Portage Public Schools
THE FUTURE LEARNS HERE

Portage Public Schools, Portage, Michigan is soliciting sealed proposals for:

Project Name: 20448 - Portage North Middle School – Security and Ballistic Window Film

RFP ISSUE DATE: Friday, November 1, 2019

PROPOSAL DUE: Tuesday, November 19, 2019 at 10:00 am

WALK-THROUGH: Although not mandatory, contractors may walk the site to determine the scope of work, equipment and materials required by setting up an appointment with David Skinner before bid opening.

Number of Copies Required: 2 (Two) paper, 1 (One) PDF on flash drive

Facsimile/Email Proposals Will Not Be Accepted

DELIVERY ADDRESS & INSTRUCTIONS

Portage Public Schools
Attn: Purchasing Department
8107 Mustang Drive
Portage, MI 49002

Bids will be publicly opened and read at the above address.
Include on the Outermost Envelope the Project Name & Number (above). All Envelopes Must Be Sealed.

General questions regarding the submission of this RFP should be directed to:

Amanda Howard, Purchasing Agent, at (269) 323-5181 or ahoward@portageps.org.

****Addendums (if any), bid tabulations, and award notices will be posted on our website: www.portageps.org under the District tab, then under Bids & Proposals.***

Questions relative to the Technical Specification may be addressed to:

David Skinner, Director of Construction, at (269) 330-2550 or dskinner@walbridge.com

You are invited to submit a proposal for this equipment and or service. Specifications, terms, conditions and instructions for submitting proposals are contained herein. This Request for Proposal with all pages, documents and attachments contained herein, or subsequently added to and made a part hereof, submitted as a fully and properly executed proposal shall constitute the contract between the District and the successful proposer when approved and accepted on behalf of the District by an authorized official or agent of the District.

All proposers shall complete and return the Proposal and Award page(s) and submit all information requested herein in order for a proposal to be responsive. **FAILURE TO DO SO MAY RESULT IN THE PROPOSAL BEING REJECTED AS NON-RESPONSIVE.** The proposal document shall be returned in its entirety, in a properly identified and sealed envelope to the Purchasing Department at the above address. **All bids must be delivered in a sealed envelope with the project name and number clearly written on the outermost envelope.**

PROPOSALS MUST BE RECEIVED BY TIME OF THE DUE DATE - LATE PROPOSALS WILL NOT BE CONSIDERED.

Instructions to Proposers:

1. **EXAMINATION OF PROPOSAL DOCUMENT**-Before submitting a proposal, proposers shall carefully examine the specifications and shall fully inform themselves as to all existing conditions and limitations. The proposer shall indicate in the proposal the sum to cover the cost of all items included on the proposal form.
2. **PREPARATION OF PROPOSAL**-The proposal shall be legibly prepared in ink or typed. The proposal shall be legally signed and the complete address of the proposer given thereon. All proposals shall be tightly sealed and plainly marked SEALED PROPOSAL and identified by project name, bid opening date and time. Proposals opened by mistake, due to improper identification, will be so documented and resealed. The Purchasing Department will maintain and guarantee confidentiality of the contents until the specified opening date and time. Facsimile and/or e-mailed bids will not be accepted. The PDF version of the proposal must contain all documents, specification sheets, required forms, etc., contained in the paper copies.
3. **LATE PROPOSALS**-Any proposal received at the office designated hereinafter the exact time specified for receipt, will not be considered. (Note: The District reserves the right to consider bids that have been determined by the District to be received late due to mishandling by the District, or circumstances beyond the control of the proposer, after receipt of the proposal and before an award has been made.)
4. **ADDITIONAL CHARGES -** No additional charges, other than those listed on the price breakdown sheets, shall be made. Prices quoted will include verification/coordination of order and all costs for shipping and insurance costs.
5. **DISCOUNTS -** List any discounts that may be applicable from programs such as MiDEAL, US Commodities, etc. Note the District will apply for eRate funding where appropriate. Awarded proposers are expected to participate in eRate funding.
6. **FEDERAL OR STATE SALES, EXCISE, OR USE TAXES -** Portage Public School is tax exempt. Do not include Federal, State, or Local taxes in your bid price except as related to enhancements to real property.
7. **ACCEPTANCE OF PROPOSALS -** Portage Public Schools reserves the right to accept or reject any or all bids, either in whole or in part; to award contract to other than low bidder; to waive any irregularities and/or informalities; and in general to make awards in any manner deemed to be in the best interest of Portage Public Schools.

1. RFP Requirements

1.1. Order Fulfillment

It is expected that a single purchase order for this purchase will be issued after the bid is approved by the Board of Education. This can take up to 60 days to complete.

1.2. Freight

The base bid must include all freight charges for delivery of equipment to Portage Public Schools. Delivery will be to a single location.

1.3. Labor/Installation

Labor and installation costs are to be included or listed separately on your bid response. Estimated time to complete the job needs to be listed as well as your approximate start time based on your current schedule openings.

1.4. Schedule and Safety

Schedule and coordination of site logistics and safety items will be conducted through the Maintenance Supervisor of Portage Public Schools. Proper PPE must be worn including but not limited to high visibility shirts (with at least 8” of sleeve) or vests, hardhats, safety glasses and boots. These are the responsibility of the bidding company or its employees.

1.5. RFP Response

All responses must have pricing information submitted on the included forms. Full product literature must be included with your response. Estimated delivery time must be included in your response.

1.6. Bid Pricing

Bid responses, pricing, etc. must be valid for 60 days after the bid response due date and time, or the length of the contract if so applicable and specified.

GENERAL CONDITIONS

Portage Public Schools reserves the right to accept or reject any or all bids or partial bids, to accept a bid that is not low bid, etc. based on what is determined to be in the best interest of the Portage Public School district.

A representative from the vendor will accept any/all items being delivered. This representative will inform the Owner of missing or damaged items. All paperwork noting condition of items will come to the Portage Public Schools Purchasing office.

PPS shall conduct a final inspection of the project upon completion to assure that all items meet specifications, are in new and undamaged condition, are assembled or installed properly and placed in their properly designated locations.

CONTRACTOR RESPONSIBILITIES

The Contractor is defined as:

The bidder(s) awarded the contract(s) to provide, deliver, and install/assemble the project per specifications.

DELIVERY AND INSTALLATION SCHEDULES

Contractor shall guarantee delivery between 8:00 a.m. and 3:00 p.m. Monday, through Friday.

It is the Contractor's responsibility to receive items delivered from the Manufacturer and to deliver those furnishings to the job site(s) at the time of installation. Drop shipping is unacceptable and if it occurs will result in a deduction in the Contractor's contract price in the amount of cost incurred by the Owner or Owner's representative receiving and handling the drop shipment.

PAYMENT TERMS

Upon final approval from the Owner, based on substantial completion of the punch list items, final and complete payment will be made.

Send all invoices directly to:
Mary Caswell
Portage Public Schools
8107 Mustang Drive
Portage, MI 49002
mcaswell@portageps.org

NO ADVERTISING CLAUSE

No written publication or photographs will be allowed without written approval of Portage Public Schools.

CONTRACTOR CODE OF CONDUCT

1. CONTRACTOR CODE OF CONDUCT

The purpose of the Portage Public Schools and its employees is to provide a safe, positive learning environment for the students of the District. In providing that environment it is

mandatory that all employees, visitors, and contractors follow certain levels of conduct, dress, and demeanor. This Code of Conduct outlines the expectations of the Portage Public Schools for persons both contemplating performing work and performing work for Portage Public Schools in the capacity of a contractor or subcontractor. These rules will become part of the mandatory working conditions of the contract and failure to comply by the any contractor, subcontractor, management, employee, or contracted consultant may result in the cancellation of the contract.

In general it is expected that everyone entering a Portage Public Schools facility, whether a school, support facility, or the surrounding grounds, must dress, act, and talk in a manner that is conducive to the education process of children while assuring their overall safety and security. The following rules have been established to assure that this is done:

Every contractor employee that enters or leaves the building must sign in and out at either the school office or the building engineer's office as designated by the school administrator. This sign-in sheet must record the name, time in and out, the firm, and the signature of the individual.

All contractors shall be furnished <u>by their company</u> a badge or identification that is to be worn while in the building. Such identification shall clearly indicate the individual's name and the name of the firm they are working for.

Prior to the beginning of a job, the contractor shall furnish the project supervisor with a list of individuals expected to be on the job, contact persons with phone numbers, and a schedule of the activities to take place.

The contractor shall provide the project supervisor with a scope of work and check with him prior to drilling or penetrating any walls, floors, or ceilings.

Each person working in a school building or on school property shall comply with the following:

No drinking or possession of liquor or alcoholic beverages and or possession of any kind of illicit drugs or narcotics.

No use of District facilities or equipment including telephone, computers, internet access, fax, kitchen, maintenance or office equipment.

No smoking or use of any tobacco products anywhere within the building at any time nor outside the school on District property during normal school hours (This is a law and punishable as a civil infraction by local authorities).

A reasonable standard of dress must be followed. Within the educational facilities where students and parents are or can be present, this is to mean clothing or attire must be suitable for the work and must not bear images or writing depicting anything to be construed as obscene in nature or promoting or portraying alcoholic beverages or use, drugs, narcotics, tobacco or establishments that serve or promote the use of these substances.

There shall be no use of profanity or obscene language or gestures.

Language, gestures, or other actions that depict sexual or ethnic harassment or intimidation will not be permitted.

The contractor is responsible for a clean and safe workplace. To that end the following will be adhered to:

All work areas, walkways, and stairs must be kept clear of debris and loosely scattered materials.

Material storage is to be in an area designated by the project supervisor.

All work areas are to be cleaned by the contractor prior to leaving. Building staff will not be responsible for cleaning work areas.

All trash, debris, and material must be removed from the worksite each day and disposed of off-site. District dumpsters and trash containers are not to be used by contractors for disposal.

All contractor tools and equipment must be kept in good working order, with guards and safety devices in place and working. Defective tools must be taken out of service. District tools and equipment will not be loaned to contractors.

Contractors are to provide and use required protective safety equipment and comply with all local, state, and federal safety laws and regulations.

Contractors are responsible for the reporting of accidents both to the District and their management and to obtain any emergency treatment that may be required.

Upon leaving a jobsite any/all doors and windows must be locked, secured, or left as they were found prior to beginning the work.

Contractors are to provide their own site safety plan for areas that they are working in.

Contractor is not to disable or interfere with any fire or burglary system equipment or telephone lines servicing such equipment. If equipment needs to be removed, relocated, or temporarily disabled, the contractor needs to coordinate this with the building engineer.

The District will not tolerate acts of theft, vandalism, fighting, or abuse of the facilities or activities that threaten the security and safety of the school environment and its students, staff, and employees.

In summary, good judgment must be used to protect the learning environment. **Failure to comply with the above or to exhibit conduct which is deemed not in the best interest of the Portage Public Schools will be grounds for immediate removal from the building and the project.**

SCOPE OF WORK:

1. The successful bidder shall:
    a. Provide labor, materials, tools, equipment and supervision to provide and install security film window system as designated on the attached plan.
        i. Basis of design is 3M S800 clear security film or equivalent system. Includes attachment system. Dow 995 adhesive caulk or equivalent.
    b. Provide labor, materials, tools, equipment and supervision to provide and install bullet resistant window film system as designated on the attached plan. Includes attachment system.
        i. Basis of design is C-Bond Systems, Level IIA or equivalent.
2. Turn in all product data including testing data and samples along with your bid.
3. Conduct pre-installation conference on site prior to commencing work. Coordinate installation with Owner's designated representative.
4. Coordinate all working hours with Owner's designated representative. Typical working hours are between 8:00 AM and 5:00 PM. Due to high student traffic, some areas will not be available until after 3:00 PM, weekends, or half days.
5. All products listed are to be installed by a single installer with a minimum of five years demonstrated experience in installing products of the same type and scope as specified.
6. Include all windows, doors, storefront and glazed entrances as designated on the attached plans.
7. Clean surfaces thoroughly prior to installation. Prepare surfaces using the methods recommended by the manufacturer for achieving the best results for the substrate under project conditions.
8. Install in accordance with the manufacturer's instructions.
9. Remove all leftover material and debris from Work area. Use necessary means to protect film before, during and after installation.
10. Touch-up, repair or replace damaged products before Substantial Completion.
11. Reference Attachments:
    a. Attachment 01 – PNMS – School Map
    b. Attachment 02 – 3M Ultra S800 Specs
    c. Attachment 03 – BondKap Spec
    d. Attachment 04 – C-BOND MASTER SPEC – NU Level IIA-V4
    e. Attachment 05 – Cbond System Performance Guide V6
    f. Attachment 06 – Dow 995 Spec
    g. Attachment 07 – A111A_FIRST LEVEL FLOOR PLAN-AREA A
    h. Attachment 08 – A111B_FIRST LEVEL FLOOR PLAN-AREA B
    i. Attachment 09 – A111C_FIRST LEVEL FLOOR PLAN-AREA C
    j. Attachment 10 – A112A_SECOND LEVEL FLOOR PLAN-AREA A
    k. Attachment 11 – A112B_SECOND LEVEL FLOOR PLAN-AREA B
    l. Attachment 12 – A113B_THIRD LEVEL FLOOR PLAN-AREA B
    m. Attachment 13 – A401_INTERIOR ELEVATIONS
    n. Attachment 14 – A402_INTERIOR ELEVATIONS
    o. Attachment 15 – A403_INTERIOR ELEVATIONS
    p. Attachment 16 – A404_INTERIOR ELEVATIONS
    q. Attachment 17 – A411_INTERIOR ELEVATIONS
    r. Attachment 18 – A501_DOOR SCHEDULE
    s. Attachment 19 – A502_DOOR INFO AND FRAME TYPES

BID PROPOSAL FORM

(All pages 9-12 must be included with your response)

NAME OF BIDDER

Firm Name: _____

Address: _____

_____

Telephone & Fax: _____

Contact Name and E-mail: _____

PROJECT NAME

Project Name: **20448 - Portage North Middle School – Security and Ballistic Window Film**

AGREEMENTS

The Owner reserves the right to accept or reject any or all Bids in whole or in part, or to waive any informalities therein. If in the Owner's opinion it is in their best interest, the contract may be awarded to other than the lowest bidder, for reasons of establishing uniformity, delivery time, etc.

