 Provide grout at all beam and joist bearing plates. Secure reinforcing in cores prior to grouting. Maximum grout lift shall be 5'-0". Fill all block bond beams, maintaining position of reinforcing.
- 17 Provide grout at all vertical piers and horizontal lintels as detailed. Rod or vibrate grout to insure complete filling of cores.
- 18 Provide vertical control joints where shown on drawings or at intervals not to exceed 24 feet. Joints in masonry units shall be either pre-formed type or grouted break bond type as detailed. Consult with Architect for all locations required, but not specifically shown on the drawings.
- 19 Mortar Mesh: Clean flashing and weep holes so they are free of mortar droppings and debris immediately prior to installing Mortar Mesh. Lay the first one or two courses of brick at flashing level, then install the mortar mesh continuously by placing it against the inside of the outer wythe, dovetail shaped section of the material facing up, directly on the flashing at the base of the wall and over all wall openings. No fasteners or adhesives are required, and mortar need not have set. Mortar mesh may be cut as necessary to accommodate wall ties, conduit, plumbing, or other materials that bridge cavity.
- 20 Dampproofing shall be applied in strict accordance with manufacturer's specifications. Surfaces shall be prepared to receive the dampproofing coat. Apply by spray or with roller. Protect all terminations with manufacturer's approved mastic.
- 21 Provide fill insulation in all exterior block wall cores with top fill or pressure-injection technique. Application of insulation shall be installed in accordance with manufacturer's instructions.

PROTECTIONS

01 In cold weather mortar shall be protected in accord with the following schedule:

WORK DAY HIGH TEMP.	CONSTRUCTION REQUIREMENT	PROTECTION REQUIREMENT
Above 40F	Normal masonry procedure	Cover walls with plastic or canvas at end of work day to prevent water entering masonry.
40F-32F	Heat mixing water to produce mortar temperatures between 40F and 120 F	Cover walls and materials to prevent wetting and freezing. Covers should be plastic or canvas.
32F - 25F	Heat mixing water and sand to produce mortar temperature between 40F	With wind velocities over 15 mph provide windbreaks during the work day and cover walls and materials at the end of the work day to prevent wetting and freezing.

	and 120F	Maintain masonry above freezing for 16 hours using auxiliary heat or insulated blankets.
25F - 20F	Mortar on boards should be maintained above 40F.	
Below 20F	Heat mixing water and sand to produce mortar temperature between 40F and 120F.	Provide enclosures and supply sufficient heat to maintain masonry enclosure above 32F for 24 hours.

- 02 No corrosive admixtures (accelerator, colorants, etc.) shall be used during cold weather when any metal (wire reinforcement, metal door frames, wire ties, conduit, etc.) is in contact with the masonry. Any non-corrosive admixture shall be approved by the Architect as stated under "Materials".
- 03 In hot weather, precautions shall be taken to prevent too rapid drying of the mortar.
- 04 In below freezing weather remove any visible ice or snow from the top of surface of foundations or other masonry. Heat surfaces above freezing, using methods that prevent damage.
- 05 Incomplete construction not being worked on shall be protected at all times with moisture resistant covers held securely in place.

CAST STONE WORK

- 01 Provide and install all cast stone work if needed during window replacement scope. Cast stone work shall be in accordance with the recommended practices of the Technical Manual of the Cast Stone Institute
- 02 Stone shall be of thickness and sizes indicated on the drawings. Provide all necessary cutting for strap anchors, dowels or Lewis holes. Provide reinforcing bars where required.
- 03 Provide non-corrosive metal "Z" and "U" straps as required for proper anchorage of cast units.
- 04 Cast stone joints shall be 1/4" flush. All stone shall be set in non-staining type mortar on dampproofing course. Anchoring and flashing shall be in accordance with Technical Bulletin No. 47.
- 05 Touch-up and Repair: Damage to stone either while in transit or during installation shall be classified as repair.
- a. Touch up: Any chip obvious from a 20' distance should be touched up with material provided by the manufacturer. Chips measuring 1/4" and less across the face may be left alone. The stone mason shall include touch up as part of the ordinary pointing and washdown operations prior to final inspection.
- b. Repair: – Chips measuring larger than 1/4" across the face shall be addressed as soon as possible following occurrence of damage. The procedure for repair shall include dressing the damage and applying fresh material to achieve the required finish and shape, covering the repair with a wet rag and/or plastic cover, then taking steps to blend the repair into the adjacent areas. Stone units with large damage shall be replaced.

CLEANING

- 01 All exposed masonry shall be thoroughly cleaned as soon as practicable after laying of units. This contractor shall obtain the recommendations of the brick manufacturer relative to the type of cleaning agents employed for the type and nature of the brick furnished. Cleaning shall be done with stiff fiber brush. Do not power wash. Point all joints so requiring and carefully examine the work to incorporate any necessary replacements prior to Final Acceptance.

GUARANTEE

- 01 This contractor shall provide a written guarantee all work under this contract shall be free of any defects in material or workmanship, not due to ordinary wear or improper use, which may develop within one (1) year from the date of acceptance of the work.

SECTION 05H**LIGHT GAUGE STEEL FRAMING****SCOPE OF WORK**

- 01 The work under this Section shall provide all materials, labor, protections and appliances necessary to furnish, deliver, and install cold rolled metal studs and light gauge metal framing indicated on the Drawings and noted herein.
- 02 Work by Others:
- a. By Section 09C – Interior Gypsum Board Installation.
- 03 Work furnished by Others for installation by this Section:

MATERIALS

- 01 All structural members shall be as manufactured by Unimast Inc., and designed in accordance with American Iron and Steel Institute (AISI) Specification for the Design of Cold-Formed Steel Structural Members and conform to the requirements of ASTM C645 with minimum yield strength of 50ksi for SJ studs and 33ksi for CR runners. All structural members shall be zinc coated meeting ASTM A653.
- a. Accepted Alternate Manufacturers: U.S. Steel Super C Steel Framing, Clark-Western, Dietrich Metal Framing, Custom Stud, Inc.
- 02 Metal Framing System:
- a. Exterior: None
- b. Interior:
1. Studs - ST, sizes as indicated on drawings, gauges: 3-5/8" up to 9'-0" high - 25 gauge; 3-5/8" 9'-0" to 16'-0" - 20 gauge; 3-5/8" over 16'-0" – 18 gauge. 6" any height - 20 ga., 8" any height - 18 ga., Furring shall be 25 gauge.
 2. Runners - CR25 - sizes as indicated on drawings.
 3. Steel Framing: Unimast SJ members for load-bearing wall applications.
 4. Furring Channels – Z-furring channels, 1½" deep; hat channels 7/8".
 5. Flexible framing – 20 ga. hot dipped galvanized steel ASTM A653 Structural Grade 33, : as manufactured by Flex-Ability-Concepts. (www.flexc.com)
 - a. Flexible Tracks: Flex-C Trac, width as required, and Flex-C Angle, with slideable strap
 - b. Flexible Arch: Flex-C Arch, width as required..
 6. Shaft wall studs – CH type, 20 ga.
 7. Strap Blocking (when used) shall match gauge of studs receiving blocking.
- 03 Fasteners: Per Selector Guide for USG Screws - for conditions of use.
- 04 Sill Sealer: Continuous fiber glass roll, 1/2" thick, width to suit wall.
- 05 Rough Bucks and Blocking: See "Materials" - Section 6A for framing lumber, plywood sheathing, and preservative treated material requirements.
- 06 Non-combustible Wall Sheathing: ½" USG Securock or Dens-Glass Gold as manufactured by Georgia Pacific. Gypsum Sheathing manufactured in accordance with ASTM C1155 with glass mats on both sides and long edges, water resistant treated core. Note: This material contains

filament fiberglass – utilize gloves, eye protection and respirator. Follow manufacturer’s written instructions.

- 07 Sheathing: Shall be APA Rated Plywood Sheathing.
- a. Roof Sheathing: Shall be 40/20 Exterior Exposure 1, 19/32” thick sized for spacing.
 - b. Wall Sheathing: Shall be 32/16 Exterior Exposure 1, 15/16” thick sized for spacing.
 - c. Floor Sheathing: Shall be Rated Sturd-I-Floor Exterior Exposure 1, 23/32” thick underlayment sized for spacing, T&G net width 47 ¼”.

- 08 Infiltration Barrier: Not used.

MATERIAL LOCATIONS

- 01 Metal Framing System: Interior walls & soffits as needed.

- 02 Metal Furring: Interior walls & soffits as needed.

- 03 Sill Sealer: Under all sill channels of exterior stud walls.

FABRICATION

- 01 All framing components shall be cut squarely for attachment in a manner to prevent racking and to minimize distortion while lifting and transporting.

- 02 In all doubled jamb studs and doubled headers not accessible to insulation contractor, provide insulation equal to that specified under Section 07C.

INSTALLATION

- 01 General: All framing components shall be plumb, aligned and leveled. Fastening of components shall be with self-drilling screws or welding. Screws and welds shall be of sufficient size to insure the strength of the connection. Wire tying of the components shall not be permitted. All welds shall be touched up with a zinc-rich paint.

- 02 Walls: Provide metal stud partitions and framing where indicated and required to complete the partitioning and enclosure system. Studs shall generally be on 16" centers with continuous sill and head runners. Anchor runners to floor and ceiling structure with power driven fasteners. Provide bead of acoustical sealant to concrete floors prior to securing runners to floor (sill sealer at exterior walls).

1. Secure all studs to runners with four (4) pan head or low profile screws. Position studs no more than 2" from all door jambs, abutting partitions, partition corners, etc. Anchor all studs adjacent to above conditions with positive screw engagement to runner flanges thru stud flanges. Studs at openings shall be heavy gauge. Spot grout jamb anchor clips.
- b. Cut sills and headers form joist members and install openings. Securely attach runners to supporting studs on each side of opening and install cut to length studs between runners.
- c. Where structural deflection is a consideration provide slip or slotted track detail suitable to accommodate the anticipated deflection. Detail shall be as standard with the manufacturer of the studs. Where fire walls meet metal roof decking provide movement system to meet UL HW-D-0060 requirements for fill and seal at deck. At exterior curtain walls provide deflection clips where required and/or shown on the drawings.
- d. Fit all required blocking between studs to receive work of other trades. Provide rough bucks as required at all door and window openings.

- 03 Ceiling Drops: Provide metal framing at all ceiling drops over cabinets, mechanical duct and pipe enclosures, light cove details, structural steel enclosures, and other miscellaneous framing to complete the enclosure system. Framing members shall generally be spaced in relationship to adjacent wall and ceiling framing. Provide stop beads, corner beads and control joints as required to complete the drop details.
- 04 Load Bearing Walls: Axially loaded studs shall be installed so the ends are positioned against the inside of the runner track web prior to fastening and shall be attached to both flanges of the upper and lower runner tracks. Complete, uniform and level bearing support shall be provided for the bottom runner. Framing of wall openings shall include headers and supporting studs. Resistance to bending and rotation about the minor axis shall be provided by horizontal strap and blocking or cold rolled channel bracing. Provide flat strap cross bracing where required for stability. Provide additional studs where required to resist vertical loads.
- a. Shear Walls where designated on the drawings shall be provided for frame stability and lateral load resistance. Additional studs, when necessary, shall be positioned and adequately attached to the structure to resist the vertical components of the loads.
- 05 Joists: Uniform and level joist bearing shall be provided at the foundation walls by means of shims and/or non-shrink grout. Joists shall be located directly over bearing studs, or a load distribution member shall be provided at the top of the bearing wall. Framing of wall openings shall include headers and supporting studs. Resistance to bending and rotation about the minor axis shall be provided by horizontal strap and blocking or cold rolled channel bracing. Provide flat strap cross bracing where required for stability. Provide additional studs where required to resist vertical loads. Web stiffeners shall be provided at reaction points and/or points of concentrated loads. Joist bridging shall be provided as required and shown on the drawings.
- a. Additional joists shall be provided under parallel partitions when the partition length exceeds one-half the joist span, and around all floor and roof openings which interrupt one or more spanning members.
- b. End blocking shall be provided where joist ends are not otherwise restrained from rotation.
- 07 Insulation:
- a. Fasten panels to each support with fasteners spaced 12 inches on center at perimeter and 16 inches on center in panel field. Set back perimeter fasteners 3/8" from edges and ends of panel units. Drive fasteners to bear tight and flush with surface of insulation. Do not countersink. Perimeter fasteners can be detailed to bridge the gap of abutting board joints due to the 1.75" diameter of the washer used to fasten the board to the studs. Maximum of two board joints may be bridged per fastener.
- b. Install flashing joint tape at end and edge joints with sufficient hand pressure to ensure seal and in accordance with sheathing manufacturer's joint sealing recommendations.
- c. Install flashing tape behind wall tie and mechanical fastening assemblies for rain screen claddings.
- d. Seal sheathing joints and penetrations of sheathing in accordance with sheathing manufacturer's joint and penetration sealing recommendations.
- e. After base flashing, which may include a termination bar running horizontally along the top edge of the flashing, is installed on exterior of insulated sheathing, install WEATHERMATE™ Flashing 6 inch or 9 inch", high-density polyethylene (HDPE) film facer with 100% butyl rubber adhesive to the exterior sheathing and lapped over the top edge of the base flashing.

SHOP DRAWINGS

- 01 Prior to fabricating of framing, this contractor shall submit the following for Architect's review.
- a. Fabrication and erection drawings. Drawings shall include the complete wall and ceiling systems and all ceiling drops and enclosures including. Drawings will indicate size and gage designations, number, type, location, and spacing. Indicate supplemental strapping, bracing, splices, bridging, accessories, and details required for proper installation.
 - b. Product data and installation instructions for each item of cold-formed metal framing and accessories.
 - c. Provide structural calculations covering the work signed by a professional engineer registered in the State of Michigan.

GUARANTEE

- 01 This Contractor shall guarantee all materials and workmanship under this heading for a one (1) year period from the date of acceptance.

DIVISION 06**CARPENTRY****SCOPE OF WORK**

- 01 All work under this heading shall meet requirements of Division 1 and Instructions to Bidders and include everything necessary and incidental to completion of items outlined.
- 02 Work included, but not limited to:
- 03 Work furnished by other Divisions and installed by this Division:
- a. By Section 08A-Finish Hardware
 - b. By Section 08B-Metal Doors and Frames
- 04 Work furnished by other Divisions:

SECTION 06A**GENERAL CARPENTRY WORK****GENERAL**

- 01 This Section includes all work necessary and incidental to the rough carpenter work and shall be executed in a manner consistent with the best practices of the trade.

MATERIALS

- 05 Preservative Treated Material: Shall be pressure impregnated in accordance with National Institute of Standards and Technology (NIST):
1. PS 1, U.S. Product Standard for Construction and Industrial Plywood.
 2. PS 20, American Softwood Lumber Standard.
- and American Wood Preservers Association Standards American Wood-Preservers' Association (AWPA):
1. Standard C1, All Timber Products – Preservative Treatment by Pressure Process.
 2. Standard C9, Plywood
- All material shall bear an American Wood Preservers Bureau Quality Control Mark. Lumber shall be kiln dried to 19% or less for lumber, 18% or less plywood, after treatment. Material shall meet retention requirements for above ground and for ground contact as employed.
Preservative: Copper azole in accordance with AWPA Standard P5.
- 07 Plywood: Shall be APA Rated Plywood Sheathing or plywood blocking where shown on the drawings.
- a. Wood Blocking: Shall be Exterior Exposure ¾" thick minimum, laminated panels where shown or required.
- 09 Plywood Blocking: Shall be APA Rated, preservative treated, thickness as required.
- 15 Adhesive: OSI GreenSeries construction adhesive meeting ASTM E72 and D3930. V.O.C. content < 2 g/L (1% by weight).

MATERIAL LOCATION

- 01 Plywood Blocking: At parapet walls; window sills.
- 02 Pressure Treated Lumber: Wherever framing material, blocking, etc. comes in contact with concrete or masonry and where exposed to weather.
- 08 Adhesive: Where required for rigidity of framing or backing.

SHOP DRAWINGS

- 01 This Contractor shall furnish shop drawings of all laminated timbers, trusses and engineered joists for Architect review.
- 02 Drawings shall include sizing of all members, stress diagrams and all connectors. Provide erection drawings with instructions on erection procedures, bridging and temporary bracing.
- 03 Where required by local code, provide copies of shop drawings to building authority.

TEMPORARY CLOSURES

- 01 This Contractor shall provide weather tight enclosures where necessary over exterior and interior openings.
- 02 Provide temporary doors as required for access to building. Provide locks as necessary for building security.

PROTECTION OF WORK

- 01 This Contractor shall provide such coverings as required to protect wood work from damage of any nature.
- 02 This Contractor shall cover all cut stone work subject to damage.

ROUGH CARPENTRY AND FRAMING

- 01 Provide and install wood stud framing for exterior and interior walls where shown. Studs shall generally be at 16" on center with continuous sill plate and double top plate. Provide cripples and lintels at openings as required. Provide fire stopping where required.
- 02 Provide grounds of required thickness and cross blocking between [metal] studs to receive millwork, toilet room accessories, coat racks and work of other trades.
- 03 Install hollow metal door frames furnished by Division 8 where occurring in steel stud walls and partitions and masonry openings. Frames shall be set accurately and rigidly secured per frame manufacturers directions. . At stud walls provide grout fill in hollow metal door frames.
- 04 Place all engineered joists in accordance with the drawings and approved shop drawings. Note manufacturer's installation requirements. Provide erection bracing in addition to bridging as required to keep joists straight and plumb and assure adequate lateral support for the entire system until the sheathing material has been applied. Provide bridging in accordance with manufacturers standards.
- 05 Place all trussed rafters in accordance with the drawings and approved shop drawings. Note manufacturer's installation requirements. Installation shall be in accordance with Handling, Installing and Bracing Wood Trusses, HIB-91, TPI. Provide erection bracing in addition to bridging as required to keep rafters straight and plumb and assure adequate lateral support for the individual rafters and the entire system until the sheathing material has been applied. Provide bridging in accordance with manufacturers standards.
- 06 Sheathing shall be applied with long dimension across joists or studs with alternate sheets staggered. Nail at 6" o.c. along panel edges and 12' o.c. at intermediate supports with 6d common nails. Maintain recommended spacing between sheets with plastic separators.

- 07 Install infiltration barrier over exterior wall sheathing throughout prior to installation of windows. Use maximum available material width and install in accordance with manufacturers instructions. Overlap adjacent rolls a minimum of 8". Tape barrier to foundation wall and seal all lap joints and terminations with approved sealing tape.
- 08 Install wood blocking at parapet walls and roof edge where shown. Form to shapes shown providing level and true lines. Recess bolts and nuts flush with surface of blocking where required. Coordinate with Roofing Contractor re: metal copings.

ROUGH HARDWARE

- 01 Provide and set all anchors, ties, bolts, nails, etc., required to properly carry out the Carpenter work. Anchors built into masonry walls will be provided and installed by Division 4.
- 02 All connectors, bolts, washers, nuts, screws, nails for pressure treated material shall be hot dipped galvanized or stainless steel to prevent excessive corrosion.

GUARANTEE

- 01 This Contractor shall guarantee that all work executed under this contract shall be free from defect in materials and workmanship for a one (1) year period after date of acceptance.

SECTION 06B**FINISH CARPENTRY AND MILLWORK****SCOPE OF WORK**

- 01 This Section includes all work necessary and incidental to finish carpentry, countertops and millwork.
- 02 Work by Others:
- a. By Division 15 - Installation of Sinks in Countertops.
 - b. By Section 09E – Ceramic tile work on counter fronts.
 - c. By Section 06A – Blocking within walls.

QUALITY ASSURANCE

- 01 For work described in Millwork Schedule as "Special", the "Quality Standards" of the Architectural Woodwork Institute shall apply and by reference are hereby made a part of this specification. Any reference to Premium, Custom or Economy in this specification shall be as defined in the latest edition of the Architectural Woodwork Standards".
- 02 For work described in Millwork Schedule as "Prefab(ricated)" the performance standards of the ANSI/KCMA Specification A161.1 shall apply.
- 03 Finished carpenter work shall be executed by trained personnel and include all items necessary for proper operation and appearance. Work shall be completed in a manner consistent with the best practices of the trade.
- 04 Stonework for countertops shall be in accordance with Industry Standards and Practices as set forth by the Marble Institute of America.

MATERIALS

- 01 High Pressure Decorative Laminates: For cabinet and case work, high-pressure melamine laminate in accordance with NEMA LD3 Standards. For counter tops, back splashes and edging (AWI defined "Exposed") - General Purpose Grade (Grade HGS, Nominal Thickness: .048"); for vertical surfaces, cabinet liner (AWI defined "Semi-exposed") - Vertical Grade (VGS, Nominal Thickness: .028 thick).
- a. Finishes per Interior Design drawings sheets.
 - b. Colors and patterns per Interior Design drawings sheets.
 - c. Approved Manufacturers: per Interior Design drawings sheets.
- 02 Solid Surfacing Material: Shall per Interior Design drawings sheets.. Thicknesses shall be 1/4", 1/2", 3/4" and 1" as detailed on drawings.
- a. Finishes shall per Interior Design drawings sheets.
 - b. Colors shall be per Interior Design drawings sheets.
 - c. Sinks, lavatories and shower bases where called for shall be selected from manufacturer's standard available sizes.
- 03 Composite Panel Core Material: Shall have physical and mechanical properties, screw- holding capabilities, thickness tolerances and formaldehyde emission limits meeting ANSI A208.1-

1999 Standard Grade H-3 for particleboard or ANSI A208.2-2002 MDF Grade160 for medium density fiberboard.

- 04 Drawer Stock: 3 heights; correspond with drawer fronts on millwork elevations. Length corresponds with cabinet depth.
- 05 Plywood: Shall be APA Standards Grade A-B (A-D where D face is concealed), generally 3/4" thickness.
- 06 Flush Wood Doors: Shall conform to the latest edition of the Architectural Woodwork Standards Section 9: Flush Wood Doors: Shall conform to the latest edition of the Architectural Woodwork Standards Section 9. Accepted Manufacturers: VT Heritage (Heritage Collection PC-5 Specifications used herein), Masonite Cendura and Five Lakes Manufacturing manufactured conforming to ANSI/NWMA I.S.1. Doors shall meet Quality Standards Illustrated of the American Woodworking Institute, Custom Grade. Doors shall meet Quality Standards Illustrated of the American Woodworking Institute, Custom Grade.
- a. Cores: Particle Board Core, ANSI A208.1, Grade LD-2, 70% of door construction weight, pre-consumer recycled materials.
 - b. Vertical Edges (Stiles): Structural Composite Lumber (SCL) or Fire Composite as requires with matching/comparable wood veneer, matching HPDL or finished mill option (primed or Painted edges,
 - c. Horizontal Edges (Top & Bottom Rails): Structural Composite Lumber {SCL} or fire composite as required – Sealed Top & Bottom Rails.
 - d. Faces: Wood Veneer, HPDL Horizontal Grade Standard (Meets NEMA Standard LD-3 or MD.
 1. Veneers available from both manufacturers: White Birch, White Oak (Plain Sliced Only), Red Oak, White Maple.
 - e. Crossbands: High Density Fiberboard (HDF), 20% of door construction
 - f. Standard Bevel: 1/8" in 2" or 3"
 - g. Finish: Wood Veneer: WDMA TR-8/AWS System 9 (UV Cured Acrylated Polyurethane): Primed factory finish or opaque finish; laminate; wood grains, solid colors, and patterns.
 - h. Veneer Match / Face assembly: Book match standard. Slip or random available; face assembly; running match standard, center, balanced, or center balanced available.
 - i. Adhesive: Type 1 adhesive.
 - j. Factory machining: Pre-drilled hinge pilot holes. All cutouts for mortise hardware should be made at the factory from hardware manufacturer's templates and approved shop drawings.
 - k. Quality Standards: WDMA I.S, 1-A @ AWD, Section 9 Quality Standards (Bonded Core).
 - l. WDMA Performance Level: Heavy Duty. For extra heavy duty, blocking for hardware required
 - m. Sustainability: CARB Phase 2 / TSCA VI Compliant.
GREENGARD GOLD OR SCS Advantage Gold
FCS Union Request. Consult VT for LEED documentation.
Environmental Product Declaration (EPD).
Health Product Declaration (HPD).
 - n. Door Weight: Approx. 5.5 lbs/sg. ft.
 - o. Lite Openings / Louvers: Factory Glazig recommended – max 5/16" glass. Available with standard ;profile wood beads, standard metal vision frames, or standard applied grilles. Standard wood and metal louvers, non rated doors only.
 - p. Warranty Limited Lifetime, interior use only. View warranty.

MATERIAL LOCATIONS

- 01 Plastic Laminates: per Interior Design drawings sheets. BHS millwork as indicated.
- 02 Solid Surfacing Material: per Interior Design drawings sheets. BHS millwork as indicated.
- 03 Particle Board or Medium Density Fiberboard: Millwork structure.
- 04 Plywood (Rough): Telephone boards.
- 05 Plywood (Finish):
- 06 Wood Doors: See Door Schedules provided on Drawing Sheets.