The undersigned acknowledges the following are included with the Bid Proposal Form: (please initial)

Detailed Product Specification Information (where applicable): ____.

Warranty Specification Information (where applicable): _____

Two (2) paper copies: _____

One (1) PDF of the Entire Proposal (including all materials in paper copies): _____

Total Cost (including Labor)_____
*Please be sure to note if your price does NOT include all labor costs.

Estimated time to complete the job _____

Estimated start time for scheduling purposes _____

LEGAL STATUS OF BIDDER

CERTIFICATION REGARDING DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS. The Vendor and/or Bidder certifies to the best of its knowledge and belief that it and its principals: Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency; Have not within a three-year period preceding this agreement been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of federal or state antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property; Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or local) with commission of any of the offences enumerated above in this certification; and Have not within a three-year period preceding this agreement had one or more public transactions (Federal, State, or local) terminated for cause or default; is not now or has been, within a three-year period preceding this date, been listed on the Excluded Parties List System website (EPLS).

Firm Name: _____

Name, title and signature of individual duly authorized to execute contracts:

Name: _____

Title: _____

Signature: _____

A Corporation organized and existing under the laws of the State of _____.

PORTAGE AFFILIATION (If it pertains):

Do you maintain a permanent office, factory, or other facility in Allegan, Barry, Branch, Calhoun, Cass, Kalamazoo, St. Joseph, or Van Buren counties with employees working in any of these counties? If yes, please provide the address:

_____

_____

Have you paid real or personal property taxes relating to said business in the previous tax year?

_____

_____

IRAN ECONOMIC SANCTIONS ACT

Effective April 1, 2013 all bids, proposals, and/or qualification statements received in the State of Michigan (MCL 129.313) must comply with the "Iran Economic Sanctions Act". The following certification is to be signed and included at the time of submittal.

CERTIFICATION

Pursuant to the Michigan Iran Economic Sanctions Act, 2012 P.A. 517, by submitting a bid, proposal or response, Respondent certifies, under civil penalty for false certification, that it is fully eligible to do so under law and that it is not an "Iran linked business", as that term is defined in the Act.

_____ _____
Signature Title

_____ _____
Company Date

FAMILIAL RELATIONSHIP DISCLOSURE STATEMENT

As required by Public Act 232 of 2005, all bids shall be accompanied by a sworn and notarized statement disclosing any familial relationship that exists between the owner or any employee of the bidder and any employee of the Portage Public School District or member of the Portage Public Schools Board of Education. The Board of Education shall not accept a bid that does not include this sworn and notarized disclosure statement.

The undersigned, the owner or authorized officer of _____(the "Bidder"), pursuant to the familial disclosure requirement provided in the Portage Public Schools advertisement for construction bids, hereby represent and warrant, except as provided below, that no familial relationships exist between the owner(s) or any employee of the company and any employee of the Portage Public School District or member of the Portage Public Schools Board of Education. If such a relationship exists, please explain:

_____

_____

_____

_____

_____

Attach additional pages if necessary

By:_____(Bidder Signature)

Title:_____(type or print)

Date:_____

Subscribed and Sworn to Before Me:

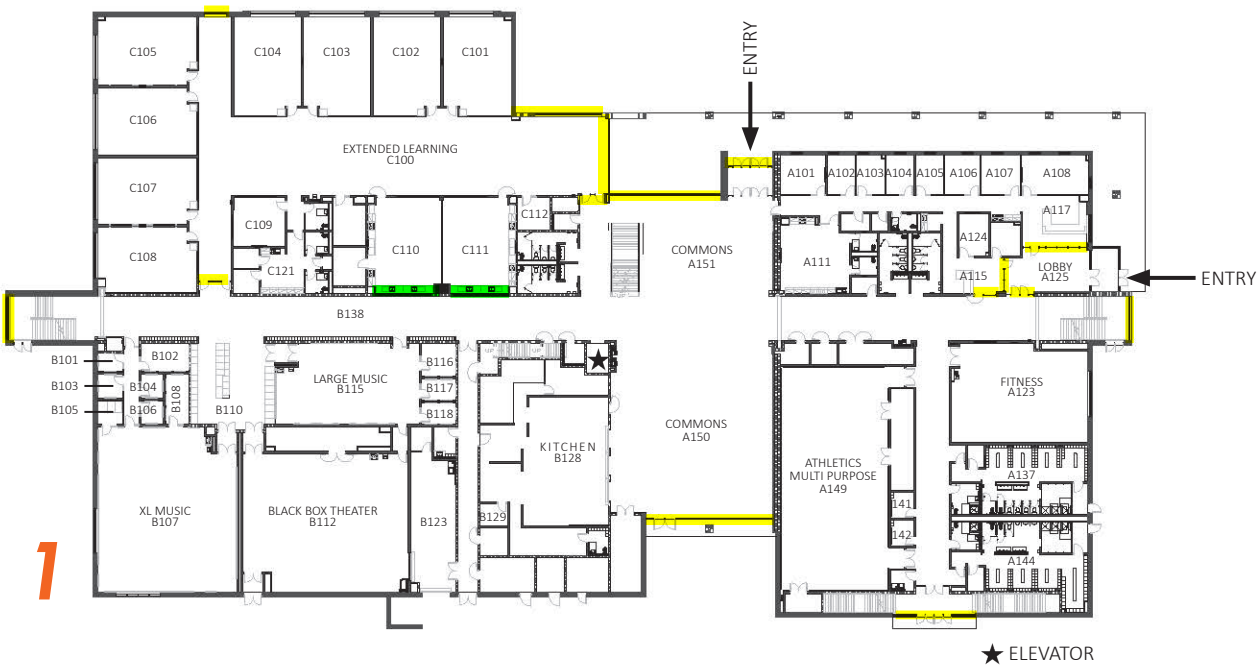
This_____day of_____, 20____A.D., in and for the

County of _____, Michigan.

My Commission expires _____.

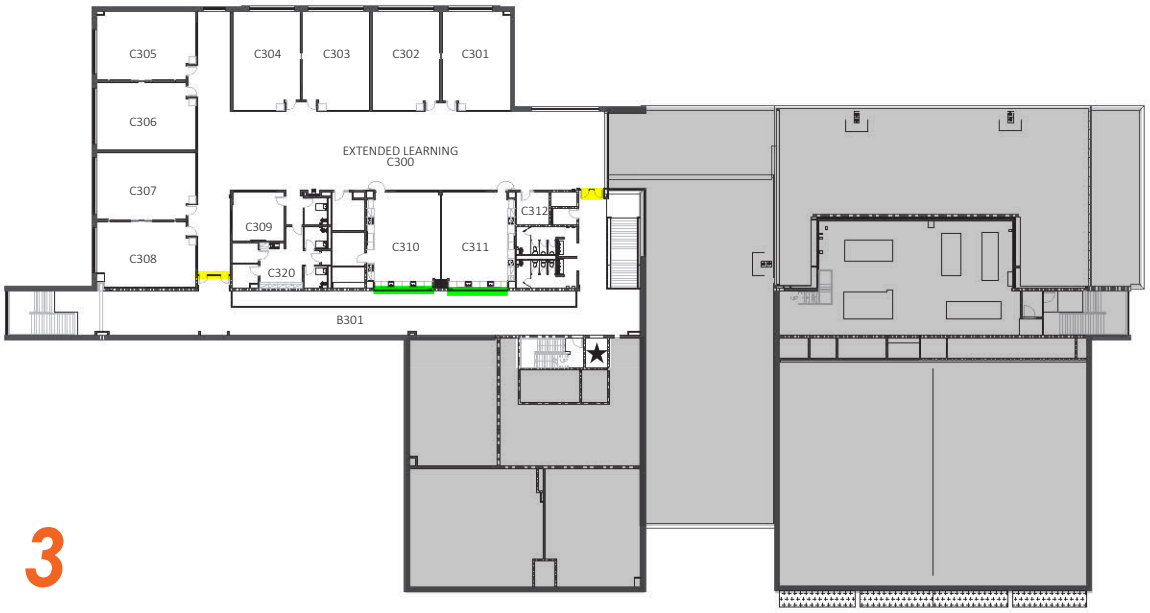
_____
Signature of Notary

PORTAGE NORTH MIDDLE SCHOOL



Security Glazing

Bullet Resistant Glazing



Specifications

Specifications for 3M™ Scotchshield™ Safety and Security Window Film, Ultra S800

1.0 Scope

This specification is for an optically clear glass shatter resistant and abrasion resistant window film which, when applied to the interior window surface, will help hold broken glass together and reduce the ultra-violet light that normally would enter through the window. This is an easily applied, tear-resistant safety and security window film for providing an increased measure of protection in a broad range of uses including basic glass fragment retention, spontaneous glass breakage, seismic preparedness, safety glazing, protection from windborne debris, bomb blast mitigation, and deterring Smash and Grab or Break and Entry events. Certain applications may require the film be used in conjunction with a film attachment system. The film shall be called 3M™ Scotchshield™ Safety and Security Window Film, Ultra S800.

2.0 Applicable Documents

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

The 1985 American Society for Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE) Handbook of Fundamentals.

The American National Standards Institute (ANSI).

ANSI Z97.1 Specification for Safety Glazing Material used in Buildings

The American Society for Testing and Materials (ASTM):

- ASTM E-308 Standard Recommended Practice for Spectrophotometry and Description of Color in CIE 1931 System
- ASTM E-903 Standard Methods of Test for Solar Absorbance, Reflectance and Transmittance of Materials Using Integrating Spheres
- ASTM D-882 Standard Test Method for Tensile Properties of Thin Plastic Sheeting
- ASTM D-1044 Standard Method of Test for Resistance of Transparent Plastics to Surface Abrasion (Taber Abrader Test)
- ASTM D-2582 Standard Test Method for Puncture-Propagation Tear Resistance of Plastic Film and Thin Sheeting
- ASTM D-4830 Standard Test Methods for Characterizing Thermoplastic Fabrics Used in Roofing and Waterproofing.
- ASTM G-90 Standard Practice for Performing Accelerated Outdoor Weatherizing for Non-metallic Materials Using Concentrated Natural Sunlight
- ASTM G 26 Standard Practice for Performing Accelerated Outdoor Weatherizing for Non-metallic Materials Using Concentrated Natural Sunlight
- ASTM E-84 Standard Method of Test for Surface Burning Characteristics of Building Materials
- ASTM D-1004 Standard Method of Test for Resistance of Transparent Plastics to Tearing (Graves Tear Test)
- ASTM E-1886 Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials
- ASTM E-1996 Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors and Impact Protective Systems Impacted by Windborne Debris in Hurricanes
- ASTM F-1642 Standard Method of Test for Glazing and Glazing Systems Subject to Airblast Loadings, as adapted by the U.S. Government GSA Test Standard Protocols
- ASTM F-2912 Standard Specification for Glazing and Glazing Systems Subjected to Airblast Loadings

The Consumer Products Safety Commission (CPSC) 16 CFR, Part 1201, Safety Standard for Architectural Glazing Material

GSA-TS01-2003 General Services Administration Standard Test for Glazing and Glazing Systems Subject to Airblast Loadings

Window 4.1. A Computer Tool for Analyzing Window Thermal Performance, Lawrence Berkeley Laboratory

3.0 Requirements of the Film

3.1 **Film Material**: The film material shall consist of an optically clear polyester film, consisting of co-extruded micro-layers, with a durable acrylic abrasion resistant coating over one surface, and a UV stabilized pressure sensitive adhesive on the other. The film color is clear and will not contain dyed polyester. The film shall have a nominal thickness of 8 mils (0.008 inches). There shall be no evidence of coating voids. The film shall be identified as to Manufacturer of Origin (hereafter to be called Manufacturer).