CASEWORK

- 01 Casework for High Pressure Laminate: for "Special" Millwork and all counter top, edging and back splash work shall meet AWI Quality Standard 400B, Architectural Laminate Clad Cabinets, Custom Grade, minimum.
- 02 Construction Details: Shall conform to Flush design with cabinet surfaces as defined under AWI Specification Division 400 G-1 supplied as follows:
 - a. Exposed Surfaces, back up surfaces: General Purpose Laminate (.048" thick).
 - b. Semi-Exposed Surfaces: General Purpose Laminate (.028" thick).
 - c. Concealed Surfaces: Painted or sealed.
 - d. All door and drawer fronts and counter tops shall be edge laminated prior to applying face veneer.
 - e. All inside corner cut-outs shall have radius cut.

CABINET HARDWARE

- 01 For "Special" Millwork furnish at each door:
 - a. Hinges: Steel, wrap-a-round type, tight pin hinge, 2 -3/4", Stanley No. 1592 sized for 3/4" door, US 26D finish, three hinges per door over 48" high; four hinges per door over 60"; five hinges per door over 84".
 - b. Door Catches: Ten pound pull, aluminum magnetic type (Weber-Knapp #6988, Epco #1000 or equal). Two fourteen pound pull catches for doors over 72" high.
 - c. Pulls: 3" wire pulls, Epco MC-402-3 (Colonial, Stanley). Finish: Dull Chrome (DC) or stainless steel (SS).
- 02 For "Special" Millwork furnish at each drawer:
 - a. Pulls: 3" wire pulls, Epco MC-402-3 (Colonial, Stanley). Finish: Dull Chrome (DC) or Stainless Steel (SS).
 - b. Optional Drawer Slides (soft-close): Knappe and Vogt #8455FM, or approved equal
- 03 Furnish at all adjustable shelving:
 - a. Shelf Standards: Knappe and Vogt #233 with #237 clips, clear aluminum to match external cabinet hardware, spacing as required for usage. Provide #80 standards and #180 brackets for closet shelving where shown. Grant equal accepted. Standards shall be recessed flush.

MILLWORK CONSTRUCTION

- 01 General: All parts shall be mill finished, flush type fronts overlapping ends. Exposed ends shall be flush construction and shall match fronts.
- 02 Doors and drawer fronts shall be veneered both sides with plastic laminate. Edges shall be veneered where exposed to view or contact. Doors and drawer fronts shall be 5/8" core. Drawer construction shall be as detailed.
- 03 Lead edge of all plastic laminate counter tops shall have face depth as detailed, minimum - 1-1/2". Provide 1" radius on all exposed corners.
a. HGS high-pressure decorative laminate or 3mm PVC band with .125 radius top and bottom corner.
- 04 High pressure decorative laminate counter tops and back splashes shall be self edged and veneered on 3/4" material with all edges returned in plastic laminate. Back splash shall be secured to counter top and provided with top edge oversize for scribing or be field applied after scribing to adjacent surfaces. Work shall generally be done without metal edges, coves, etc. Full height back splashes may be adhered to wall material where conditions permit a finished installation.
- 05 Solid phenolic, epoxy resin, and natural/engineered stone countertops shall be built up with butt splash waterfall edge, square edge.at splash.
- 05 All shelving shall be adjustable with metal standards and brackets.

FINISH HARDWARE

- 01 This Contractor shall install finish hardware as provided by Section 08A - Finish Hardware. He is specifically referred to that Section of the Specifications for his responsibility in regard to the hardware.
- 01 This Contractor shall install finish hardware and security hardware as provided by Section 08A-Finish Hardware and Section 08B- Electronic Security Hardware. He is specifically referred to those Sections of the Specifications for his responsibility in regard to the hardware.
- 02 All finish hardware shall be fitted and then removed until painter has finished his work, at which time it shall be permanently set.
- 03 Do not fabricate until Architect has reviewed shop drawings.

INSTALLATION

- 01 Installation shall be made by trained personnel and complete in every respect. It shall include all necessary items required for the proper operation and appearance.
- 02 Install all units and items as located under "Millwork Schedule".
- 03 This Contractor shall be responsible to make certain that millwork is not delivered to the jobsite until the building and storage areas are sufficiently dry and proper temperatures be

maintained to insure that millwork will not be damaged by excessive changes in temperature and moisture content. A minimum of 72 hours shall be allowed for any material to acclimatize.

- 04 All sinks shall be furnished and installed by the Mechanical Contractor. Provide necessary cutouts in counter tops for items furnished and do all that is necessary to coordinate the installation with the Mechanical Contractor. Coordinate any installation details of ceramic tile with Tile Contractor.
- 05 All units shall be carefully plumbed, leveled and all hardware left in perfect working order. All items shall be carefully cleaned prior to turning over to the Owner. Follow laminate manufacturer's instructions on methods of cleaning laminate surfaces.
- 06 Hand and fit all wood doors. Provide plumb and accurate alignment with uniform clearance at frame. Follow door manufacturer's instructions on guarantee relative to storage, handling, installation, etc.
- 07 Install all standing and running wood trim, and wood rails where shown on drawings.
- 08 Hang all hollow metal doors. Provide proper clearances throughout. Install rubber bumpers after painting is complete.
- 09 All solid surfacing material shall be installed strictly in accordance with manufacturer's instructions. Countertops shall have surface-to-surface edge assembly, 1 1/2" minimum edge depth with bull-nose edges. Backsplashes shall have square joints with top member scribe piece. Integral sink and lavatory bowls shall have flush, bull-nose edges.

SAMPLES

- 01 Sufficient size samples of interior wood trim, plastic laminates, finished plywood, wood door veneers, solid surfacing and other finish materials shall be submitted for approval through the General Contractor.

SHOP DRAWINGS

- 01 Submit detailed Shop Drawings of the work for Architect's approval. Drawings shall include all equipment furnished, special conditions of installation.
- 02 The millwork manufacturer is responsible for details and dimensions and shall show on his shop drawings all required for field dimensions **beyond** his control. The General Contractor and the Millwork manufacturer shall cooperate to establish and maintain these field dimensions.
- 03 When granite is furnished the drawings shall include the general layout, jointing, anchoring, stone thickness and all connection details. Sink cutouts shall be sized and located on the drawings.

GUARANTEE

- 01 This Contractor shall guarantee that all work executed under this contract shall be free from defect in materials and workmanship for a one (1) year period after date of acceptance.

DIVISION 07**MOISTURE PROTECTION****SCOPE OF WORK**

01 All work under this Division shall meet requirements of Division I and Instructions to Bidders and include everything necessary and incidental to completion of items outlined.

02 Work Included, but not limited to:

- a. Roofing and Sheet Metal Work
- b. Sealant Work
- c. Sound and Thermal Insulation
- d. Waterproofing
- e. Metal Wall Panels.

03 Work by Others:

- a. By Section 06A or Section 05H - Wood blocking at parapets and roof perimeter.

SECTION 07A**ROOFING AND SHEET METAL WORK****GENERAL**

01 All roofing work shall conform to the latest specifications and recommendations of the manufacturer of the materials employed in the work for the structural conditions indicated on the drawings. Sheet metal work shall generally follow the recommended practices of the SMACNA Architectural Manual. All work shall be installed by skilled mechanics of the trade and executed in a manner consistent with the best practices of the trade.

02 Work under this section shall include single ply roofing, metal siding, metal copings and flashing.

MATERIALS

01 Single Ply Membrane Roofing and Flashing: Shall be a single ply roofing system as manufactured by an established roofing manufacturer. Method of securing of membrane shall be match existing. Membrane thickness shall be .060 inches actual. Membranes shall match existing. Bonded membrane permitted if exposed surface is white. Installation shall bear a 15 year warranty.

- a. Acceptable Manufacturers: Carlisle, Firestone, Johns Manville, Duro-Last, Sarnafil, Dow.
- b. All flashing, bonding adhesive, seam tape, splice adhesive, lap sealant, mastic, pitch pan sealer and primer shall be as furnished by the membrane manufacturer.
- c. Weather Limitations: Proceed with installation only when current and forecasted weather conditions permit roofing system to be installed in accordance with manufacturer's written instructions and guarantee requirements.
- d. Volatile Organic Content of roofing membrane shall not exceed 250 grams / litre

02 Sheet Metal: Shall be 24 OR (22) gauge Berridge Manufacturing Co. pre-treated G-90 galvanized steel with Kynar 500 or Hylar 5000 finish. Color as selected from Berridge Standard Colors.

- 03 Fastenings: Nails, screws, etc., shall be best grade to meet compatibility requirements of material being secured, and be as furnished by the manufacturer of the roofing system where employed in same.
- 04 Elastic Cement: Federal Spec. SS-C-153.
- 05 Rigid Insulation: Shall be Closed-cell HCFC FREE "Green" Polyisocyanurate Foam board insulation laid in a minimum of two equal layers providing a minimum in service thermal resistance of the insulation only of R=23.6. Facers shall be glass reinforced felt. Insulation shall be as furnished by the manufacturer of the roofing system being employed.
- 06 Tapered Insulation: Shall be tapered and flat polyisocyanurate as required to meet sloping conditions as shown on the Roof Plan. System of layering flat and tapered sections shall be as approved by the manufacturer of the roofing system being employed.
- 07 Base Flashing: Cured or uncured EPDM. Compatible metal where required.
- 08 Membrane Base: High Density Fiberboard Roof Insulation as approved by manufacturer of roof system being employed.
- 09 Insulation Fasteners: Shall be as furnished and approved by the manufacturer of the insulation and the roof system being employed.
- 12 Green Roof Slip Sheet/Root Barrier: Shall be as approved by the membrane manufacturer for the installation conditions of the project. Coordinate with Section 07L Contractor.

MATERIAL LOCATIONS

- 01 Single Ply Membrane Roofing System: At flat roof patch areas throughout projects where roof penetrations occur.
- 02 Sheet Metal: As required for parapet, flashing, etc. repair.
- 03 Rigid Insulation: As required for infill/repair work associated with new work.
- 04 Membrane Base: At unheated areas.

INSPECTION

- 01 The roofing contractor shall inspect all surfaces which are to receive his materials and report any discrepancies to the Architect before commencing work. Proceeding with installation of insulation or roofing materials shall indicate acceptance of surfaces by this Contractor.

INSTALLATION

- 01 Single Ply Roofing:
- a. The roofing system, flashing and accessories must be applied in strict accordance with the approved manufacturer's latest printed manual for a roofing system for the type and slope of structure indicated.
 - b. Examine substrates, areas, and conditions for compliance with requirements affecting performance of roofing system.
 - c. Proceed with installation only after unsatisfactory conditions have been corrected

- d. Roofing shall be applied by a roofer approved by the manufacturer.

02 Insulation

- a. Insulation shall be kept dry at all times. Only as much as can be covered with roofing shall be applied in any one day.
- b. Insulation shall be laid in a minimum of two layers.
- c. Boards shall be laid in parallel courses, each course staggering joints with adjacent course and layer above. Bring boards into moderate contact; do not force.
- d. Installation of the insulation shall be as approved by the manufacturer of the roofing applied.
- e. Where mechanically secured insulation is used, provide metal clips of length suited to thickness of insulation being secured. Install in accordance with Factory Mutual Approved Rates by Wind Uplift Classification for type of insulation used.

03 Flashings (Single Ply Roofs):

- a. Pressure Bar Flashing, Base Flashing, and Termination Details shall be as required by the manufacturer whose materials are applied. Details on the drawings indicate design requirements. Provide manufacturers approved flashing termination at base of parapets and carry flashing vertically up parapet walls and across top of parapet at all copings. Where counter-flashing occurs provide termination as approved by manufacturer of roofing system.
- b. Provide manufacturers approved flashing and counter flashing details at all mechanical curbs, plumbing vents, roof sumps and other roof penetrations.

WORKMANSHIP CERTIFICATION

- 01 The roofing contractor shall submit written certification, in approved form, that all materials and workmanship in connection with the roofing system have been installed in complete conformance with the drawings and specifications, and with the manufacturer's specifications and requirements for the particular type of roof called for. This certification must also contain a statement by the manufacturer that the materials furnished by him are without defect.

GUARANTEE

- 01 This Contractor shall provide a written guarantee covering defects in material and workmanship under this contract for period of two (2) years after acceptance of work.
- 02 Completed single ply roof system shall be inspected by manufacturers representative to verify that system has been installed according to specifications and details. The manufacturer shall issue an inspection and service guarantee, without limiting penal sum, assuring that the system shall remain watertight for fifteen (15) years; the insulation shall retain at least 80% of its initial thermal resistance and the insulation system shall meet UL Class "A" requirements.

SECTION 07B

SEALANT WORK

SCOPE OF THE WORK

01 This Section shall provide all materials and labor, services and equipment necessary and incidental to the completion of the installation of sealant material.

02 Work by Others:

- a. By Section 08D-Sealant at Store Front Work.

MATERIALS

01 Sealant: Shall be One-part, non-sag, acrylic latex compound for interior work; Epoxidized Polyurethane Terpolymer for exterior work; self-leveling epoxidized urethane for control and expansion joints in sidewalks and pavements, Tremco, Sonneborn, Polymeric Systems or Dow Corning Sealants. Color as selected by Architect.

02 Back Up Material: AET. Inc. HBR Backer Rod. Williams Products, Inc. Backer Rod or Expand-O-Foam Cord.

03 Standards: ASTM C920 - Use of Elastomeric Joint Sealants. ASTM D 1752-Standard Specification for Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.

MATERIAL LOCATIONS

01 Sealant: Shall be provided at the following locations.

- a. At hollow metal door frames-interior and exterior, both sides.
- b. At control joints-exterior; interior where exposed to view.
- c. At joint between brick and dissimilar materials.
- d. At construction joints at exterior door entry slabs.
- e. Elsewhere as required for weather tight construction.

02 Back Up Materials: Shall be used to control depth of sealant per schedule herein. Use Foam-Cord where joints vary in width.

SUBMITTALS

01 Submit color samples of sealants to be used, together with sealant bond breaker, if applicable, and joint backing. Samples shall be accompanied by Manufacturers Literature and Certification.

DELIVERY, STORAGE, AND HANDLING

01 Deliver materials in manufacturer's original, unopened containers.

02 Store between 40 and 90 degrees F.

DEPTH OF SEALANT SCHEDULE

01 Schedule:

SEALANTS		Joint Width Condition			
		Min. 1/4"	1/4" to 1/2"	1/2" to 1"	1" to 2"
01	Concrete, Masonry & Stone	1/4"	Same as Width	One-Half Width	Max. 1/2"

	Metal, Glass and Non-Porous Materials	1/4"	1/4"	One-Half Width	Max. 1/2"
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- 02 Install joint backing to control joint depth as indicated and to prevent 3-sided bond.

PROJECT CONDITIONS

- 01 Do not apply clear water repellent sealers, waterproofing compounds, or other architectural coatings to surfaces to which sealers will be applied without first verifying compatibility.
- 02 Verify that dimensions are correct and substrate is in proper condition for installation. Do not proceed with installation until unsatisfactory conditions have been corrected.

INSTALLATION

- 01 General: Install sealants in accordance with manufacturer's printed instructions and the requirements of ASTM C 962.
- 02 All surfaces receiving sealant material shall be clean and dry before sealing. See above schedule for allowable depths of sealant related to width of joint.
- 03 Installation of all work shall be when air temperature is above 40 degrees F and below 80 degrees F, unless manufacturer submits written instructions for use of his material beyond this range.
- 04 Mask adjacent finished surfaces and adjacent porous surfaces that would be damaged by primer, sealant, or cleaning agents.
- 05 Prime each joint with primer as recommended by sealant manufacturer for material employed. No bond should occur between backer rods and sealant.
- 06 The sealing compound shall be forced in the opening with a caulking gun having a nozzle not less than 3/8" in diameter so as to fill the opening completely, making a neat, smooth bead. Sealant work shall be done in a neat, professional manner without sags, overlaps or uneven distribution. Clean any overruns from adjacent materials.

SECTION 07F**FIREPROOFING AND FIRESTOPPING**

GENERAL

- 01 This Section shall provide all materials and labor, services and equipment necessary and incidental to the completion of the installation of fireproofing and firestopping.

MATERIALS

- 01 Firestopping: W. R. Grace Flame Safe Fire Stop Line of products, sealants – FS 1900 or FS 900 with non-combustible mineral wool, coating – FS 3000 with non-combustible mineral wool, and putty – FSP 1000..

MATERIAL LOCATION

- 01 Firestopping: Where required at 1 hour barriers.

INSTALLATION

- 01 Firestopping sealant, coating or putty shall be installed per the manufacturers requirements. Non-combustible mineral wool shall be inserted into construction joint under slight compression to receive fire sealant or coating.

DIVISION 08**HARDWARE, DOORS, WINDOWS, AND GLASS**

01 All work under this heading shall meet requirements of Division 1 and Instructions to Bidders and include everything necessary and incidental to completion of items outlined.

02 Work Included, but not limited to:

- a. Finish Hardware.
- b. Metal Doors and Frames.
- c. Glass and Glazing.
- d. Store Front Material.

SECTION 08A**FINISH HARDWARE****SCOPE OF THE WORK**

01 This Finish Hardware Supplier shall furnish all finish hardware required in connection with the work except that which is specifically called for under the other Divisions of the Specifications.

02 Work by Others:

- a. By Section 06B-Hardware for all millwork items.
- b. By Section 08D-Hardware for store front items.

03 Work Furnished to Others for Installation:

- a. To Section 06B- All Finish Hardware except for store front material
- b. To Section 08D- Hardware for all store front items.

PACKING AND DELIVERY

01 All hardware shall be securely packed. Each package shall be clearly identified with an item number and the corresponding set number used in the Door Schedule.

02 The Finish Hardware Supplier shall deliver all hardware to the job site and obtain a receipt from the Carpenter Contractor for all items delivered in each shipment. He shall inform the Carpenter Contractor that all discrepancies between the hardware delivered and the list accompanying same shall be reported immediately and that the Carpenter Contractor shall be responsible for all missing items not reported.

REQUIREMENTS OF REGULATORY AGENCIES

01 All hardware furnished in connection with Doors bearing underwriters labels or where necessary to meet special requirements shall be strictly in accordance with conditions established by governing authority and subject to the approval of that authority.

02 All hardware shall comply with the accessibility guidelines of the Americans with Disabilities Act of 1990, effective January 26, 1992, State of Michigan Barrier-Free Code, Current Edition, IBC, NFPA 101, NFPA 80 and UBE Code - all Current Editions. Provide only hardware that has been tested and listed by UL for types and sizes of doors required and complies with requirements of door and door frame labels.

HARDWARE SUPPLIER

- 01 Shall be an established firm dealing in contract builders' hardware. The firm must have adequate inventory, qualified personnel on staff and be located within 100 miles of the project. The project requires the employment an Architectural Hardware Consultant (AHC).

INSTALLATION

- 01 Locate hardware pieces from finish floor to center line of item per door and frame manufacturers' standard location.
- 02 Install hardware according to manufacturers installations and template dimensions. Attach all items of finish hardware to doors, frames, walls, etc. with fasteners furnished and required by the manufacture of the item.

KEYING

- 01 All cylinders shall match existing Brighton Area Schools (BAS) standard and be master keyed to the (BAS) requirements. A meeting shall be arranged with the Owner to establish a keying system prior to ordering of any locks or cylinders.
- 02 Furnish two (2) change keys per cylinder; 4 master keys per master group

MANUFACTURERS

- 01 Scheduled Manufacturers: The following manufacturers will be used to establish type, grade quality and design and are the basis of the Hardware Sets.
- a. Hinges- Ives
 - b. Locks and Cylinders-Match existing (verify with BAS)
 - c. Door Closers - LCN
 - d. Push & Pulls, etc.- Ives
 - e. Weatherstripping, Sound Seals, Thresholds, Sweeps-National Guard
 - f. Holders, Wall and Floor Stops, Lock protectors - Glynn-Johnson
 - g. Exit Devices-Von Duprin
 - h. Electromagnetic Holders - Rixon
- 02 Acceptable Alternate Manufacturers: In addition to the manufacturers named under Materials, the following and only the following may be used providing their products are of equal type, grade, quality, design and material:
- a. Hinges-Boomer, Hager, Lawrence, Stanley or McKinney
 - b. Locks & Cylinders - none
 - c. Closers - Sargent 350 Series, Norton 7700 Series.
 - d. Wall and Floor Stops, Push and Pulls, etc. – Rockwood, Baldwin
 - e. Weather Stripping, Sound Seals, Thresholds, Sweeps-Reese, Pemko or Hager Accent
 - f. Holders - Rixon or ABH
 - g. Exit Devices – Sargent, Monarch and Yale
 - h. Electromagnetic Holders – Norton, Dorma

MATERIALS

- 01 The materials listed hereunder are the basis of the Hardware Sets. Furnish per description unless otherwise noted.
- 02 Hinges: Furnish size 4 1/2" X 4 1/2", class BB1279 at doors with closers, BB1191 at exterior openings, and class 1279 at all others unless specified otherwise.

- 03 Locksets:
- a. Provide mortise locksets for all exterior doors.
 - 1. Mortise Locks: Schlage L Series. Certified ANSI Series 1000, Grade 1.
 - 1. Mortise Locks: Corbin/Ruswin ML2200 Series. Certified ANSI Series 1000, Grade 1.
 - b. Provide cylindrical locksets or latchsets for all interior doors
 - 1. Cylindrical Locksets: Schlage AL Series. Certified ANSI Series 4000, Grade 1.
 - 1. Cylindrical Locksets: Corbin/Ruswin CL3600 Series for. Certified ANSI Series 4000, Grade 1.
- 04 Lockset Trim:
- a. Lever: Match existing BAS standard.
- 05 Push and Pull Hardware:
- a. Toilet Rooms:
 - 1. Push Plates: Ives 8200 - 3.5" X 15".
 - 2. Pull Plates: Ives 8302-6 3.5" X 15".
 - b. Exterior Doors:
 - 1. Push/Pull: Ives 9190-33
 - 2. Mounting: Type NS
- 06 Closers: LCN
- a. Surface: 4010 and 4110 Series, UNI where scheduled.
 - b. Concealed: 2030 Series.
- 07 Kick Plates:
- a. Ives, 18 gauge, 10" high x door width less 1 1/2" at single doors and less 1" at pairs.
- 08 Overhead Holders and Stops:
- a. Glynn-Johnson: GJ 80 Series, Exterior; 450 Series, Interior.
- 09 Wall and Floor Stops:
- a. Ives: Wall Stops (Bumpers) = WS407CCV, Floor Stops = FS436, Holder WS40.
- 10 Exit Devices: Von Duprin 99 Series OR 88 Series, Trim: Lever Type – 98L
- a. Removable Mullions: Von Duprin 4954.
- 11 Weatherstripping: National Guard 5050B.
- 12 Sweeps: National Guard 600DKB.
- 13 Flush Bolts: Manual or automatic type by any member of BHMA whose product is UL listed. Include dust proof strikes with flat rectangular mounting plates.
- 14 Armor Plates: 48" x 0.050" x door width less 3".
- 15 Thresholds: verify with BAS.
- 16 Electromagnetic Wall Holders: Rixon Model 990 24v AC x 628. Wire to Fire Alarm System or Smoke Sensor. Mount near top of door.

SUBMITTALS

- 01 Hardware Schedules: Submit complete Hardware Schedules in quantities to satisfy needs of the particular project. Schedules shall be distributed through the General Contractor. No hardware shall be issued to the jobsite until the Architect has reviewed and approved the schedule.
- a. Hardware Schedules shall include all items necessary to meet the requirements of the Architect's Hardware sets and bear all necessary identification of the door functions, items per door and be coordinated to the project Door Schedule as to location and number.
 - b. Follow guidelines established in Door & Hardware Institute Handbook (DHI) Sequence and Format for the Hardware Schedule unless noted otherwise.
 - c. Submit product data and manufacturers cut sheets with hardware schedule

FASTENERS

- 01 Furnish fasteners of the proper type, size, quantity and finish as follows:
- a. Machine screws and expansion shields for concrete or masonry.
 - b. Wall grip inserts for hollow wall construction.
 - c. Wood or machine screws for closers.

FINISHES

- 01 Finishes shall be as follows:
- a. Hinges-US26D Satin Chrome (BHMA 626).
 - b. Locksets, Latchsets, etc. - US26D Satin Chrome (BHMA 626).
 - c. Kick Plates, Push, Pulls, Exit Devices - US32D Satin Stainless Steel (BHMA 630).
 - d. Closer - Matching Spray Painted Enamel (Interior), Color anodized aluminum (exterior).

INSTALLATION AND LOCATIONS

- 01 Install hardware according to manufacturers printed instructions and to template dimensions. Refer to Cylinders and Keying regarding replacement of construction cores with final cores.
- a. Attach all items of finish hardware to doors, frames, walls, etc. with fasteners furnished and required by the manufacture of the item.
 - b. Reinforced hollow metal doors and frames and reinforced aluminum door and frames will be drilled and tapped for machine screws.
 - c. Solid wood doors and frames: full thread wood screws. Drill pilot holes before inserting screws.
- 02 Furnish hardware made to template. Supply required templates and hardware locations to the door and frame manufacturers.
- 03 Dimensions are from finish floor to center line of items.
- 04 Include these locations in the Hardware Schedule

CATEGORY	DIMENSION
Hinges	Door Manufacturers Standard
Flush Bolt Levers	72" and 12"
Knobs	Door Manufacturers Standard
Levers	Door Manufacturers Standard
Push-Pull Units	42" C/L Pull portion

Pulls	44" C/L
Push Plates	45" C/L

QUANTITIES

- 01 Furnish one hinge for each 30 inches of door height or fraction thereof.
- 02 Furnish hinges, continuous hinges, exit devices, push and pull hardware, closers, overhead stops, kick plates, armor plates, door edgings, bumpers, stops, bottom seals, weatherstripping, and thresholds for both leaves of pairs unless specified otherwise.