Important:
The information provided in this report is believed to be reliable; however, due to the wide variety of intervening factors, 3M does not warrant that the results will necessarily be obtained. All details concerning product specifications and terms of sale are available from 3M. This product is not approved in the State of Florida for use as hurricane, windstorm, or impact protection from wind-borne debris from a hurricane or windstorm. In compliance with Florida Statute 553.842, this product may not be advertised, sold, offered, provided, distributed, or marketed in the State of Florida as hurricane, windstorm, or impact protection from wind-borne debris from a hurricane or windstorm.

3M

Renewable Energy Division
St. Paul, MN 55144-1000
1-866-499-8857
www.3M.com/windowfilm

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Specifications
Ultra S800

3.2 Film Properties (nominal):

a) Tensile Strength (ASTM D882):
   Base Film: 32,000 psi (MD) / 32,000 psi (TD)
   Coated Film: 27,000 psi (MD) / 27,000 psi (TD)

b) Break Strength (ASTM D882):
   Base Film: 190 lb/in (MD) / 190 lb/in (TD)
   Coated Film: 215 lb/in (MD) / 215 lb/in (TD)

c) Percent Elongation at Break (ASTM D882):
   Base Film: 110 % (MD) / 100% (TD)
   Coated Film: 95 % (MD) / 95% (TD)

d) Yield Strength at 3% Elongation:
   Base Film: 12,000 psi (MD)
   Coated Film: 15,000 psi (MD)

e) Percent Elongation at Yield (ASTM D882):
   Base Film: 7% (MD)
   Coated Film: 8% (MD)

f) Young's Modulus (ASTM D882):
   Base Film: 550 kpsi (MD) / 600 kpsi (TD)
   Coated Film: 550 kpsi (MD) / 600 kpsi (TD)

g) Graves Tear Resistance (ASTM D1004):
   Maximum Force (lbs):
   Base Film: 40 (MD) / 40 (TD)
   Coated Film: 40 (MD) / 40 (TD)
   Maximum Extension (in):
   Base Film: 0.45 (MD) / 0.65 (TD)
   Coated Film: 0.50 (MD) / 0.57 (TD)
   Graves Area Tear Resistance (lbs%):
   Base Film: 1,100 (MD) / 1,300 (TD)
   Coated Film: 1,100 (MD) / 1,300 (TD)

h) Puncture Propagation Tear Resistance (ASTM D2582):
   Coated Film: 9 lbf (MD) / 10 lbf (TD)

3.3 Solar Performance Properties: film applied to ¼" thick clear glass

a) Visible Light Transmission: 88%
b) Visible Reflection: not more than 9%
c) Ultraviolet Transmission: less than 1% (300 – 380 nm)
d) Solar Heat Gain Coefficient: 0.79

3.4 Flammability: The Manufacturer shall provide independent test data showing that the window film shall meet the requirements of a Class A Interior Finish for Building Materials for both Flame Spread Index and Smoked Development Values per ASTM E-84.

a) Flame Spread Index (FDI): 5
b) Smoke Developed Index (SDI): 25

3.5 Abrasion Resistance: The Manufacturer shall provide independent test data showing that the film shall have a surface coating that is resistant to abrasion such that, less than 5% increase of transmitted light haze will result in accordance with ASTM D-1044 using 100 cycles, 500 grams weight, and the CS10F Calibrase Wheel.

Important:
The information provided in this report is believed to be reliable; however, due to the wide variety of intervening factors, 3M does not warrant that the results will necessarily be obtained. All details concerning product specifications and terms of sale are available from 3M. This product is not approved in the State of Florida for use as hurricane, windstorm, or impact protection from wind-borne debris from a hurricane or windstorm. In compliance with Florida Statute 553.842, this product may not be advertised, sold, offered, provided, distributed, or marketed in the State of Florida as hurricane, windstorm, or impact protection from wind-borne debris from a hurricane or windstorm.

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Renewable Energy Division
St. Paul, MN 55144-1000
1-866-499-8857
www.3M.com/windowfilm

Specifications
Ultra S800

3.6 Adhesion to Glass: The Manufacturer shall provide independent test data showing that the film shall have a 90-degree peel strength (adhesion to glass) according to ASTM D-1044 of at least 6 lbs/in.

3.7 Adhesive System: The film shall be supplied with a high mass pressure sensitive weatherable acrylate adhesive applied uniformly over the surface opposite the abrasion resistant coated surface. The adhesive shall be essentially optically flat and shall meet the following criteria:

a. Viewing the film from a distance of ten feet at angles up to 45 degrees from either side of the glass, the film itself shall not appear distorted.
b. It shall not be necessary to seal around the edges of the applied film system with a lacquer or other substance in order to prevent moisture or free water from penetrating under the film system.

3.8 Impact Resistance for Safety Glazing: The Manufacturer shall provide independent test data showing that the film, when applied to either side of the window glass, shall meet the 400 ft-lb impact requirements of 16 CFR 1201 (Category 2) and ANSI Z97.1 (Class A, Unlimited). Testing shall be done with film applied both on 1/8" and ¼" annealed glass.

3.9 Windborne Debris Protection: The Manufacturer shall provide independent test data showing the following:

a. [reserved]
b. [reserved]
c. Film shall pass ASTM E330 at a design pressure of 100 psf with 3M Impact Protection Adhesive attachment system

3.10 Bomb Blast Mitigation: The Manufacturer shall provide independent test data showing the following:

a. GSA Rating of "2" (Minimal Hazard) / ASTM F1642 "Minimal Hazard" with blast pressure of 7 psi and 44 psi*msec blast impulse, on ¼" annealed single pane glass and 3M Impact Protection Profile Attachment system
b. GSA Rating of "2" (Minimal Hazard) / ASTM F1642 "Minimal Hazard" with blast pressure of 7 psi and 43 psi*msec blast impulse, on ¼" tempered single pane glass and 3M Impact Protection Profile Attachment system
c. GSA Rating of "2" (Minimal Hazard) / ASTM F1642 "Minimal Hazard" with blast pressure of 7 psi and 42 psi*msec blast impulse, on ¼" annealed single pane glass and 3M Impact Protection Adhesive Attachment system
d. GSA Rating of "2" (Minimal Hazard) / ASTM F1642 "No Hazard" with blast pressure of 7 psi and 42 psi*msec blast impulse, on ¼" tempered single pane glass and 3M Impact Protection Adhesive Attachment system
e. GSA Rating of "2" (Minimal Hazard) / ASTM F1642 "Minimal Hazard" with blast pressure of 9 psi and 60 psi*msec blast impulse, on 1" annealed double pane glass and 3M Impact Protection Profile Attachment system
f. GSA Rating of "2" (Minimal Hazard) / ASTM F1642 "Minimal Hazard" with blast pressure of 10 psi and 89 psi*msec blast impulse, on 1" annealed double pane glass and 3M Impact Protection Adhesive Attachment system

4.0 Requirements of the Authorized Dealer/Applicator (ADA)

4.1 The ADA shall provide documentation that the ADA is authorized by the Manufacturer of the window film to install said window film as per the Manufacturer's specifications and in accordance with specific requests as to be determined and agreed to by the customer.

4.2 Authorization of dealership may be verified through the company's 3M ID Number.

4.3 The ADA will provide a commercial building reference list of ten (10) properties where the ADA has installed window film. This list will include the following information:

* Name of building
* The name and telephone number of a management contact
* Type of glass
* Type of film
* Amount of film installed
* Date of completion

Important:
The information provided in this report is believed to be reliable; however, due to the wide variety of intervening factors, 3M does not warrant that the results will necessarily be obtained. All details concerning product specifications and terms of sale are available from 3M. This product is not approved in the State of Florida for use as hurricane, windstorm, or impact protection from wind-borne debris from a hurricane or windstorm. In compliance with Florida Statute 553.842, this product may not be advertised, sold, offered, provided, distributed, or marketed in the State of Florida as hurricane, windstorm, or impact protection from wind-borne debris from a hurricane or windstorm.

3M

Renewable Energy Division
St. Paul, MN 55144-1000
1-866-499-8857
www.3M.com/windowfilm

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Specifications
Ultra S800

5.0 Requirements of the Manufacturer

5.1 The Manufacturer will ensure proper quality control during production, shipping and inventory, clearly identify and label each film core with the product designation and run number.

5.2 Materials shall be manufactured by:

3M Renewable Energy Division
3M Center, Building 235
St. Paul, MN 55144-1000

6.0 Application

6.1 Examination: Examine glass surfaces to receive new film and verify that they are free from defects and imperfections, which will affect the final appearance. Correct all such deficiencies before starting film application.

6.2 Preparation:

a. The window and window framing will be cleaned thoroughly with a neutral cleaning solution. The inside surface of the window glass shall be scraped with stainless steel razor blades with clean, sharp edges to ensure the removal of any foreign contaminants without damages the glass surface.
b. Drop cloths or other absorbent material shall be placed on the window sill or sash to absorb moisture accumulation generated by the film application.

6.3 Installation: The film shall be applied as to the specifications of the Manufacturer by an ADA.

a. Materials will be delivered to the job site with the manufacturer's labels intact and legible.
b. To minimize waste, the film will be cut to specification utilizing a vertical dispenser designed for that purpose. Film edges shall be cut neatly and square at a uniform distance of 1/8" (3 mm) to 1/16" (1.6 mm) of the window-sealing device.
c. Film shall be wet-applied using clean water and slip solution to facilitate positioning of the film onto glass.
d. To ensure efficient removal of excess water from the underside of the film and to maximize bonding of the pressure sensitive adhesive, polyplastic bladed squeegees will be utilized.
e. Upon completion, the film may have a dimpled appearance from residual moisture. Said moisture shall, under reasonable weather conditions, dry flat with no moisture dimples within a period of 30 calendar days when viewed under normal viewing conditions.
f. After installation, any left over material will be removed and the work area will be returned to original condition. Use all necessary means to protect the film before, during and after the installation.

7.0 Cleaning

The film may be washed using common window cleaning solutions, including ammonia solutions, 30 days after application. Abrasive type cleaning agents and bristle brushes, which could scratch the film, must not be used. Synthetic sponges or soft cloths are recommended.

8.0 Warranty

a) The application shall be warranted by the film manufacturer (3M) for a period of _____ years in that the film will maintain solar reflective properties without cracking, crazing, delaminating, peeling, or discoloration. In the event that the product is found to be defective under warranty, the film manufacturer (3M) will replace such quantity of the film proved to be defective, and will additionally provide the removal and reapplication labor free of charge.
b) 8.2 The film manufacturer (3M) also warrants against glass failure due to thermal shock fracture of the glass window unit (maximum value $500 per window) provided the film is applied to recommended types of glass and the failure occurs within sixty (60) months from the start of application. Any glass failure must be reviewed by the film manufacturer (3M) prior to replacement.

Important:
The information provided in this report is believed to be reliable; however, due to the wide variety of intervening factors, 3M does not warrant that the results will necessarily be obtained. All details concerning product specifications and terms of sale are available from 3M. This product is not approved in the State of Florida for use as hurricane, windstorm, or impact protection from wind-borne debris from a hurricane or windstorm. In compliance with Florida Statute 553.842, this product may not be advertised, sold, offered, provided, distributed, or marketed in the State of Florida as hurricane, windstorm, or impact protection from wind-borne debris from a hurricane or windstorm.

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FilmFastener LLC

SECTION 08873
SAFETY AND SECURITY GLASS ATTACHMENT

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Safety and security film attachment systems.