FINAL ADJUSTMENT

- 01 Provide the services of a representative to inspect material furnished and its installation and adjustment, to make final hardware adjustment, and to instruct the Owner's personnel in adjustment, care and maintenance of the hardware.
- 02 Locksets, closers and exit devices shall be inspected by the factory representative and adjusted after installation and after the HVAC system is in operation, to insure correct installation and proper adjustment in operation. The manufacturer's representative shall prepare a written report stating compliance, and also recording locations and kinds of noncompliance. The original report shall be forwarded to the Architect with copies to the Contractor, hardware distributor, hardware installer and building owner.
- 03 At the completion of the project, the technical and warranty information coalesced and kept on file by the General Contractor/Construction Manager shall be given to the Owner or Owner's Agent. In addition to both the technical and warranty information, all factory order acknowledgement numbers supplied to the General Contractor/Construction Manager during the construction period shall be given to the Owner or Owner's Agent. The warranty information and factory order acknowledgement numbers shall serve to both expedite and properly execute any warranty work that may be required on the various hardware items supplied on the project. Minimum warranty period shall be two (2) years.
- 04 Submit to General Contractor/Construction Manager, two copies each of parts and service manuals and two each of any special installation or adjustment tools. Include for locksets, exit devices, door closers and any electrical products

HARDWARE SETS

- 01 See Door Schedule included in the drawings.

SECTION 08B**METAL DOORS AND FRAMES****SCOPE OF WORK**

- 01 The work of this section includes all labor, material, equipment and service required to furnish hollow metal work for the project.
- 02 Material Furnished to Other Trades for Installation:
- a. To Division 06 – Doors and frames in stud walls and block partitions.
- 03 Work by Others:
- a. By Section 08C - Door glazing.
- b. By Section 09A – Field painting of doors and frames.

CODES AND STANDARDS

- 01 Hollow metal doors and frames shall comply with the ANSI/SDI-A250 - Heavy Duty core materials of polyurethane or polystyrene. All labeled doors and frames shall meet the requirements of the Underwriter Laboratories. Nomenclature and fabrication standards shall meet the established standards of the American National Standards Institute as they may apply to the work.

MANUFACTURERS

- 01 All steel doors, frames or partitions as scheduled on Door Schedule and specified herein use identifications as established by Curries - Division of Essex Industries. Alternate accepted Manufacturers meeting stated requirements herein: Amweld, Mesker, Ceco, Steelcraft and Kewanee.

DOOR FRAMES

- 01 Frames shall be 16 gauge, galvanized at all exterior openings. Frames shall be formed with integral stops and rebates. Provide 4" head frames where detailed. Angle spreaders shall be welded to the bottom of jambs to assure safe shipment and perfect alignment in field setting. All frames shall have mitered corners, welded and ground smooth and re-prime painted.
- 02 Frames shall be fabricated to suit wall widths as scheduled and to set on finished floor slab. Angle spreaders shall be removed after completion of adjoining walls.
- 03 A minimum of three anchors shall be provided for each jamb (four for openings over 7'6"). Anchors are to suit the wall conditions. Floor anchor clips shall be welded to each jamb and provided with holes for securing to floor.
- 04 Frames shall be accurately mortised for strike plates and hinges per hardware supplier's templates. Adequate reinforcements shall be provided with steel plates welded to the frame and precisely drilled and tapped to accommodate template hardware. Hinge reinforcement shall be 3/16" plate, minimum. Tape hinge reinforcements to prevent clogging of the tapped holes from mortar. Adequate reinforcements shall be provided for door checks, brackets and other surface applied hardware installed in field.

HOLLOW METAL DOORS

- 01 Doors shall be flush type 707S Series, hairline seamless, constructed of 16 gauge cold rolled steel for exterior doors; 18 gauge for interior doors, core materials of polyurethane or polystyrene. Top and bottom of door shall be reinforced horizontally by steel channels full width, spot welded

to each face at least 3" o.c. Joints at edges of door shall be continuously welded. Doors to be sound and fire insulated with UL approved material. Door tops to be closed. All exterior doors shall be galvanized.

- 02 Hollow metal doors are to be accurately mortised for locks and hinges per hardware manufacturer's templates. Adequate reinforcements shall be provided with steel plates welded to the interior reinforcing channels, and drilled and tapped. Reinforcements shall be provided for door closers and other surface hardware to be field mounted.

ACCESSORY ITEMS

- 01 Provide three rubber bumpers inserted in face of each stop.
- 02 Provide astragal on active leaf of all exterior and fire rated pairs of doors.

HARDWARE

- 01 All door hardware shall be furnished by Section 08A -Finish Hardware and installed by Division 06. See Door and Hardware Schedule for hardware sets.
- 02 All doors and frames shall be fabricated to accommodate hardware as scheduled.

UNDERWRITERS LABELS

- 01 As scheduled in Door Schedule provide Underwriters Label on door and frame. Construction shall meet all requirements of UL.

GLASS AND LOUVER OPENINGS

- 01 Provide manufacturers standard glass stops where glazed openings are indicated. Provide UL approved metal glazing stops for fire rated doors with glass lights.
- 02 Provide manufacturers standard inverted "V" blade louvers where scheduled.

PAINTING

- 01 All doors, frames and partitions shall be thoroughly cleaned of grease, oil and other impurities, filled flush as to completely conceal all seams and welds and given two coats of baked -on rust resisting primer.

SHOP DRAWINGS

- 01 This contractor shall submit shop drawings for Architect's review, drawings shall include all pertinent material such as material gauges, sizes, swing, hardware list, etc.

SECTION 08C**GLASS AND GLAZING****SCOPE OF WORK**

- 01 The work under this section includes everything necessary and incidental to the glass, glazing and mirror installation.
- 02 Work by Others:
- a. By Division 01 - Glass Cleaning
- 03 All work under this heading shall be in conformance with the latest applicable edition of the IBC National Building Code and The Rules as published by the Glazing Contractors Association, Detroit, MI.

MANUFACTURERS

- 01 All glass shall be supplied with identifying tags of one of the following manufacturers, except where specifically stated otherwise.
- | | |
|-------------------|--------------------------------|
| a. Vitro/PPG | d. Viracon/Apog. |
| b. NSG/Pilkington | e. Guardian Glass (Spec. Used) |
| c. AGC/Asahi | |

MATERIALS

- 01 Safety Glass: Tempered or heat strengthened, 1/4" thick, meeting current requirements of ASTM C1048.
- 02 Clear Glass (Interior Glazing): 1/4" clear float glass.
- 03 Clear Glass (Insulated Panels): SN 68 Ultra-Clear glass, 1/4" thick, meeting current requirements of ASTM C1036.
- 05 Low-E Coating: Guardian SunGuard SNX 62/27, applied to #3 surface.
- 06 Insulated Glass Assembly: Exterior lite tinted glass 1/4" thick, with 1/2" air space and 1/4" clear interior lite, meeting current requirements of ASTM C1036. Overall thickness: 1".
- 06 Spandral Glass: Clear tempered float glass, 1/4" thick, to match Low-E glass with Opaci-Coat-300 coating on #2 surface; #3 surface to match reflective glass when used in insulated glass panels.
- 07 Insulated Infill Panels: Mapes Industries, Lincoln, Nebraska, Rabbet Edge Mapes-R+ (8-Ply) Panels.
- | |
|--|
| a. Exterior Skin: 1/4" thick glass at "Spandral Glass Faced" panels; metal on substrate where identified as "Laminated Metal Faced". |
| b. Insulation Core: 2" thick 2.0 lb. density Polystyrene. |
| c. Interior Skin: Aluminum with Kynar Finish. |
| 1. Color: As selected from standard colors. |
- 08 Glazing Compound: Shall be Tremglaze Mastic Glazing Compound as manufactured by Tremco. Acceptable alternate manufacturer: Penco.
- 09 Sealant: Shall be Tremco Mono-Lastomeric.

- 10 Mirrors: Shall be mirror glazing quality, polished plate glass, 1/4" thick, electroplated copper back.
- 11 Fire Rated Glass: Pyrobel 60 distributed by: InterEdge Technologies, 160 North High Street, Hebron, Ohio 43025, 877-376-3343, Fax: 415-289-0326. Glass shall meet requirements of ASTM E119 and UL263 Each light shall bear permanent, non-removable label of Warnock-Hersey certifying it for use in tested and rated fire resistive assemblies.
- a. Glazing tape, sealant and setting blocks employed with fire rated glazing shall meet manufacturer's specifications for glazing materials.

INSULATING GLASS ASSEMBLY

- 01 Insulating glass shall meet requirements of tests in accordance with ASTM E 2190 method.
- 02 Tinted Insulating Glass "A": Thompson/Guardian – 1" Bronze tinted loe-E insulated glass. 1" thick with two lights 1/4" thick and 1/2" air space. Exterior light shall be Low-E Glass; interior light shall be clear glass. Visible light transmittance: 41%; Solar Heat Gain Coefficient .31; "U" value .292 Provide safety glass where required by current construction codes.
- 05 Spandrel Insulating Glass: Shall be 1" thick with two lights 1/4" thick and 1/2" air space. Exterior light shall be reflective glass; interior light shall be spandrel glass. Provide safety glass where required by current construction codes.

MATERIAL LOCATION

- 01 Safety Glass: Shall be furnished in all locations required by construction codes.
- 02 Clear Glass (Interior Glazing): sidelites and integral lites as indicated on drawings.
- 03 Clear Glass (Insulated Panels): Generally for interior light of insulation glass.
- 04 Spandrel Glass: as indicated on BECC exterior window elevations.
- 05 Insulated Infill Panels: as indicated on BECC exterior window elevations.
- 06 Insulating Glass: Typical all new exterior windows for BECC Building.
- 07 Fire Rated Glass: as indicated on drawings.

INSTALLATION

- 01 Glazing installation shall be performed in accordance with the standards of the Flat Glass, Jobbers Association Glazing Manual, latest edition, unless specifically excepted in the specifications or details.
- 02 Installation of glass shall be in strict accordance with recommendations of the glass manufacturer as required for his warranty.

MIRRORS

- 01 Mirrors in toilets shall be installed with stainless steel frames and theft-proof fastenings.

- Mounting height to bottom of toilet room mirrors shall be 38" maximum to viewable mirror.

BREAKAGE

- 01 At completion of the work, replace all glass under this contract, which is broken or cracked due to improper setting.

GUARANTEE

- 01 This contractor shall guarantee that all work executed under this heading will be sound and waterproof, free from defects in materials and workmanship for a period of one (1) year from date of final acceptance.

SECTION 08D**STORE FRONT CONSTRUCTION****SCOPE OF WORK**

- 01 The work under this heading shall meet requirements of Division 01 and Instructions to bidders and include everything necessary and incidental to completion of the installation of aluminum sash, doors and frames in storefront construction system.
- 02 Drawings and specifications are based upon the following Kawneer Systems
- a. Entrances and Sidelights: Trifab VG 451T, Center Pane Glazed
 - b. Window Sash: [Trifab VG 451T, Center Pane Glazed](#)
 - c. Curtain Wall: Trifab 601 Series.
 - e. Acceptable alternate manufacturers: PPG, U.S. Aluminum, Tubelite, Efco.
- 03 Work by Others:
- a. By Section 08A – Cylinders furnished for installation by this contractor where scheduled.
 - a. By Section 08A – All Finished Hardware and Cylinders furnished for installation by this contractor where scheduled.

MATERIALS

- 01 Material: Extrusions shall be AA-6063-T5 alloy and temper (ASTM B221 alloy G.S. 10A-T5) Fasteners where exposed shall be aluminum, stainless steel or zinc plated steel in accordance with ASTM A 164. Perimeter anchors shall be aluminum or steel, providing steel is properly isolated from the aluminum. Exposed sheet to receive an anodic finish shall be 5005 alloy to match extrusions, .063" thick.
- a. Finish: All exposed surfaces shall be free of scratches and other serious blemishes.
 - 1. Anodized Finish: clear.
- 02 Swing Entrances: Not used.
- 03 Storefront Framing: Heads, sills and jambs shall be 1 3/4" x 4 1/2" section, for 1" glazing.
- 04 Weatherstripping: Shall be standard in frame stops at jambs and transom bar, and sweep weatherstrip on bottom rail.
- 05 Hardware: All finish hardware shall be furnished by this Section.
- a. Exit Device: Exterior Only - Von-Duprin Series 33 or 33EL rim panic (US32D finish)
 - a. Dead Bolt: Adams Rite Deadlock Series MS 1850A.
 - a. Dead Latch: Adams Rite 4510 dead latch with 4568 lever
 - b. Closer: Kawneer SAM-II, concealed closers mounted in frame.
 - c. Pivots: Top and Bottom off set pivots.
 - d. Push & Pull: Push = CP II (US32D finish) / Pull = CO-9 (US32D finish)
 - e. Threshold: Exterior only - Model 325 – 1/2" high x 5" wide at ceramic tile; Model 425 - 1/2" high x 5" wide at all other locations.
 - f. Weatherstripping: Exterior doors only - standard with bottom sweep strip.
 - g. Cylinders: All exterior doors shall be prepared for cylinders by Section 08A.
- 05 Hardware: All finish hardware shall be furnished by this Section.

- a. Doors: no storefront aluminum doors are part of these projects.
 - b. Windows: operable window panel hinges & latching required.
- 06 Sealant: Tremco Butyl Sealant, Dow Corning Silicone Rubber Sealant.
- 11 Insulated Panels: Shall be 1 ½” rigid insulation with laminated aluminum embossed sheet metal face sheet to match flush doors. Panels shall provide formed edges to permit attachment to concealed clips on aluminum framing.
13. Fire Rated Window/Wall Framing: Shall be as manufactured by Aluflam North America Contact: 15551 Industry Lane, Huntington Beach, CA 92649: Telephone 714.899.3990 Fax 714.899.3993 E-mail info@aluflam-usa.com Website www.aluflam-usa.com, or local representative (www.aluflam-usa.com/contact/representatives.php). Assembly shall meet all test and performance requirements outlined in manufacturers standard specifications.
- a. Frame construction: Integral structure and glazing stops from extruded and thermally broken aluminum profiles. Filled internally with cement composite material.
 - b. Dimensions:
 1. Perimeter framing face dimension: 2-½ inch
 2. Depth of framing: 3-7/16 inch
 3. Cross rail (if applicable): 3-9/16 inch
 - c. Assembly: Frame corners assembled by means of crimped and bonded miter joints.
 - d. Sealing: Framing system shall insulate against effects of fire, smoke, and heat transfer from either side. Perimeter of the framing system to the rough opening shall be firmly packed with mineral wool insulation.
 - e. Glazing: Assemblies shall be glazed with 60 minute rated 1 inch thick SGG Contraflam 60-N2] fire resistant glazing material as manufactured by Vetrotech Saint-Gobain (www.vetrotechusa.com).
 1. Individual lites shall be permanently identified with a listing mark.
 2. Glazing material installed in “Hazardous Locations” (subject to human impact) shall be certified to meet the applicable requirements for fire rated assemblies referenced in ANSI Z97.1 Standard for Safety Glazing Materials Used In Buildings and/or CPSC 16 CFR 1201 Safety Standard for Architectural Glazing Materials.
Visible daylight transmission shall be a minimum of 81%. Glazing material shall be optically clear, colorless and free from unusual distortion
 3. Fire-rated glazing shall be insulated with ¼” airgap and ¼” low-E coated outboard glass lite. Installation conditions shall be analyzed to assure that fire-rated glazing is not exposed to temperatures outside the 10 – 110 degrees F limits.
 - f. Fabrication: Window frames shall be furnished pre-assembled. Window assemblies shall be field glazed. Fabricate to approved dimensions. The general contractor shall guarantee dimensions within required tolerance (+ - 1/8”). Obtain approved shop drawings prior to fabrication.
 - g. Finish: Shall be clear anodized aluminum.
 - h. Alternate Manufacturer: SAFTI *FIRST*, SuperLite II-XL 120 IGU in SAFTIfire CW Framing.

MATERIAL LOCATIONS

- 01 Swing Entrances: Not used.
- 02 Storefront Framing: Exterior windows throughout BECC Building exterior.
- 03 Insulated Panels: At spandrel glass in curtain walls as indicated on drawings.

INSTALLATION

- 01 All shop construction shall conform to manufacturer's standard specification. Field erection shall provide accurately fitted and securely joined joints; and shall be set level, square and plumb and in alignment with other work. All aluminum members shall be properly isolated from ferrous materials with Kraft paper or Red Chromate paint; provide expansion room for all members subject to temperature differentials; and take all precautions to seal against water penetration from exterior.
- 02 At doors install all scheduled hardware and make all final adjustments to attain normal operation of doors and hardware.
- 03 Provide 11 gauge break material where required for fillers, corners and special conditions. Employ concealed connections wherever possible in securing break material. Fill voids in break material conditions with fiberglass batt insulation.
- 04 At curtain wall construction provide all necessary hardware connections to structural steel frame. Connections shall be designed, detailed and engineered by this contractor. Provide slotted connections as necessary for alignment in the field.
- 05 All work shall be installed by experienced workmen in accordance with Manufacturer's instructions and shop drawings.
- 06 Sealant: Provide sealant at the perimeter of aluminum frames as indicated on the drawings and as required to make installation waterproof. Caulking shall be done in a neat and professional manner without sags, overlaps or uneven distribution.
- 07 Cleaning and Protection: After installation all metal surfaces shall be cleaned. All work shall be protected against damage by other trades. General Contractor is responsible for final cleaning.

SHOP DRAWINGS

- 01 This contractor shall submit shop drawings for Architect's review. Drawings shall include all pertinent information including necessary field dimensions. Do not fabricate prior to Architect's review of drawings.
- 02 Provide engineered drawings of curtain wall connections to structural steel frame to Architects consulting structural engineer for review.

GUARANTEE

- 01 This contractor shall guarantee that all work executed under this heading will be sound and waterproof, free from defects of materials and workmanship for a period of one (1) year from date of final acceptance for all work.

DIVISION 09**FINISHES**

- 01 All work under this heading shall meet requirements of Division I and Instructions to Bidders and include everything necessary and incidental to completion of interior finishes as outlined.
- 02 Work Included:
- a. Section 09A - Painting and Decorating
 - b. Section 09B - Floor Covering
 - c. Section 09C - Gypsum Drywall
 - d. Section 09D – Acoustical Treatment
 - e. Section 09E – Tile Work

SECTION 09A**PAINTING AND DECORATING****SCOPE OF THE WORK**

- 01 This section includes everything necessary and incidental to the painting and decorating work. All exterior surfaces and interior surfaces in finished areas requiring painting and finishing, for protection or appearance, shall be furnished by this Section.
- 02 The following work requires no finish by this section of the Specifications:
- a. Acoustic tile.
 - b. Laminated plastic millwork and/or door veneers.
 - c. Non-ferrous metals, including aluminum store front material and sash; mechanical equipment..
 - d. Roofing and siding sheet metal work.

MATERIALS

- 01 Paints, varnishes, enamels, primers, stains, etc., specified herein shall be first line quality of each manufacturer. No substitution from this approved list shall be permitted without the written approval of the Architect.
- a. Primers, fillers, paints and enamels: Glidden, Benjamin Moore, Pratt & Lambert, O'Leary.
 - b. Exterior Stains and Paints: Pratt and Lambert, Glidden.
 - c. Interior Stains and Varnish: Pratt and Lambert, Glidden, Benjamin Moore, O'Leary.
 - d. Epoxy Paint: Glidden "Glid-Tile Epoxide", Pittsburgh "Pitt-Glaze" or Benjamin Moore Epoxy.
 - e. Galvanized Metal Primer: Zinser "Bulls Eye 1-2-3" Water-base Primer-Sealer.
 - g. Block Coating: Sonneborn "Hydrocide Super Color Coat" or Tnemec - "Tneme-Crete".
 - h. Block Sealer: Chemprobe " Phylon 1422", Hydroplex 109, Benjamin Moore M88 00 or Professional Water Sealant.
 - i. Ferrous Metal Dryfall: PPG Speedhide Super Tech WB Interior 100% Acrylic Dry Fog Latex 6-727XI
 - j. Water Repellant: Advanced Coatings, Inc. KL-17.

02 Volatile Organic Content of all finishing materials on the project shall not exceed the following limits:

	VOC limit (gram/litre)	
	Flat	Non-Flat
Interior Paint/Stain	50	150
Exterior Paint/Stain	100	200
Anti-Corrosive	250	

PAINTING & FINISHING LOCATIONS

01 Refer to Interior Design and Finishes drawing sheets, Finish Schedule, and Door Schedule as they apply to painting and finishing.

02 Exterior Painting and Finishing:

a. None

03 Interior Painting and Finishing:

- a. Hollow Metal Doors & Frames.
- b. Gypsum Board Walls, Soffits, & Ceilings.
- c. Wood Doors.
- d. Misc mechanical items (pipe & radiator covers, access panels, exposed ducting as noted, supply/return grilles, etc.)

COLORS AND SAMPLES

01 All colors shall be as indicated on Interior Design drawing sheets. Inform Architect of any missing selections or required clarifications.

02 This Contractor shall submit complete selection of colors of paint manufacturer proposed. Samples shall be of ample size to enable accurate evaluation of final appearance.

03 Finished work shall match approved samples in all cases.

INSTALLATION

01 No painting shall be done on damp surfaces; and the areas in which this Contractor is to work shall be broom clean, before work is started.

02 Application of first coat of paint or other material by this Contractor indicates his acceptance of the surface as proper to receive his work.

03 This Contractor shall provide drop clothes and coverings as necessary to protect the work he does and the work of all the other trades at all times. He shall make good any damage done to other work in the execution of his contract. Spray painting will not be permitted unless every precaution is taken to protect all adjacent unpainted surfaces from over-spray. Mask all adjacent surfaces where necessary to adequately protect other work.

04 Remove all electric plates, surface hardware, etc., before painting. Loosen canopies of fixtures in contact with painted surfaces. Replace after completion of work. Mask all switches and receptacles.

05 All materials shall be applied by skilled mechanics. Work shall be neat and true in every respect, without runs or sags. All stained work shall be properly cleaned and sanded smooth before

commencing finish work. Putty up all nail holes and other depressions of a minor nature. Putty shall match wood where natural finishes occur. Fill all minor cracks and finish smooth before painting. Runs and sags appearing in finish work shall be sanded smooth and entire surface refinished.

- 06 Where existing work is scheduled to be refinished do all necessary preparation work, sand surfaces, and make all effort to provide completed finish to match new work as far as practicable.
- 07 A coat of paint or varnish shall be defined as a minimum of 2 mils, dry thickness.
- 08 Each coat of paint shall be allowed a minimum of 12 hours drying time before being re-coated.
- 09 Method of application of paint shall be as scheduled.

PAINTING SCHEDULE

01 **EXTERIOR WORK**

- a. None

02 **INTERIOR WORK**

- a. Gypsum Board where scheduled for paint (Spray or Roll)

1. 1 coat (Latex) primer sealer, tinted
2. 2 coats eggshell enamel.
3. 1-1/2 to 2 mils per coat.

- b. Ferrous Metal (Brush)

1. Sand rust spots and touch-up, primer.
2. 1 coat Alkyd primer, tinted
3. 1 coat Alkyd eggshell enamel.

- d. Wood Natural Finish (Brush) Wood Trim and Doors

1. Sand, wipe.
2. 1 coat P & L Tonic Stain, sand lightly.
3. 1 coat P & L Polyurethane varnish, satin, sand lightly.
4. 1 coat P & L Polyurethane varnish, satin, Steel Wool.

- e. Block and Gypsum Board where scheduled for multi-color (Spray)

1. Basecoat per specification (this section).
2. Sand.
3. 2 coats multi-color finish per specification (this section).

- f. Block (Roll)

1. 1 coat block filler-apply with stiff brush, fill all pores and voids, roll out all brush marks.
2. 1 coat epoxy paint semi-gloss-minimum thickness: 5 mils dry.

- g. Ferrous Metal Dryfall (Spray)

1. Sand rust spots and touch-up, primer.
2. 1 coat Semi-Gloss Primer and Finish.

GUARANTEE

- 01 This Contractor shall guarantee his work for a period of one (1) year from date of final acceptance against defects due to faulty workmanship or material.

SECTION 09B**FLOOR COVERING****SCOPE OF WORK**

- 01 This Section shall provide all labor and material, services and equipment necessary and incidental for installation of floor coverings and related items.
- 02 Floor materials furnished under this Section shall meet all applicable requirements of ASTM, NFPA, ISO, NSF/ANSI as they may relate to the project..

MATERIALS

- 01 **FLOOR TILE SCHEDULE**
Refer to Interior Design drawing sheets for more information.
- 02 **CARPET SCHEDULE**
Refer to Interior Design drawing sheets for more information.
- 03 **BASE SCHEDULE**
Refer to Interior Design drawing sheets for more information.
- 04 Adhesives, leveling and patching compounds shall be as recommended by Manufacturer for particular floor coverings employed.
- Volatile Organic Content of all adhesive materials on the project shall not exceed 50 grams per litre.

MATERIAL LOCATION

- 01 Refer to Interior Design drawing sheets for more information.

DELIVERY, STORAGE AND HANDLING

- 01 Shall be in accordance with the product manufacturer's stated conditions for product being used.