B. Glass attachment systems.

1.2 RELATED SECTIONS

A. Section 08300 - Specialty doors: Glass and glass with security film to receive frame attachment.

1. 08396 - Hurricane resistant doors
2. 08398 - Blast resistant doors

B. Section 08400 - Entrances and Storefronts: Glass and glass with security film to receive frame attachment.

1. 08415 - Aluminum entrances and storefronts
2. 08420 - Steel entrances and storefronts
3. 08425 - Stainless steel entrances and storefronts
4. 08430 - Bronze entrances and storefronts
1. 08450 - All-glass entrances and storefronts
1. 08485 - Impact-resistant aluminum-framed entrances and storefronts

C. Section 08500 - Windows: Glass and glass with security film to receive frame attachment.

1. 08505 - Metal windows
2. 08520 - Aluminum windows
3. 08589 - Hurricane resistant windows
4. 08590 - Window restoration and replacement

D. Section 08600 - Skylights: Glass and glass with security film to receive frame attachment.

E. Section 08800 - Glazing: Glass and glass with security film to receive frame attachment.

1. 08810 - Glass
2. 08845 - Blast resistant safety glazing film
3. 08873 - Safety films
4. 08874 - Security films

F. Section 08900 - Glazed Curtain Walls: Glass and glass with security film to receive frame attachment.

G. Section12490 - Window treatments: Specialty extruded plastic

1.3 REFERENCES

A. American Society for Testing Materials (ASTM)

B. American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE)

C. Association of Industrial Metallizers, Coaters and Laminators (AIMCAL)

D. American National Standards Institute (ANSI)

E. International Standards Organization (ISO)

F. International Window Film Association (IWFA)

G. Government Services Administration (GSA)

H. Consumer Products Safety Commission (CPSC)

I. Code of Federal Regulations (CFR)

J. Underwriters Laboratories Inc (UL)

1.4 PERFORMANCE REQUIREMENTS

A. Storm testing: 8 mil security film with Dow Corning 995 or GE SCS2000 Silpruf structural silicone the BondKap Attachment System should be capable of meeting the following tests. NOTE: Film manufacturer specifications may differ.

1. ASTM E-1886, Standard Test Method for Missile Impact and Cycling On Exterior Windows, Shutters, Doors and Curtain Walls - Large Missile C.
2. ASTM E-1996, Standard Specification for Missile Impact and Cycling On Exterior Windows, Shutters, Doors and Curtain Wall - Large Missile C
3. ASTM E-330-02 Test Method for Structural Performance of Exterior Windows, Shutters, Doors and Curtain Walls by uniform Static Air Pressure Difference.
4. ASTM E-331-00, Test Method for Structural Performance of Exterior Windows, Shutters, Doors and Curtain Walls by uniform Static Air Pressure Difference.

B. Bomb Blast Simulation: Testing may differ with safety film from varied manufacturers.

1. GSA TS-01-2003, GSA Performance Condition with a minimum blast pressure of 4 psi-28 psi-msec when applied with Dow Corning 995 and BondKap on 1/4 inch (6 mm) single pane annealed glass: 3A.
2. GSA TS-01-2003, GSA Performance Condition with a minimum blast pressure of 4 psi-28 psi-msec when applied with GE SCS2000 Silpruf and BondKap on 1/4 inch (6 mm) single pane tempered glass: 2.
3. ISO 16933 Hazard Rating with a minimum blast pressure of 7 psi-36 psi-msec when applied with GE SCS2000 Silpruf and BondKap on 1/4 inch (6 mm) double pane tempered glass: "Hazard Rating B (EXV33(B))".

4. UFC 4-010-01 Protection Level with a minimum blast pressure of 7 psi-36 psi-msec when applied with GE SCS2000 Silpruf on 1/4 inch (6 mm) double pane tempered glass: "High Level of Protection".

1.5 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Product Data: Manufacturer's data sheets on each product to be used, including:

1. Installation instructions and recommendations.
2. Storage and handling requirements and recommendations.
3. Physical properties and independent testing agency reports showing compliance with specified tests.

C. Detailed installed specifications.

D. Manufacturer's warranty information.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: All products specified in this section will be supplied by a single manufacturer with a minimum of five years experience.

B. Installer Qualifications: Documented in the installation of structural silicones with the BondKap Attachment System.

C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.

1. Install attachment to designated window.
2. Do not proceed until workmanship is approved.

1.7 DELIVERY, STORAGE AND HANDLING

A. Store products at room temperature. DO NOT allow products to be exposed to direct sunlight, product will warp.

1.8 PROJECT CONDITIONS

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

1.9 WARRANTY

A. At project close, provide to Owner or Owners Representative an executed current copy of the manufacturer's standard limited warranty outlining its terms, conditions, and exclusions from coverage.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Manufacturer: FilmFastener LLC, 8206 Copeland Rd, Odessa, FL 33556

Telephone: 813-926-8721

Web: www.filmfastener.com www.bondkap.com

2.2 BONDKAP ATTACHMENT SYSTEM

A. BondKap Attachment System. Weatherable Rigid PVC secured using approved structural silicones such as Dow Corning 995 or GE SCS2000 "Wet Glaze" type attachment. BondKap aids in the integrity of the silicone to maintain proper alignment and increases the tensile/tear strength of the silicone, while provided and aesthetic cover to an unsightly large bead of silicone.

1. BondKap, BK 2001.
    a. Width: 1.516 inches.
    b. Typically used for commercial storefront applications where added protection is necessary such as high profile faculties.
2. BondKap, BK2002.
    a. Width: 0.83 inch.
    b. Typical uses residential windows and patio doors.
3. BondKap, BK 2003.
    a. Width: 0.825 inch.
    b. Typical uses residential windows and patio doors.
4. BondKap, BK 2004.
    a. Width: 1.30 inches.
    b. Typically used for commercial storefront applications.
5. BondKap, BK2005.
    a. Width: 2.588 inches.
    b. Typically used for commercial storefront doors.
6. BondKap, BK 2006.
    a. Width: 1.78 inches.
    b. Typically used for commercial storefront doors.
7. BondKap, BK 2006 BV.
    a. Width: 1.90 inches.
    b. Typically used for commercial storefront doors.
8. BondKap, BK2008.
    a. Width: 0.668 inch.
    b. Typical uses residential windows.
9. BondKap, BK 2009.
    a. Width: 0.995 inch.
    b. Typical uses residential windows.
10. Material properties.
    a. Full cure of silicone 30 to 60 days depending on BondKap profile.
    b. strength and elongation dependent upon silicone used.

PART 3 EXECUTION

3.1 EXAMINATION

A. Film examination.

1. Assure film has been installed to manufacturers specifications and is free of defects and debris.
2. Assure film extends sufficiently to edges of frame.

B. Glass examination.

1. For installations securing impact or laminated glass to frames, assure glass is free of defects or edge cracks and is properly sized for the opening.

C. Frame examination.

1. Assure frame is clean and free of debris and is prepared according to silicone manufacturers specifications.

D. Structural silicone examination.

1. Assure silicone is within the recommended "use by" dates. If the silicone is out of date, DO NOT USE. Contact the appropriate personnel and continue when replacement silicone has been acquired.

E. BondKap examination.

1. Assure the BondKap is the correct length, color and profile for the installation.
2. Assure the BondKap has not been subject to direct sunlight and has warped. If damage has occurred replace as necessary. BondKap will not warp once properly installed and has full adhesion with the structural silicone.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation. Use primers as necessary following silicone manufactures specifications.

B. Pre-cut the BondKap strips as directed from the manufacturer.

3.3 INSTALLATION

A. Film Installation:

1. Install in accordance with manufacturer's instructions.

B. Silicone and BondKap installation:

1. Install as specified by silicone manufacturer and BondKap manufacturer.
2. Cut the tip of the silicone the appropriate size for the BondKap in use.
3. Apply the silicone to the frame and glass or on the BondKap depending on which profile is in use.
4. Place the BondKap on the silicone at the specified angle to achieve maximum contact with silicone frame and glass.

    a. If alternative BondKap selection is used and silicone has been applied to the BondKap, press the silicone BondKap combination to the desired position on the glass and frame.

5. Apply sufficient pressure to assure silicone is mated to BondKap, glass and frame. You should be able to perceive the silicone under the BondKap. If not lift the BondKap and apply more silicone. If an excess of silicone is protruding past the BondKap see 3.4 cleaning and protection.

3.4 CLEANING AND PROTECTION

A. Remove exposed silicone with plastic razor blades. denatured alcohol or other cleaner recommended by silicone manufacturer may also be used. Be aware not to damage the window film.

B. Protect installed product until completion of project.

C. Where installed film could be damaged by subsequent construction provide tape warning strips or barricades to prevent contact.

END OF SECTION

SECTION 08 87 23

SAFETY AND SECURITY FILM SYSTEM

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes film products applied to glass surfaces with a nano-technology fluid and edge anchor system to impart safety and security characteristics **to meet the National Institute of Justice (NIJ) Level IIA requirement.**

B. Locations: As indicated on Drawings

1.2 DEFINITIONS

A. Emissivity: The ability of a surface to absorb far-infrared heat and to reflect it. The lower the emissivity, the lower the far-infrared heat absorption and the greater the far-infrared heat reflectance.

B. Far-Infrared Heat: Heat radiated from objects at temperatures below 1300 deg F such as heat radiated from: room objects, objects heated by the sun, or a home heating system. Far-infrared heat is different from near-infrared heat that is heat radiated from objects at highly elevated temperatures such as the sun.

C. Low Emissivity (Low-E) Films: Films with improved far-infrared heat reflection, with the ability to reduce winter heat loss through windows. The reflection of far-infrared heat also reduces the need for summer cooling by reducing the transmission of far-infrared heat from outdoor objects through windows into the interior of a home or building.

D. Low Reflectance Films: Films whose visible light reflectance values are very close to that of ordinary glass.

E. Luminous Efficacy: Ratio of visible light transmission to shading coefficient for a glazing system.

F. Neutral Solar Films: Films that allow visible light to pass without distortion of color and that have equal visible light transmission properties at all wavelengths in the visible range from 380 to 780 nanometers.

G. Light to Solar Heat Gain Ratio: Ratio of visible light transmission to Solar Heat Gain Coefficient (SHGC) for a glazing system.

H. Solar Heat Gain Coefficient (SHGC): The fraction of incident solar radiation that actually passes through that window, including solar energy that is both directly transmitted and that which is absorbed and subsequently released inwardly by re-radiation and conduction. SHGC is expressed as a number between 0 and 1. The lower a window's solar heat gain coefficient, the less solar heat it transmits. This number is the mathematical complement of the TSER value: The sum of the Total Solar Energy Rejection (TSER), in decimal form of a glazing system and its SHGC value is 1; therefore, 1 - TSER = SHGC.

I. Spectrally Selective Solar Films: Films that reduce solar heat gain mainly by reducing the transmission of near-infrared solar radiation with minimal reduction of visible light transmission. Films with a Light to Solar Heat Gain Ratio of above 1.00 are spectrally selective.

1.3 REFERENCES

A. The following standards are referenced in this Section:

1. ANSI Z97.1, "Safety Glazing Materials Used in Buildings—Safety Performance Specifications and Methods of Test."

2. ASTM E-84, "Test Method for Surface Burning Characteristics of Building Materials".

3. ASTM C-1499-09, Monotonic Equibiaxial Flexural Strength of Glass (Double Ring Test).

4. ASTM D 882, "Standard Test Method for Tensile Properties of Thin Plastic Sheeting."

5. ASTM E 903, "Test Method for Solar Absorbance, Reflectance, and Transmittance of Materials Using Integrating Spheres"

6. ASTM D 1044, "Test Method for Resistance of Transparent Plastics to Surface Abrasion."

7. ASTM D 3330, "Standard Test Methods for Peel-Adhesion at 180 Degree Angle".

8. Consumer Product Safety Commission (CPSC) 16 CFR 1201, "Safety Standard for Architectural Glazing Materials."

9. National Institute of Justice standard, NIJ-STD-0108.01.

1.4 ACTION SUBMITTALS

A. Product Data (on 1/2" (12mm) annealed clear glass): For each film product indicated.

1.5 INFORMATION SUBMITTALS

A. Qualification Data: For firms and persons specified under "Quality Assurance" Article 1.7, demonstrating their capabilities and experience by including a list of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

A. Confirmation Data: Written confirmation from the curtain wall manufacturer that the warranty will not be affected by the security and safety film, the nano-technology fluid and the attachment system to the glazing members.

1.6 CLOSEOUT SUBMITTALS

A. Closeout Submittals: Upon completion of the Work, submit the following;

1. Executed warranty.

2. Maintenance (cleaning) and replacement instructions.

1.7 QUALITY ASSURANCE

A. Manufacturer Qualifications: Engage a firm experienced in manufacturing systems similar to those indicated for this Project and meeting the standards of the International Standards Organization (ISO), ISO 9001 Quality Assurance in Production and Installation.

B. Installer Qualifications: Engage an experienced installer certified, licensed, or otherwise qualified by film manufacturer as having the necessary experience, staff, and training to install manufacturer's products according to specified requirements.

C. Mockups: Apply glazing films in locations as directed to verify selections made under sample Submittals and to demonstrate aesthetic effects and qualities of materials and execution.

1. Obtain approval of field samples before continuing with remainder of installation.

2. Maintain field samples during remainder of installation in an undisturbed condition as a standard for judging the completed Work.

3. Approved field samples may become part of the completed Work.

D. Pre-installation Conference: Before installing glazing films, conduct conference at Project site. Conduct pre-installation conference in conjunction with installation of mockup.

1. Meet with Owner, Architect, glazing film Installer and glazing film manufacturer's representative.

2. Review methods and procedures related to installation, including manufacturer's written instructions.

3. Examine substrate conditions for compliance with requirements.

4. Review temporary protection measures required during and after installation.

5. Document proceedings, including corrective measures or actions required, and furnish copy of record to each participant.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Protect glazing films according to manufacturer's written instructions and as needed to prevent damage condensation, temperature changes, direct exposure to sun, or other causes.

1.9 FIELD CONDITIONS

A. Environmental Limitations: Do not proceed with film installation when ambient and substrate temperature conditions are outside limits permitted by manufacturer and when glass substrates are wet from frost, condensation, or other causes.

1.10 WARRANTY

A. Manufacturer's standard warranty agreeing to replace films that fail within 10 years from date of original installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS / PRODUCTS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the work include but are not limited to those indicated as Basis of Design.

B. Basis of Design: Subject to compliance with requirements, provide the following safety and security films:

1. **C-Bond Systems, LLC**; Safety and Security Films
   6035 South Loop East
   Houston, TX 77033
   Phone: (832) 649-5658
   Fax: (713) 513-5880
   www.cbondsystems.com
   info@cbondsystems.com

C. Product Description – In accordance with National Institute of Justice (NIJ) Level IIA Ballistic Resistance (Security): (Per the attached report from H.P. White Laboratory, Inc). Minimum thickness of glass to be 1/2" inch (12 mm) annealed (non-tempered) monolithic or insulated units and C-Bond proprietary ballistic resistant film system applied with the C-Bond technology, a patented nanotechnology glass strengthening window film application solution.

D. Color: Clear

2.2 PERFORMANCE REQUIREMENTS

A. Thermal and Optical Performance Properties: Provide glazing films that will not affect the thermal and optical performance characteristics as established by the glass components scheduled for curtain wall, storefront and entrance glazing.

B. Flexural Glass Strength: When tested in accordance with ASTM C-1499-09, Monotonic Equibiaxial Flexural Strength of Glass (Double Ring Test), the application of the mounting fluid/alone shall strengthen the glass to percentages up to and over 250 percent, and improve the flexure properties of the glass to percentages up to and over 130 percent.

2.3 GLAZING FILM ACCESSORIES

A. General: Provide products complying with requirements of glazing film manufacturer for application indicated and with a proven record of compatibility with surfaces contacted in installation.

C. Adhesive: Types recommended by glazing film manufacturer and nano-technology fluid manufacturer.

D. Cleaners, Primers, and Sealers: Types recommended by glazing film manufacturer.

2.4 ANCHOR SYSTEM

A. Provide transfer adhesive and mechanical anchor at edges of film to secure film, as recommended by the nano-technology fluid manufacturer.

1. Dow 995 Structural Silicone adhesive (or approved alternative such as structural tape or mechanical anchor) to be used for all anchoring of film to window frame/glazing system.

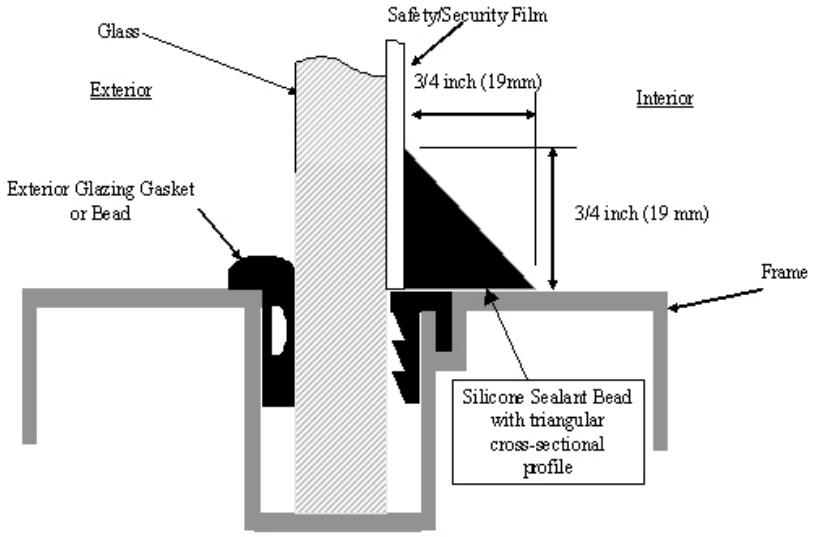
    a. Dow Corning® 995 Silicone Structural Glazing Sealant is a one-component neutral-curing silicone sealant designed specifically for structural bonding applications of glass and metal in factory or field situations.

    b. See the attached Dow Corning® 995 Silicone Structural Glazing Sealant Product Information Sheet.

    c. A minimum bead of 1/2” (.50”) overlapping the exposed edge of the security film, and 1/2” (.50”) overlapping the window frame/glazing system shall be used on all installations. Silicone bead installation may vary based on glazing system. **See Figure A below**.

    d. Structural adhesive color to be black, white, or grey. As allowed by availability from structural sealant or tape manufacturer. Color matched is described as matching the color of the existing glazing bead/gasket wherever possible.

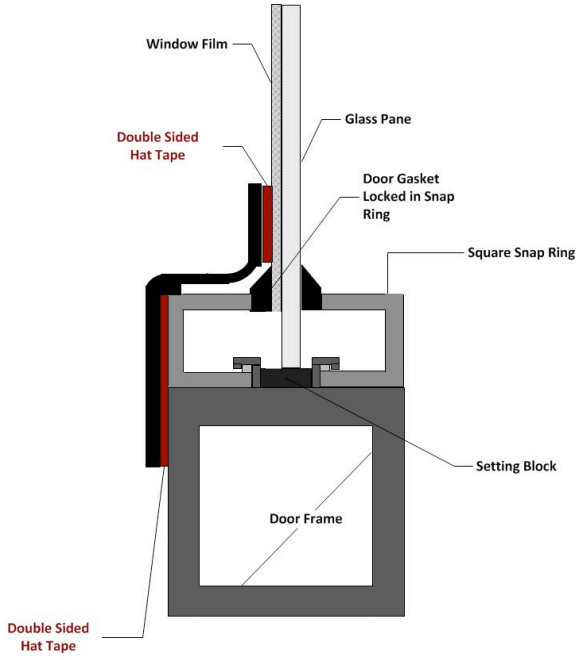
Figure A



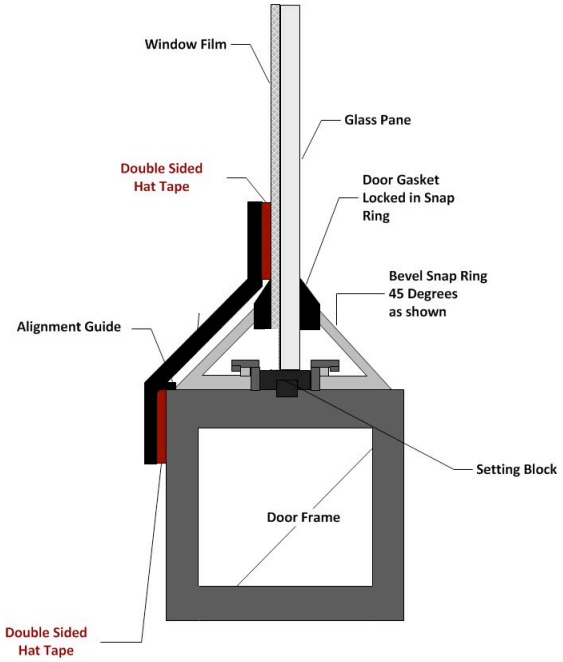
2. A Mechanical Anchor (such as structural tape) may be needed to secure doors or windows with unique glazing angles or with narrow exposed glazing ledges.

See examples A & B below.

Example A



Example B



PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine glass and surrounding adjacent surfaces for conditions affecting installation.

1. Report conditions that may adversely effect installation. In report, include description of any glass that is broken, chipped, cracked, abraded, or damaged in any way.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

C. Beginning of installation means acceptance of conditions.

D. Ensure mechanical attachment to curtain wall system is acceptable.

3.2 PREPARATION

A. Comply with manufacturers written instructions for surface preparation.

B. Immediately before beginning installation of films, clean glass surfaces of substances that could impair glazing film's bond, including mold, mildew, oil, grease, dirt, and other foreign materials.

C. Protect window frames and surrounding conditions from damage during installation.

3.3 INSTALLATION

A. General: Comply with glazing film manufacturers' written installation instructions applicable to products and applications indicated, except where more stringent requirements apply.

1. Clean glass surface with any typical household glass cleaner to remove debris such as; excess paint, sheetrock mud, dirt, lint, etc..,. and dry with a paper towel. Apply alcohol on the glass surface to remove any moisture and remove with a squeegee and/ or paper towel.
2. Use **dedicated** spray bottle or pressurized tank to apply the nano-technology mounting fluid.
3. If the nano-technology fluid sits idle more than 60 (sixty) minutes, slightly agitate it by rocking the spray bottle or pressurized tank from side to side for +/- 5 (five) seconds.
4. Apply nano-technology mounting fluid as follows:

   a. Hold spray bottle or pressurized tank nozzle approximately 8-10 inches from the glass surface.

b. Apply the nano-technology fluid to equally cover the entire glass surface area.

5. Install film continuously, but not necessarily in one continuous length. Install with no gaps.

   a. If seamed, install with no gaps. Horizontal seams are allowed. No vertical seams. Install seams horizontally, plumb and as high as possible.

6. Do not remove release liner from film until just before each piece of film is cut and ready for installation.

7. Install film using a nano-technology mounting fluid and custom cut to the glass with neat, square corners and edges to within 1/8 inch of the window frame.

8. Install film absent of bubbles, wrinkles, blisters, edge lifting and blemishes (within the installing technician's control).

B. After installation, view film from a distance of 10 feet against a bright uniform sky or background. Film shall appear uniform in appearance with no visible streaks, banding, thin spots or pinholes.

   1. If installed film does not meet this criteria, remove and replace with new film.

C. Spandrels: Remove insulation for reuse. After installation of the safety film system and anchors, reinstall insulation to comply with curtain wall requirements.

3.4 CARE & CLEANING INSTRUCTIONS

A. Remove excess mounting fluid at finished seams, perimeter edges, and adjacent surfaces.

B. Use cleaning methods recommended by glazing film manufacturer.

C. Replace films that cannot be cleaned.

D. Clean installed film with approved cleaners only. Contact nano-technology manufacturer for approved cleaning fluids.

E. See the attached C-Bond Systems Care & Cleaning Instructions.

END OF SECTION 08 85 53

Dow Corning® 995 Silicone Structural Adhesive

DOW CORNING

1. PRODUCT NAME

Dow Corning® 995 Silicone Structural Adhesive

2. MANUFACTURER

Dow Corning Corporation
Midland, MI 48686-0994
Phone: (517) 496-6000
FAX: (517) 496-4586

3. PRODUCT DESCRIPTION

Dow Corning 995 Silicone Structural Adhesive is a one-component, self-priming, shelf-stable, neutral-cure, elastomeric adhesive specifically formulated for silicone structural glazing, exhibiting the following unique features:

- Excellent unprimed adhesion to most common building substrates, including glass, reflective glass, anodized aluminum, granite and paints, including most fluoropolymer-based paints.
- Excellent shelf life and "Use By" dating
- Noncorrosive by-products
- 20-year performance warranty available
- Cures to extremely tough elastomeric rubber

Structural applications require prior testing and written print review by Dow Corning.

Basic Uses: *Dow Corning* 995 Silicone Structural Adhesive is designed for use in structural applications such as factory or field glazing of glass and metal.