INSTALLATION

- 01 Room temperature during installation shall be 70 degrees F. Follow manufacturers recommendations on installation throughout. Proceed with installation only when proper moisture content of concrete floor slab is achieved for type of material being applied.
- 02 Composition Tile:
- a. This Contractor shall inspect the cement finish and concrete floors for any defects in same. Notify Architect of any defects existing in sub-floors. Starting of work shall imply acceptance by this Contractor of the surface to which tile is being laid. Fill in all cracks in concrete sub-floors.
 - b. Lay the resilient floor so as to be true, level and even with tight joints, and in accordance with manufacturer's instructions. Fit border tightly to door jambs and fit to and around all permanent fixtures, piping, etc.
 - c. At resilient tile terminations where tile edge is exposed, provide Mercer vinyl Tile Reducer, color as selected by Architect.

04 Carpet:

- a. Carpet installation shall generally be installed by direct glue method with self-releasing adhesive.
- b. Manufacturer's detailed installation instructions shall be strictly followed. Installation shall be under direction of manufacturer's trained personnel and meet their approval.
- c. At all doorways and carpet terminations at hard surfaced floor materials provide Burke-Mercer carpet reducer strip, color as selected by Architect.
- d. Provide all necessary protection for completed installation and turn carpeting over to Owner in perfect condition, free from stain and damage from other trades.

05 Vinyl Base:

- a. Provide and install vinyl base where indicated on the Drawings. Base is generally required at carpet (except at brick walls) and resilient tile and at Millwork. Neatly fit all base to walls; interior and exterior corners and insert returns at hollow metal door frames into joint between frame and wall.

06 Sheet Flooring:

- a. This Contractor shall inspect the cement finish and concrete floors for any defects in same. Notify Architect of any defects existing in sub-floors. Starting of work shall imply acceptance by this Contractor of the surface to which tile is being laid. Fill in all cracks in concrete sub-floors.
- b. Lay the sheets employing maximum possible lengths and minimum joints tightly made in accordance with manufacturer's instructions. Fit material tightly to door jambs and fit to and around all permanent fixtures, piping, etc.
- c. At sheet terminations where edge is exposed provide vinyl Reducer, color as selected by Architect.

07 Rubber Tile:

- a. Provide and install rubber tile, treads, risers, and base where indicated on drawings.
- b. Manufacturer's detailed installation instructions shall be strictly followed.

CLEANING, WAXING, POLISHING

01 At completion of all other work, thoroughly clean all resilient tiles and sheet goods installed under this contract.

- a. All resilient tile or sheet goods shall receive a complete application of waxing and polishing in strict accordance with the recommendations of the manufacturer of the flooring material.
- b. This contractor shall present the Owner, or the Owners maintenance personnel, with instructions on the correct maintenance procedures to be followed in future use of the flooring.

02 Clean all adhesive from carpet with "Disolve" solution and leave in perfect condition, cleaned and vacuumed for Owner's acceptance.

03 Provide heavy paper protection against any subsequent traffic prior to Owner accepting building.

REPLACEMENT MATERIAL

01 At completion of project, deliver to Owner:

- a. One case of floor tile for each color used in quantities exceeding 5,000 square feet and proportionately lesser amounts for smaller usages.
- b. Usable carpet scraps and overage.
- c. One box of each major field color of carpet tile

GUARANTEE

01 This contractor shall guarantee all materials and workmanship under this heading to be free from defect for a one (1) year period from date of acceptance.

SECTION 09C**GYPSUM DRYWALL****SCOPE OF WORK**

- 01 The work under this Section shall provide all materials, labor, protections and appliances necessary to furnish, deliver, and install gypsum board panels. Gypsum panels are identified as "Gyp. Bd." on drawings.
- 02 Work Included:
- a. Interior partitions, exterior wall interior finish, ceilings, and ceiling drops.
- 02 Work by Others:
- a. By Section 05H – Exterior metal studs and framing, furring, and sill sealers.

MATERIALS

- 01 All gypsum board materials described herein are as manufactured by United States Gypsum Company and shall be installed in accordance with its printed instructions.
- a. Accepted Alternate Manufacturers: National Gypsum Co., Continental Building Products, Framing: U.S. Steel Super C Steel Framing, Wheeling Steel Framing, CECO, Dale/Incor.
- 02 Gypsum Panels:
- a. Face Boards: Shall be 5/8" tapered edge Sheetrock SW, 48" wide in lengths as long as practical to minimize the number of joints; 5/8" Sheetrock Firecode (ASTM C36/C36M, Type "X") where required for fire rated construction. W/R Regular Gypsum Panels where required for water-resistant construction, Securock Glass-Mat Gypsum Sheathing for exterior usage.
- 03 Metal Framing:
- a. Interior:
1. Studs - ST, sizes as indicated on drawings, gauges: 3-5/8" up to 9'-0" high - 25 gauge; 3-5/8" 9'-0" to 16'-0" - 20 gauge; 3-5/8" over 16'-0" – 18 gauge. 6" any height - 20 ga., 8" any height - 18 ga., Furring shall be 25 gauge.
 2. Runners - CR25 - sizes as indicated on drawings.
 3. Steel Framing: Unimast SJ members for load-bearing wall applications.
 4. Furring Channels – Z-furring channels, 1½" deep; hat channels 7/8".
 5. Flexible framing – 20 ga. hot dipped galvanized steel ASTM A653 Structural Grade 33, : as manufactured by Flex-Ability-Concepts. (www.flexc.com)
 - a. Flexible Tracks: Flex-C Trac, width as required, and Flex-C Angle, with slideable strap
 - b. Flexible Arch: Flex-C Arch, width as required..
 6. Shaft wall studs – CH type, 20 ga.
- 04 Joint System: U.S. Gypsum Sheetrock Paper joint tape system with USG Sheetrock Lightweight All Purpose Joint Compound with dust control. St. Gobain Fibafuse Max paperless mesh joint system at areas of moisture.
- 05 Fasteners: Per Selector Guide for USG Screws - for conditions of use.
- 06 Accessories:
- a. Corner Bead - USG No. 104 Dur-A-Bead.

- b. Casing Bead - USG No. 200A or 200B Type metal trim; Paper faced B9. J-Stop not acceptable
 - c. Control Joint - USG No. 093.
- 07 Adhesive: USG Durabond 200 or 300 adhesive. Volatile Organic Content of adhesives for gypsum boards shall not exceed 50 grams per litre. Preferred alternate meeting panel manufacturers approval: OSI GreenSeries construction adhesive meeting ASTM E72 and C557. V.O.C. content < 2 g/L (1% by weight).
- 08 Caulking: USG Sheetrock Acoustical Sealant.
- 09 Ceiling Suspension: USG Drywall Suspension System.
- a. Gypsum Panels: ASTM C36/C36M, 5/8" thickness for flat ceilings, laminated lesser thicknesses to accommodate curved and dome conditions.
- 10 Furring Channels: 25 gauge corrosion resistant, roll-formed, hat shaped sections, 7/8" x 2 9/16".

MATERIAL LOCATIONS

- 01 Gypsum Panel System: Generally for interior partition walls.
- 02 Gypsum Panels on Furring: . Generally for interior partition walls.
- 03 Metal Framing: Generally for interior partitions and ceiling drops.
- 04 Access Panels: As indicated on drawings
- 05 Ceiling Suspension: Generally for suspended ceilings, ceiling drops, curved or domed ceilings.
- 06 Furring Channels: Generally for interior partition walls.
- 07 Caulking: Provide at both sides of interior partitioning steel runner prior to gypsum board installation.

INSTALLATION

- 01 General:
- a. This Contractor shall inspect all walls, grounds, surfaces, hangers, electrical boxes, heating outlets, etc., by other trades and assure himself that all are true and secure. Defective work shall be reported and corrected before proceeding with the work. No work of other trades shall be covered until installations are complete, tests and inspections made, and approval given.
 - b. The temperature of the area where the gypsum panels are being applied shall be maintained between 45 degrees and 70 degrees and adequate ventilation shall be provided to eliminate excessive moisture.
 - c. Material shall be applied by skilled mechanics, properly trained and experienced in the application of the board and joint treatment.
 - d. System shall generally consist of 5/8" gypsum panels suspended or applied over steel framing. Drywall shall be applied with manufacturer's approved screws, and joints treated with tape and joint compound.

02 Walls:

- a. Before applying gypsum board provide sealant at steel runner; install metal casing bead at termination of work, specifically where drywall abuts masonry, door frames etc. Use maximum lengths of material available to avoid joints.
- b. Apply gypsum panels perpendicular to studs or furring. Position all ends over studs. Use maximum practical length to minimize joints. Fit ends and edges closely, but not forced together. Install panels with USG screw application method. Secure panel at top and bottom.
- c. Corner beads shall be applied to all external corners of the boards. Beads shall be set plumb and in the plane of the board. Corner beads shall be straight and true, without bends, butt joints or crimps.
- d. Provide control joints at all construction changes in the plane of the panels, and for partition or ceiling runs exceeding 30 feet.
- e. Where structural deflection is a consideration provide slip or slotted track detail suitable to accommodate the anticipated deflection. Detail shall be as standard with the manufacturer of the studs

03 Ceilings:

- a. Install in accordance with ASTM C636, CISCA installation standards and other applicable codes. Install in accordance with manufacturer's current printed recommendations.
- b. Flat Ceilings: Main tees shall be spaced a maximum of 48" on center and supported by 12ga. hanger wires spaced a maximum of 48" on center and as specified by UL Fire Resistance Directory attaching hanger wires directly to structure above. Cross tees shall be spaced per manufacturer's recommendations. At any ceiling openings interrupting the grillage, provide additional cross reinforcing. Apply gypsum panels of maximum practical length with long dimension perpendicular to furring channels. Position end joints over channel web and stagger in adjacent rows. Fit ends and edges of panels closely, but not forced together. Fasten panels to furring with 1" Type S screws spaced 12" o.c. in field of panels and along abutting ends and edges.
- c. Install control joints where indicated on Reflected Ceiling Plan.

04 Ceiling Drops:

- a. Install miscellaneous ceiling drops at upper cabinets, movable partitions, lighting drops, etc. where shown throughout. Construction shall be consistent with ceiling construction standards.
- b. Provide structural headers and vertical supports where indicated at large openings.
- c. Install control joints where indicated on Reflected Ceiling Plan.
- d. Provide stop beads and corner beads required to complete the drop details.

05 Joint System:

- a. Using a suitable tool or machine, a thin uniform layer of joint compound approximately 3" wide shall be applied over the joint to be reinforced. The tape shall be centered over the

joint and seated into the compound, leaving sufficient compound under the tape to provide proper bond. Excess compound shall be cleaned from the surface of the board.

- b. The tape shall be covered with topping spread evenly over and slightly beyond the tapered edge area of the board and feathered at the edges. After the previous coat is dry, it shall be covered with a second coat of topping with a smooth uniform slight crown over the joint and the edge feathered slightly beyond the preceding coat. All dimples at nail heads shall receive three coats of joint compound.
- e. Flanges of all corner beads and casing beads shall receive at least two coats of joint compound. When completed, the compound shall extend approximately 8" to 10" on either side of the exposed nosing. Columns and ceiling drops, less than 20" wide shall have full bed of compound between beads.
- f. All coats in finished ceiling areas shall be sanded as necessary after each application of joint compound has dried. The final coat and subsequent sanding shall leave gypsum wallboard and treated areas uniformly smooth and ready to receive paint finish.
- g. All panels in concealed ceiling areas shall be "fire taped" only to seal off attic space.

CLEANING

- 01 Upon completion of work, remove all debris resulting from the work and leave areas in neat condition for subsequent trades.

PROTECTION

- 01 Protect all wood, glass, aluminum and other finished work during the progress of work and make good any damages done to such work.

GUARANTEE

- 01 This Contractor shall guarantee all materials and workmanship under this heading for a one (1) year period from the date of acceptance. The guarantee shall include repainting of areas damaged due to defects under this heading

SECTION 09D**ACOUSTICAL TREATMENT****SCOPE OF WORK**

- 01 The work under this heading shall provide all materials, labor, services, equipment, necessary for and incidental to the installation and furnishing of acoustical tile and related suspension systems as called for on the drawings and specified herein.
- 02 Construction conditions shall comply with Standard Specification for Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings - ASTM C635/C635M and Recommended Practice for Installation of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings - ASTM C636/C636M.
- 03 Systems shall be rated for Noise Reduction Coefficient in accordance with ASTM C423 and Sound Transmission Coefficient in accordance with AMA 1-II as tested by an independent agency.

MATERIALS

- 01 Acoustical tile specified herein is as manufactured by USG Interiors, Inc. All tile shall be Class A.
- 02 Tile Schedule:
Refer to Interior Design drawing sheets for more information.
- 03 Approved Alternate Manufactures: none
- 04 Suspension System: Refer to Interior Design drawing sheets for more information.
All Suspension system parts shall be of sufficient strength and rigidity to carry acoustical units in a true and level plane without exceeding a deflection of 1/360th of its span.
- 05 Suspension System Schedule:
- 06 Acceptable Alternate Manufacturer: none.