Once cured, this adhesive forms a durable, flexible, watertight bond that can be warranted for 20 years.

The performance of sealant in a structural joint may be simulated using the ASTM C 1135 test procedure. The stress-strain relationship for *Dow Corning* 995 Silicone Structural Adhesive is illustrated in Figure 1.

Limitations: *Dow Corning* 995 Silicone Structural Adhesive should not be applied:

- To building materials that bleed oils, plasticizers or solvents – materials such as impregnated wood, oil-based caulks, green or partially vulcanized rubber gaskets or tapes
- In totally confined spaces (the sealant requires atmospheric moisture for cure)
- When surface temperatures exceed 60°C (140°F)
- Where painting of the sealant is required, as the paint film may crack and peel
- To surfaces in contact with food – this sealant does not comply with Federal Food and Drug Administration food-additive regulations
- In below-grade applications
- For use as an interior penetration firestop sealing system
- In horizontal floor joints where abrasion and physical abuse are likely to be encountered
- To frost-laden or damp surfaces
- For continuous immersion in water

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

Composition and Materials: *Dow Corning* 995 Silicone Structural Adhesive is a one-part, ready-to-use material that has the consistency of toothpaste. This consistency remains

TYPICAL PROPERTIES

These values are not intended for use in preparing specifications.

As Supplied		
	Color	Black
MIL-S-8802	Tack-Free Time, 50% RH, hours	1.5
	Curing Time, 50% RH, at 25°C (77°F), days	7-14
	Full Adhesion, days	14-21
	Flow, Sag or Slump, inches	<0.1
	Working Time, minutes	10-20
As Cured – After 7 days at 25°C (77°F), 50% RH		
ASTM D 2240	Durometer Hardness, Shore A, points	40
ASTM D 412	Ultimate Tensile, psi	350
	Ultimate Elongation, %	525
ASTM D 624	Tear Strength, die B, ppi	49
ASTM C 794	Peel Strength, ppi	40
As Cured – After 21 days at 25°C (77°F), 50% RH		
ASTM C 1135	Tensile at 25%, psi	48
	Tensile at 50%, psi	75
ASTM C 719	Joint Movement Capability, %	±50
As Cured – After 21 days at 25°C (77°F), 50% RH and Subjected to 4,500 hours QUV ASTM G-53		
ASTM C 1135	Tensile at 25%, psi	50
	Tensile at 50%, psi	78

Specification Writers: Please obtain a copy of the Dow Corning Sales Specification for this product, and use it as a basis for your specifications. It may be obtained from any Dow Corning Sales Office, or from Dow Corning Customer Service in Midland, MI. Call 1-800-322-8723.

Ballistic Resistance – Test Report

Client:	**C-Bond Systems, LLC.** Attention: Bruce Rich 410 Pierce Street Houston, TX 77002
Date of report:	**6 May 2015**
Report prepared by:	Ashley Gowland, Customer Operations Coordinator
Report reviewed by:	Wesley Mason, Manager of Technical Operations - Hard Armor
Test method and supporting documentation:	Per Customer Instructions NIJ-STD-0108.01, IIA
Job number:	000004257A
Test item receipt date, shipping method, identification information, and inspection results:	The sample(s) were received on **30 April 2015** via Federal Express. Test items were identified as ½" annealed glass. The sample(s) were inspected prior to testing and no anomalies were discovered.
Date of testing, test range, and testing performed:	Testing commenced at the H.P. White Laboratory, Inc. facilities at 3114 Scarboro Road, Street, MD on **6 May 2015**.
Date testing completed, sample disposal, return shipping method:	Testing concluded on **6 May 2015**; sample(s) will be discarded, unless otherwise instructed.
Test data transmittal method and storage location:	This test report and test data were transmitted via email in a manner compliant with ISO 17025 requirements. Permanent electronic and hardcopy files are maintained in accordance with HPWLI data storage policy on data storage systems, filed by job number.
Revision number and date:	NA
Disclaimer:	Testing was performed on samples provided by the client. H.P. White Laboratory, Inc. holds no responsibility for sample selection methods. This report is based on data obtained from testing only the samples submitted, and should NOT be interpreted as an endorsement by H.P. White Laboratory, Inc. of the continuing quality or performance of any other items of the same, or similar, design. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. This testing was performed by H.P. White Laboratory, Inc. to client specification, and the test results are the property of the client, who holds all rights of reproduction or publication of this report and related test data.

Test Procedures

Ballistic Resistance Testing: All testing was conducted on an indoor range at ambient conditions in accordance with your instructions and the general provisions of NIJ-STD-0108.01. Testing was conducted at threat level IIA, using caliber 9mm, 124 grain, FMJ and 357 magnum, 158 grain, JSP ammunitions. The test sample was positioned 16.5 feet from the muzzle of the barrel to produce zero degree obliquity impacts. Photoelectric infrared screens were located at 6.5 feet and 9.5 feet which, in conjunction with electronic chronographs, were used to compute bullet velocities at 8.0 feet forward of the muzzle. Penetrations was determined by visual examination of the 0.020 inch thick 2024-T3 aluminum alloy witness plate, placed parallel to and at a distance of 6.0 inches behind the test sample. Table I provides a summary of information on the attached data record(s).

Report prepared by:

Ashley Gowland
Customer Operations Coordinator

Report reviewed by:

Wesley Mason
Manager of Technical Operations - Hard Armor

Table I: Ballistic Resistance, Summary of Results

Test Sample			Ballistic Threat			Results		
Sample Number	Thickness (in.) (a)	Weight (lbs.)	Caliber	Obliquity	Shots (b)	Velocity (fps) Max	Velocity (fps) Min	Penetrations
153103CB1	0.541	15.15	9mm	0°	5	1211	1093	0
153103LGPB	0.542	15.15	357 Mag.	0°	4 (c)	1285	1323	0
153103LGPB2	0.555	15.40	357 Mag.	0°	5	1300	1268	0

(a) Based on an average of four corner thicknesses
(b) 4 shot(s) on 8" square – 1 in center
(c) Test terminated due to destruction of test sample

H.P. White Laboratory, Inc.

BALLISTIC RESISTANCE TEST

Client : 5805:C-Bond Systems, LLC

Job No. : 000004257 Test Date : 5/6/15

TEST PANEL

Manufacturer : C-Bond systems, LLC
Size : 18x18 in.
Thicknesses : 0.541, 0.541, 0.541, 0.542 in.
Avg. Thick. : 0.541 in.
Description : 1/2" annealed glass

Sample No. : 153103CB1 (9mm)
Weight : 15.15 lbs.
Hardness : NA
Plies/Laminates : NA

Date Rec'd. : 4/30/15
Via : Federal Express
Returned : N/A

SET-UP

Shot Spacing : 4 ON 8" SQUARE - 1 IN CENTER
Witness Panel : 0.020", 2024-T3 ALUMINUM
Obliquity : 0 deg.
Backing Material : NA
Conditioning : AMBIENT

Primary Vel. Screens : 6.5 ft., 9.5 ft.
Primary Vel. Location : 8.0 ft. From Muzzle
Residual Vel. Screens : NA
Residual Vel. Location : NA
Range to Target : 16.5 ft.
Target to Wit. : 6.0 in.

Range No. : 3
Temp. : 72 F
BP : 30.21 in. Hg
RH : 57%
Barrel No./Gun : R3/ 9mm
Gunner : Ches
Recorder : Bonsall

AMMUNITION

(1) : 9mm FMJ, 124 gr. Lot No. : REMINGTON 23558
(2) : Lot No. :
(3) : Lot No. :
(4) : Lot No. :

APPLICABLE STANDARDS OR PROCEDURES

(1) : NIJ-STD-0108.01
(2) : LEVEL IIA
(3) : REQUIRED VELOCITY: 1050-1130 FPS.

Shot No.	Ammo.	Time 1 (usec)	Velocity 1 (ft/s)	Time 2 (usec)	Velocity 2 (ft/s)	Avg. Vel. (ft/s)	Penetration	Footnotes
1	1	2478	1211	2478	1211	1211	None	
2	1	2676	1121	2676	1121	1121	None	
3	1	2652	1131	2652	1131	1131	None	
4	1	2712	1106	2712	1106	1106	None	
5	1	2744	1093	2744	1093	1093	None	

REMARKS :

FOOTNOTES :

Filename : 000004257 (153103CB1 (9mm)) 5805 C-Bond Systems, LLC.Pen

H.P. White Laboratory, Inc.

BALLISTIC RESISTANCE TEST

Client : 5805:C-Bond Systems, LLC

Job No. : 000004257 Test Date : 5/6/15

TEST PANEL

Manufacturer : C-Bond systems, LLC
Size : 18x18 in.
Thicknesses : 0.542, 0.542, 0.543, 0.543 in.
Avg. Thick. : 0.542 in.
Description : 1/2" annealed glass

Sample No. : 153103LGPB (357mag)
Weight : 15.15 lbs.
Hardness : NA
Plies/Laminates : NA

Date Rec'd. : 4/30/15
Via : Federal Express
Returned : N/A

SET-UP

Shot Spacing : 4 ON 8" SQUARE - 1 IN CENTER
Witness Panel : 0.020", 2024-T3 ALUMINUM
Obliquity : 0 deg.
Backing Material : NA
Conditioning : AMBIENT

Primary Vel. Screens : 6.5 ft., 9.5 ft.
Primary Vel. Location : 8.0 ft. From Muzzle
Residual Vel. Screens : NA
Residual Vel. Location : NA
Range to Target : 16.5 ft.
Target to Wit. : 6.0 in.

Range No. : 3
Temp. : 72 F
BP : 30.21 in. Hg
RH : 57%
Barrel No./Gun : R3/ 357 mag
Gunner : Ches
Recorder : Bonsall

AMMUNITION

(1) : 357 Magnum, JSP, 158 gr. Lot No. : REMINGTON 22847
(2) : Lot No. :
(3) : Lot No. :
(4) : Lot No. :

APPLICABLE STANDARDS OR PROCEDURES

(1) : NIJ-STD-0108.01
(2) : LEVEL IIA
(3) : REQUIRED VELOCITY: 1200-1300 FPS.

Shot No.	Ammo.	Time 1 (usec)	Velocity 1 (ft/s)	Time 2 (usec)	Velocity 2 (ft/s)	Avg. Vel. (ft/s)	Penetration	Footnotes
1	1	2480	1210	2480	1210	1210	None	
2	1	2362	1270	2362	1270	1270	None	
3	1	2267	1323	2267	1323	1323	None	
4	1	2334	1285	2334	1285	1285	None	(a)

REMARKS :

FOOTNOTES :

(a) TEST TERMINATED DUE TO DESTRUCTION OF TEST SAMPLE.

Filename : 000004257 (153103LGPB (357mag)) 5805 C-Bond Systems, LLC.Pen

H.P. White Laboratory, Inc.

BALLISTIC RESISTANCE TEST

Client : 5805:C-Bond Systems, LLC

Job No. : 000004257 Test Date : 5/6/15

TEST PANEL

Manufacturer : C-Bond systems, LLC
Size : 18x18 in.
Thicknesses : 0.554, 0.554, 0.556, 0.556 in.
Avg. Thick. : 0.555 in.
Description : 1/2" annealed glass

Sample No. : 153103LGPB2 (357mag)
Weight : 15.40 lbs.
Hardness : NA
Plies/Laminates : NA

Date Rec'd. : 4/30/15
Via : Federal Express
Returned : N/A

SET-UP

Shot Spacing : 4 ON 8" SQUARE - 1 IN CENTER
Witness Panel : 0.020", 2024-T3 ALUMINUM
Obliquity : 0 deg.
Backing Material : NA
Conditioning : AMBIENT

Primary Vel. Screens : 6.5 ft., 9.5 ft.
Primary Vel. Location : 8.0 ft. From Muzzle
Residual Vel. Screens : NA
Residual Vel. Location : NA
Range to Target : 16.5 ft.
Target to Wit. : 6.0 in.

Range No. : 3
Temp. : 72 F
BP : 30.21 in. Hg
RH : 57%
Barrel No./Gun : R3/ 357 mag
Gunner : Ches
Recorder : Bonsall

AMMUNITION

(1) : 357 Magnum, JSP, 158 gr. Lot No. : REMINGTON 22847
(2) : Lot No. :
(3) : Lot No. :
(4) : Lot No. :

APPLICABLE STANDARDS OR PROCEDURES

(1) : NIJ-STD-0108.01
(2) : LEVEL IIA
(3) : REQUIRED VELOCITY: 1200-1300 FPS.

Shot No.	Ammo.	Time 1 (usec)	Velocity 1 (ft/s)	Time 2 (usec)	Velocity 2 (ft/s)	Avg. Vel. (ft/s)	Penetration	Footnotes
1	1	2307	1300	2307	1300	1300	None	
2	1	2317	1295	2317	1295	1295	None	
3	1	2366	1268	2366	1268	1268	None	
4	1	2339	1283	2339	1283	1283	None	
5	1	2366	1268	2366	1268	1268	None	

REMARKS :

FOOTNOTES :

Filename : 000004257 (153103LGPB2 (357mag)) 5805 C-Bond Systems, LLC.Pen

CLEANING AND GENERAL CARE INSTRUCTIONS FOR C-BOND SYSTEMS

C-Bond System is a robust, durable product installed by trained professionals. You may observe some changes in the appearance of your window over the first 2 weeks; this is a normal part of the bonding process. Please note the following:

1. **Do not clean the glass during the drying period**.

The sun acts as a catalyst, ensuring that the adhesive thoroughly bonds the film to the glass. Window surfaces with a northern exposure or are internal glass may require longer drying times.

2. **Any large moisture bubbles will disappear.**

A few small particles or "points" may remain. These light reflections are inherent to film adhesives, and are usually visible only from the outside.

3. **A slightly hazy or milky appearance.**

This is caused by moisture between the film and the glass at the outset sometimes appears. Don't be concerned, it will disappear during the drying period.

4. **Cleaning Instructions:**

Do not use brushes, pure ammonia, industrial strength cleaners, or solutions that contain abrasive materials. Do not clean film for 10 days after installation. Never use cleaners that contain strong chemicals, especially ammonia. Harsh chemical can react to the window lm, causing it to blotch, fade or peel from the glass. Regular dishwasher soap mixed with soft water is the best window cleaning solution that you can use. Only use soft window cleaning towels. Never use newspaper, white or brown paper towels, scrub pads or a window scraper.

***Windex is a registered trademark of SC Johnson**

Do not clean film for 5 days after installation.

If your C-Bond film product receives deep scratches or cuts, contact your dealer immediately for replacement. These scratches or cuts can render the system ineffective.

SAFETY & SECURITY FILM
PERFORMANCE GUIDE

C-BOND I MULTI-PURPOSE GLASS STRENGTHENING PRIMER & WINDOW FILM MOUNTING SOLUTION

SPECIFICATION DATA		CPSC 1201 CAT. II	ANSI Z97.1	ASTM E 1886/1996 LARGE MISSILE, LEVEL C	GSA LEVEL 2 (5.6 PSI, 34.9 PSI-MS)	972 TESTED
FILM TO GLASS SPECIFICATION		SAFETY		WINDBORNE DEBRIS PROTECTION	BLAST MITIGATION	FORCED ENTRY
CB I	=/> 5/32" GLASS 7 OR 8 MIL FILM	⬡	●			
CB I	=/> 3/16" GLASS 11 MIL FILM	⬡	⬡	●		
CB I	=/> 1/4" GLASS 8 MIL FILM	●	●	⬡	●	
CB I	=/> 1/4" GLASS 15 MIL FILM	●	⬡	●	●	●

C-BOND II BALLISTIC RESISTANT FILM SYSTEM

SPECIFICATION DATA		CPSC 1201 CAT. II	ANSI Z97.1	ASTM E 1886/1996 LARGE MISSILE, LEVEL C	GSA LEVEL 2 (5.6 PSI, 34.9 PSI-MS)	972 TESTED	NIJ LEVEL I .22 & .38 CAL.	NIJ LEVEL II & IIA 9MM & 357 CAL.	752 TESTED
FILM TO GLASS SPECIFICATION		SAFETY		WINDBORNE DEBRIS PROTECTION	BLAST MITIGATION	FORCED ENTRY	BALLISTICS		
CB II	=/> 3/8" GLASS MULTI-LAYER	●	⬡	●	●	●	●		
CB II	=/> 1/2" GLASS MULTI-LAYER	●	⬡	●	●	●	●	●	●

● C-BOND TEST RESULT ⬡ EXPECTED TO PASS

* FOR MORE DETAILED INFORMATION, VIEW ALL PRODUCT TEST METHODS AND REPORTS AT WWW.CBONDSYSTEMS.COM

Dow Corning® 995 Silicone Structural Adhesive

DOW CORNING

1. PRODUCT NAME

Dow Corning® 995 Silicone Structural Adhesive

2. MANUFACTURER

Dow Corning Corporation
Midland, MI 48686-0994
Phone: (517) 496-6000
FAX: (517) 496-4586

3. PRODUCT DESCRIPTION

Dow Corning 995 Silicone Structural Adhesive is a one-component, self-priming, shelf-stable, neutral-cure, elastomeric adhesive specifically formulated for silicone structural glazing, exhibiting the following unique features:

- Excellent unprimed adhesion to most common building substrates, including glass, reflective glass, anodized aluminum, granite and paints, including most fluoropolymer-based paints.
- Excellent shelf life and "Use By" dating
- Noncorrosive by-products
- 20-year performance warranty available
- Cures to extremely tough elastomeric rubber

Structural applications require prior testing and written print review by Dow Corning.

Basic Uses: *Dow Corning* 995 Silicone Structural Adhesive is designed for use in structural applications such as factory or field glazing of glass and metal.

Once cured, this adhesive forms a durable, flexible, watertight bond that can be warranted for 20 years.

The performance of sealant in a structural joint may be simulated using the ASTM C 1135 test procedure. The stress-strain relationship for *Dow Corning* 995 Silicone Structural Adhesive is illustrated in Figure 1.

Limitations: *Dow Corning* 995 Silicone Structural Adhesive should not be applied:

- To building materials that bleed oils, plasticizers or solvents – materials such as impregnated wood, oil-based caulks, green or partially vulcanized rubber gaskets or tapes
- In totally confined spaces (the sealant requires atmospheric moisture for cure)
- When surface temperatures exceed 60°C (140°F)
- Where painting of the sealant is required, as the paint film may crack and peel
- To surfaces in contact with food – this sealant does not comply with Federal Food and Drug Administration food-additive regulations
- In below-grade applications
- For use as an interior penetration firestop sealing system
- In horizontal floor joints where abrasion and physical abuse are likely to be encountered
- To frost-laden or damp surfaces
- For continuous immersion in water

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

Composition and Materials: *Dow Corning* 995 Silicone Structural Adhesive is a one-part, ready-to-use material that has the consistency of toothpaste. This consistency remains

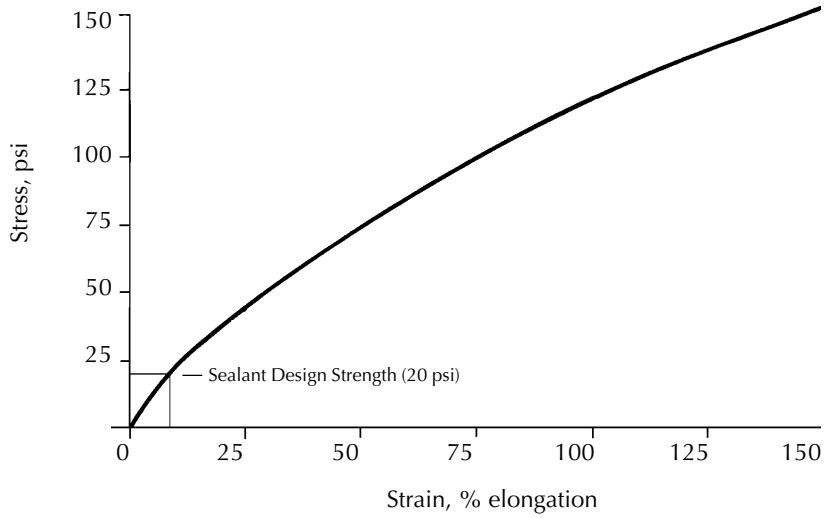
TYPICAL PROPERTIES

These values are not intended for use in preparing specifications.

As Supplied		
	Color	Black
MIL-S-8802	Tack-Free Time, 50% RH, hours	1.5
	Curing Time, 50% RH, at 25°C (77°F), days	7-14
	Full Adhesion, days	14-21
	Flow, Sag or Slump, inches	<0.1
	Working Time, minutes	10-20
As Cured – After 7 days at 25°C (77°F), 50% RH		
ASTM D 2240	Durometer Hardness, Shore A, points	40
ASTM D 412	Ultimate Tensile, psi	350
	Ultimate Elongation, %	525
ASTM D 624	Tear Strength, die B, ppi	49
ASTM C 794	Peel Strength, ppi	40
As Cured – After 21 days at 25°C (77°F), 50% RH		
ASTM C 1135	Tensile at 25%, psi	48
	Tensile at 50%, psi	75
ASTM C 719	Joint Movement Capability, %	±50
As Cured – After 21 days at 25°C (77°F), 50% RH and Subjected to 4,500 hours QUV ASTM G-53		
ASTM C 1135	Tensile at 25%, psi	50
	Tensile at 50%, psi	78

Specification Writers: Please obtain a copy of the Dow Corning Sales Specification for this product, and use it as a basis for your specifications. It may be obtained from any Dow Corning Sales Office, or from Dow Corning Customer Service in Midland, MI. Call 1-800-322-8723.

Figure 1: Stress-Strain Relationship of *Dow Corning* 995 Silicone Structural Adhesive[1]



[1]Stress-strain relationship properties are based upon a standard ½-inch by ½-inch by 2-inch tensile adhesion joint pulled at a rate of 2 inches per minute (ASTM C 1135).

uniform over a wide temperature range from -26 to 60°C (-15 to 140°F), allowing the sealant to be applied easily at most temperatures.

Packaging: *Dow Corning* 995 Silicone Structural Adhesive is supplied in 10.3-fl oz (305-mL) disposable plastic cartridges that fit ordinary caulking guns, 4.5-gal (17-L) bulk containers, 2-gal (7.6-L) pails and 45-gal (170-L) drums. It can be dispensed by many air-operated guns and most types of bulk dispensing equipment. A complete dispensing guide is available from Dow Corning.

Color: *Dow Corning* 995 Silicone Structural Adhesive is available in black.

Applicable Standards: *Dow Corning* 995 Silicone Structural Adhesive has been internally tested and is designed to meet or exceed the test requirements of:

- Federal Specification TT-S-001543A (COM-NBS) Class A for silicone building sealants.
- Federal Specification TT-S-00230C (COM-NBS) Class A for one-component building sealants.
- ASTM Specification C-920 Type S, Grade NS, Class 25, Use NT, G and A.

4. TECHNICAL DATA

Dow Corning 995 Silicone Structural Adhesive is virtually unaffected by sunlight, rain, sleet, snow and temperature extremes. Its unique weatherability enables it to retain its original design properties even after years of exposure.

Cured sealant will remain elastomeric in cold to -40°C (-40°F) or heat to 149°C (300°F).

5. INSTALLATION

Structural glazing applications for *Dow Corning* 995 Silicone Structural Adhesive must be reviewed by the Technical Service staff, Dow Corning Corporation, Construction Sealants Technical Service and Development.

The following instructions provide a general overview of the installation process. Complete design and installation guidelines are contained in the Silicone Structural Glazing Manual, Form No. 62-351, available from Dow Corning.

Joint Design: The design of a silicone structural joint must be prepared by the design professional, based upon industry-accepted design guidelines.

A typical silicone structural joint is illustrated in Figure 2. Basic design parameters include:

- Glue line thickness must not be less than ¼ in (6.4 mm)
- Structural bite must not be less than glue thickness
- Structural bite (in) must be greater than or equal to the smallest leg of the largest lite (ft) x windload (lb/ft^2) ÷ 480
- The structural sealant joint must be able to be filled using standard caulking practices
- The structural joint must not move during cure

These are preliminary guidelines, consistent with common industry practice.

Preparatory Work: Clean all joints and glazing pockets, removing all foreign matter and contaminants such as grease, oil, dust, water, frost, surface dirt, old sealants or glazing compounds and protective coatings.

Metal and glass surfaces should be cleaned by mechanical or solvent procedures. Detergent or soap and water treatments are not acceptable. In all cases where used, solvents should be wiped on and off with clean, oil-free and lint-free cloths. Follow solvent manufacturer's recommended safe handling procedures.

Masking: Areas adjacent to joints may be masked to ensure neat sealant lines. Do not allow masking tape to touch clean surfaces to which the silicone sealant is to adhere. Tooling should be completed in one continuous stroke immediately after sealant application and before a skin forms. Masking should be removed immediately after tooling.