MATERIAL LOCATIONS

- 01 See Finish Schedule on Interior Design drawing sheets for more information.

INSTALLATION

- 01 All acoustical tile and panels shall be installed in strict accordance with the manufacturers recommendations by experienced, skilled mechanics. Cutting and edging of all boarder tiles shall be done in a precise and accurate manner to match field tiles. Framing and installation of suspension systems shall be in accordance with ASTM C635 and C636 respectively as applied to Metal Ceiling Suspension Systems for Acoustic Tile and Lay-in Panels.
- 02 All lighting fixtures are installed by Division 16. Ceiling diffusers are installed by Division 15.
- 03 At exposed grid system provide Main Tees supported by No. 12 ga. wire at 4' - 0" o.c. for tees not bearing light fixtures. Provide additional hangers at each corner of light fixtures for support. Provide wall angles at all walls to match exposed grid and as detailed. Water or laser level for uniform ceiling height. All members shall be surely interlocked for good stability and shall be plumb and in true alignment throughout the combined lengths. Use maximum available lengths of material wherever possible. Miter all corners in wall angles. Acoustical panels shall lay flat and true in grid. All panels shall securely fit into the suspension system.

- 04 Entire installation shall be coordinated as necessary with Mechanical and Electrical Trades. This contractor's layout in accordance with Electrical Plan will establish dimensions for all affected trades. See Reflected Ceiling Plans for location and details of all ceiling work.
- 05 Immediately remove any foreign substances from exposed grid members. Touch up any minor scratches or blemishes with paint type and application to match. Replace any grid members showing crimps or major blemishes and leave installation in acceptable condition.

REPLACEMENT MATERIAL

- 01 At completion of installation provide to Owner one (1) unopened box of each type of acoustic tile used on the project.

GUARANTEE

- 01 This Contractor shall guarantee that all work executed under this heading will be free from defects of material and workmanship for a period on one (1) year after date of acceptance.

SECTION 09E**TILE WORK****SCOPE OF WORK**

- 01 This Section shall provide everything necessary and incidental for the installation of tile work as scheduled on drawings - Ceramic Tile and Quarry tile.
- 02 The Handbook for Ceramic Tile installation of the Tile Council of America shall describe the work insofar as any portion shall affect the work and are made a part of this Specification, except as specifically modified herein.
- 03 Marble shall be installed in accordance with the Marble Institute of America.
- 04 Installation References:
- a. ANSI A108.1B - Installation of Ceramic Tile on cured Portland Cement setting bed with Dry-Set or Latex-Portland Cement Mortar.
 - b. ANSI A108.5 - Installation of Ceramic Tile with Dry-Set Portland Cement Mortar or Latex-Portland Cement Mortar.
- 05 Volatile Organic Content of all ceramic tile adhesives on the project shall not exceed 65 grams per litre.
- 06 DCOF shall be determined by the DCOF AcuTest.

MATERIALS

- 01 **FLOOR TILE SCHEDULE**
Refer to Interior Design drawing sheets for more information.
- 02 **BASE SCHEDULE**
Refer to Interior Design drawing sheets for more information.
- 03 **WALL TILE SCHEDULE**
Refer to Interior Design drawing sheets for more information.
- 04 Ceramic Tile: Shall meet ANSI A137.1 requirements.
- 05 Water: Shall be as used for drinking purposes.
- 06 Sand: ASTM C-144.
- 07 Portland Cement: ASTM C-150 Type I.
- 08 Lime: ASTM C-206 and 207 Types.
- 09 Latex-Portland Cement Mortar: ANSI A118.4.
- 10 Grout: ANSI A118.6, color as selected by Architect.
- 11 Wire Mesh: ASTM A185/A185M 2 x 2 x 16 ga.
- 12 Divider Strip: Tile contractor to provide and install Schuler Systems Schiene Strip at joint of tile and carpet tiles. Divider shall be attached to floor slab. Provide depth to suit tile thickness.
- 13 Membrane: Noble Company "Chloraloy 240". ASNI A118.10

- 14 Bridging Membrane: ECB Membrane, sheet applied, self bonding elastomeric membrane as manufactured by N.A.C. Products, Inc. ASNI A118.12
- 15 Wall Trim: Great Lakes Tile Product #GLM-RESS120 stainless steel round edge and corner, ½”.

MATERIAL LOCATION

- 01 See Interior Finish Schedule on Interior Design drawing sheets for more information.
- 02 Wire Mesh: In mortar beds of tile throughout.
- 03 Membrane: Not used.
- 04 Bridging Membrane: Wherever construction joints or shrinkage cracks occur in the concrete sub floor for tile work.

SAMPLES

- 01 Samples of tile and grout shall be submitted to the Architect for approval and selection.

DELIVERY, STORAGE AND HANDLING

- 01 Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Prevent damage or contamination to materials by water, freezing, foreign matter or other causes.
- 02 If frozen, do not stir until material has completely thawed. Deliver and store materials on site at least 24 hours before work begins.
- 03 Provide heated and dry storage facilities on site.

INSTALLATION

- 01 Floors: TCNA Handbook most recent Design No. F111 OR F113 applied over concrete slabs on grade;
- 02 Walls: TCNA Handbook Design No. W244 applied over moisture resistant gypsum board in toilet rooms; No. W202 applied over masonry.
- 03 Job Conditions:
- a. Maintain environmental conditions and protect work during and after installation to comply with referenced standards and manufacturer's printed recommendations.
 - b. Vent temporary heaters to exterior to prevent damage to tile work from carbon dioxide build-up.
 - c. Maintain temperatures at not less than 50 degrees F (10 degrees C) in tiled areas during installation and for 7 days after completion, unless higher temperatures are required by referenced installation standards or manufacturer's written instructions.
- 04 Examination: Examine surfaces to receive tile work and conditions under which tile will be installed. Do not proceed with tile work until surfaces and conditions comply with requirements indicated in referenced tile installation standard and manufacturer's instructions.

05 General:

- a. All work shall be done by experienced craftsmen familiar with the type of installation scheduled
- b. All tiles shall be firmly secured in place. Joints shall be well filled and lines shall be kept straight and true, and all finished surfaces brought to true level planes. The complete work shall be free from cracked or broken tiles.
- c. All intersections and returns shall be accurately formed. All cutting and drilling of tiles shall be neatly done without marring the surface. The cut edges of tiles against any trim, built-in fixtures, etc., shall be carefully ground and jointed.
- d. All joints shall be rubbed to a consistent evenness, flush with face or shoulder of tiles as the case may be.
- e. Do all cutting of tiling that may be required for all fixtures, outlet boxes, piping, etc., extending to or through tile.
- f. Installation of tile shall be in accordance with American National Standards Institute Spec. No. A108 for types of tile and setting methods described above.
- g. Damaged or defective work must be replaced with new. Replacement of work damaged by other trades shall be done by this Contractor and paid for by those responsible. Replacements must match original work.
- h. Install expansion and control joints in accordance with TCNA method EJ171.

PROTECTION

- 01 Protect floors from foot traffic for at least 24 hours and general traffic for at least 72 hours after installation. Prohibit heavy traffic on floors for at least 7 days after installation.
- 02 Protect walls from impact, vibration and heavy hammering on adjacent and opposite walls for at least 14 days after installation.
- 03 Protect from freezing and total water immersion for at least 21 days after installation.

CLEANING

- 01 At completion of work, thoroughly clean all tile, leaving work in unstained and perfect condition.

GUARANTEE

- 01 This Contractor shall guarantee all materials and workmanship under this heading to be free from defects for a two (2) year period from date of acceptance.

SECTION 10B**TOILET ROOM ACCESSORIES**

01 This Section shall provide and install toilet room accessories in accordance with the following schedule. Bradley Washroom Accessory Catalog Numbers have been used in the schedule. Alternate Acceptable Manufacturers: Bobrick Corp., American Specialties, Charles Parker.

02 Schedule:

LOCATION	DESCRIPTION	MODEL NO.	REMARKS	PLAN ABBR.
Refer to Enlarged Floor Plans	Grab Bars @ HC WC	812	1 @ 18", 1 @ 36", and 1 @ 42"	A
Toilet stalls	Toilet paper dispenser	n/a	One @ Each WC - By BAS, installed by contractor	B
Ea Toilet rm as indicated	Hand dryer	VERDEdri Q-974A	Refer to electrical	C
Women's toilet stalls as indicated	Disposal Units	4721-15	In Part'n Btw'n.WC's	D
Women's toilet stalls as indicated	Disposal Units	4722-15	Surface Mounted	D
Ea. Toilet rm as indicated	Soap Dispenser	n/a	By BAS, installed by contractor	E
Ea toilet stall door	Coat hook	9943	Surface Mounted	F

03 Installation

- a. Assemble fixtures and associated fittings and trim in accordance with manufacturer's instructions.
- b. Install supports attached to building structure for equipment requiring supports.
- c. Grab Bars: Install grab bars to withstand downward force of not less than 250 lbf (1112 N) per ASTM F 446.
- d. Install equipment level, plumb, and firmly in place in accordance with manufacturer's rough-in drawings.

04 Cleaning and Protection.

- a. Repair or replace defective work, including damaged equipment and components.
- b. Clean unit surfaces, and leave in ready-to-use condition.
- c. Turn over keys, tools, maintenance instructions, and maintenance stock to Owner.

05 Testing and Adjusting

- a. Test each piece of equipment provided with moving parts to assure proper operation, freedom of movement, and alignment.

SECTION 10D**TOILET PARTITIONS**

- 01 This Section shall provide and install floor braced Hiney Hider Commercial Bathroom Partitions as manufactured by Scranton Products (basis of design).
- a. Approved alternate manufacturer's:
1. Global Partitions Corp, an ASI Group Company.
 2. General Partitions Mfg. Corp.
 3. Weis-Robart Partitions, Inc.
- 02 All dividers, doors and fronts shall be constructed of matching durable, solid HPDE panels. Panels shall be non-absorbent, water resistant, color fast and impervious to humidity, steam, soaps, detergents, chemicals and corrosion. Panels shall require no edge protection, and shall be scratch and wear resistant, anti-static, non-toxic, odor-free and shall not mildew. Panels shall be fire retardant, and shall not form burning drops or release toxic fumes. All doors, pilasters, dividing panels shall be 1" thick, floor mounted, and 55" in height. All members shall have 15 degree beveled edges.
- 03 Installation shall occur in Toilet Rooms
- 04 Hardware: Hardware and fittings shall be from Scranton Products Standard Hardware Collection, heavy gauge stainless steel with a satin brushed finish.
- a. Hinges shall be surface mounted "Stealth Integral Hinges".
- b. Surface mounted slide latch shall provide emergency egress, shall not require any twisting motion and shall be ADA compliant.
- c. Strike and keeper shall be thru bolted and provide emergency ac.
- d. Coat hooks and wall bumpers shall be provided for in swing doors. Door pulls shall be added for out swing doors.
- e. Stirrup type, single ear, double ear and U-brackets shall be stainless steel & provided at appropriate locations.
- f. Fasteners for hinges, slide latch and keeper shall be stainless steel with torx-heads.
- g. Shoes at floor brace locations shall be stainless steel.
- h. Aluminum headrails as required.
- 05 Where scheduled provide openings in partitions for sanitary napkin disposal unit installation. . See TOILET ROOM ACCESSORIES Section 10B for locations.
- 06 Colors: Black with texture.
- 07 Installation:
- A. General: Comply with manufacturer's written installation instructions. Install units rigid, straight, level, and plumb. Secure units in position with manufacturer's recommended anchoring devices.
1. Maximum Clearances:
 - a. Pilasters and Panels: 1/2 inch.
 - b. Panels and Walls: 1 inch.
 2. Full-Height (Continuous) Brackets: Secure panels to walls and to pilasters with full-height brackets.
 - a. Locate bracket fasteners, so holes for wall anchors occur in masonry or tile joints.
 - b. Align brackets at pilasters with brackets at walls.
- B. Overhead-Braced Units: Secure pilasters to floor and level, plumb, and tighten. Set pilasters with anchors penetrating not less than 1-3/4 inches into structural floor unless otherwise indicated in manufacturer's written instructions. Secure continuous head rail to each pilaster with no fewer

than two fasteners. Hang doors to align tops of doors with tops of panels and adjust, so tops of doors are parallel with overhead brace when doors are in closed position.

- C. Floor-Anchored Units: Set pilasters with anchors penetrating not less than 2 inches into structural floor unless otherwise indicated in manufacturer's written instructions. Level, plumb, and tighten pilasters. Hang doors and adjust, so tops of doors are level with tops of pilasters when doors are in closed position.
- D. Urinal Screens: Attach with anchoring devices to suit supporting structure. Set units level and plumb, rigid, and secured to resist lateral impact.