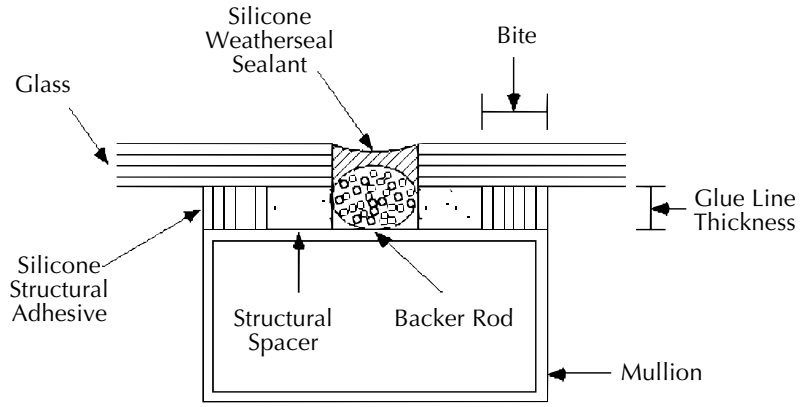
Method of Application: Install back-up material or joint filler, setting blocks, spacer shims and tapes as specified. Apply *Dow Corning* 995 Silicone Structural Adhesive in a continuous operation using a positive pressure adequate to properly fill and seal the joint. Tool or strike *Dow Corning* 995 Silicone Structural Adhesive with light pressure to spread the material against the back-up material and the joint surfaces. A tool with a concave profile is recommended to keep the sealant within the joint.

In glazing, tool the sealant applied at the sill so that precipitation and cleaning solutions will not pool.

It is imperative that uncured silicone sealants are not allowed to contact nonabradable surfaces such as polished granites, metal or glass. Because excess silicone sealant cannot be completely removed with organic or chlorinated solvents, these surfaces must be masked or extreme care taken to prevent any silicone sealant from contacting them during sealant application. Once an uncured sealant contacts the surface, it will leave a film that may change the aesthetic surface characteristics of that substrate.

In cases where uncured sealant is inadvertently applied to adjacent surfaces, the sealant should be cleaned

Figure 2: Typical Silicone Structural Joint



while still uncured, using a commercial solvent such as xylol, toluol or methyl ethyl ketone. Observe proper precautions when using flammable solvents.

Safe Handling Information – PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED. BEFORE HANDLING, READ PRODUCT AND MATERIAL SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE MATERIAL SAFETY DATA SHEET IS AVAILABLE FROM YOUR DOW CORNING REPRESENTATIVE, OR DISTRIBUTOR, OR BY WRITING TO DOW CORNING CUSTOMER SERVICE, OR BY CALLING 1-800-322-8723.

Storage and Shelf Life: When stored at or below 32°C (90°F), *Dow Corning* 995 Silicone Structural Adhesive has a shelf life of greater than one year from date of manufacture, indicated by the "Use By" date on product packaging.

6. AVAILABILITY AND COST

Availability: *Dow Corning* 995 Silicone Structural Adhesive is available throughout the United States through authorized construction sealant distributors.

Cost: Contact your local Dow Corning representative for the name of your nearest distributor. See list on the last page for the nearest Dow Corning sales office.

7. WARRANTY

Limited Weatherseal Warranty: Dow Corning Corporation produces and sells a full line of silicone construction sealants and adhesives. These products offer a variety of physical characteristics and adhesion properties. *Dow Corning* 995 Silicone Structural Adhesive is part of that line and, when used with compatible substrates and when applied within the stated shelf life and according to manufacturer's recommendations for application and joint design, Dow Corning warrants that it will perform as a watertight weatherseal for a period of 20 years from the date of purchase. In addition to maintaining the integrity of the weatherseal, the sealant will not change color when used with backup materials and substrates that have been approved for compatibility by Dow Corning, either after specific testing or as noted in a current Dow Corning publication.

Limitations: This warranty specifically excludes failure of the sealant due to:

- Natural causes such as lightning, earthquake, hurricane, tornado, fire, flooding, etc., or
- Movement of the structure resulting in stresses on the sealant that exceed Dow Corning's published specifications for elongation and/or compression for the sealant, whether due to structural settlement, design error or construction error, or
- Disintegration of the underlying substrates, or
- Mechanical damage to the sealant caused by individuals, tools or other outside agents, or
- Changes in the appearance of the sealant from the accumulation of dirt or other contaminants deposited on the sealant from the atmosphere

Remedies: In the event of a claim under this warranty, you must notify Dow Corning Corporation in writing within 30 days of the occurrence of the failure. Dow Corning's sole liability shall be to furnish sufficient silicone replacement material to restore the integrity of the weatherseal. Any labor or other cost associated with the repairs is the responsibility of the owner. DOW CORNING SHALL NOT BE LIABLE FOR AND EXPRESSLY DISCLAIMS ANY LIABILITY FOR DAMAGE TO THE CONTENTS OF THE STRUCTURE OR FOR CONSEQUENTIAL OR INCIDENTAL DAMAGE, WHETHER IN CONTRACT OR IN TORT, INCLUDING NEGLIGENCE.

THIS WARRANTY IS IN LIEU OF ALL OTHER WRITTEN OR ORAL, EXPRESS OR IMPLIED WARRANTIES AND DOW CORNING SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR PURPOSE.

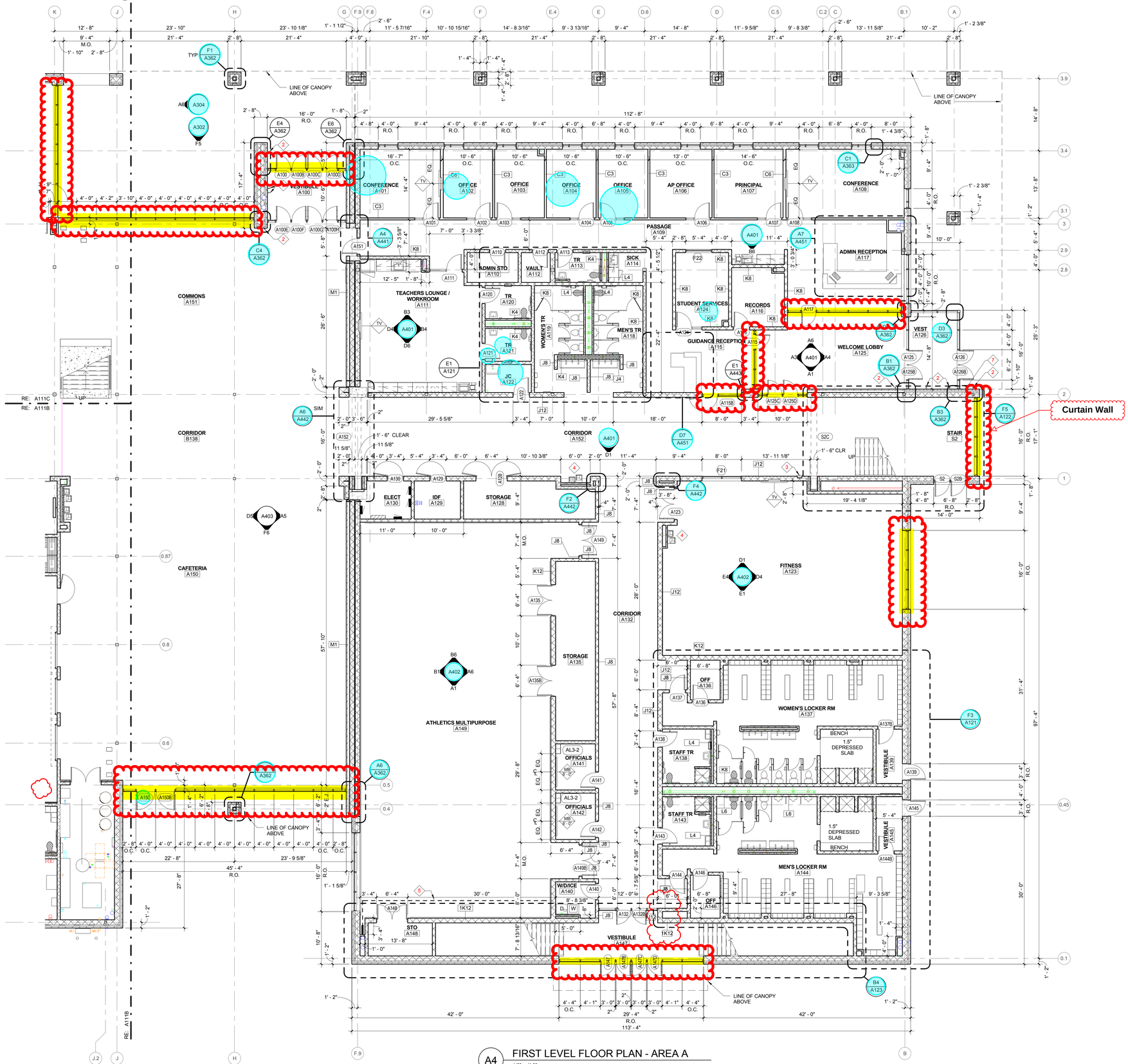
Structural Adhesion Warranty: *Dow Corning* 995 Silicone Structural Adhesive may be used as a structural adhesive under certain conditions, but Dow Corning Corporation disclaims any general adhesion warranty. Dow Corning will issue project-specific Structural Adhesion Warranties on a case-by-case basis. No Structural Adhesion Warranty will be issued until Dow Corning has reviewed the pertinent building prints and specifications and has completed adhesion and compatibility testing of the various materials to be used with *Dow Corning* 995 Silicone Structural Adhesive. For details on how to obtain the Structural Warranty, please contact your Dow Corning field representative.

8. MAINTENANCE

If sealant becomes damaged, replace the damaged portion. *Dow Corning* 995 Silicone Structural Adhesive will adhere to cured silicone sealant with only a preparatory solvent wipe to remove accumulated dirt.

9. TECHNICAL SERVICES

Complete technical information and literature are available from Dow Corning and authorized building sealant distributors. Laboratory testing and technical service are available from Dow Corning.



A4 FIRST LEVEL FLOOR PLAN - AREA A
1/8" = 1'-0"

FLOOR PLAN GENERAL NOTES

1. ALL DIMENSIONS ARE FROM COLUMN REFERENCE LINE TO FACE OF PARTITION, UNLESS NOTED OTHERWISE.
2. REFER TO CODE DRAWINGS (G0 SERIES) FOR LOCATIONS AND EXTENTS OF FIRE RATED ASSEMBLIES. IF PARTITION DISCREPENCY OCCURS BETWEEN CODE PLANS AND FLOOR PLANS, PROVIDE THE PARTITION TYPE INDICATED WITH THE MOST STRINGENT REQUIREMENTS.
3. REFER TO DRAWING G021 FOR TYPICAL MOUNTING HEIGHTS.
4. REFER TO DRAWING A421 FOR ALL INTERIOR PARTITION TYPES.
5. ALL MASONARY PARTITIONS ARE TYPE "K8" UNLESS NOTED OTHERWISE.
6. ALL GYPSUM PARTITIONS ARE TYPE "C3" UNLESS NOTED OTHERWISE.
7. ALL HOUSE KEEPING PADS INDICATED ARE FOR REFERENCE ONLY. COORDINATE ACTUAL SIZE AND LOCATION WITH APPROVED MECHANICAL AND PLUMBING SHOP DRAWINGS.
8. FIRST FLOOR REFERENCE ELEVATION 100'-0" = 902.00' DATUM ON CIVIL DRAWINGS.
9. PROVIDE STAINLESS STEEL CORNER GUARDS AT ALL GYP.BD. OUTSIDE CORNERS AT FLOOR LEVEL
10. PROVIDE FIRE RATED CONSTRUCTION AROUND ALL SHAFT ENCLOSURES.

BOARD LEGEND

MB — PROVIDE MAGNITIZED MARKER BOARD WITH MATTE FINISH UNLESS OTHERWISE NOTED, SIZED AS INDICATED. DIMENSIONS SHOWN ARE FROM EDGE OF WALL OPENING TO CENTERLINE OF BOARD. RE:G021 FOR MOUNTING HEIGHT, ELECT FOR POWER AND TECHNOLOGY FOR EQUIPMENT

TV — PROVIDE MOUNTED TELEVISION MONITOR TECHNOLOGY, 70" UNO. LOCATED AS DIMENSIONED RE:G021 FOR MOUNTING HEIGHT, ELECT FOR POWER AND TECHNOLOGY FOR EQUIPMENT

CONSTRUCTION KEYNOTES

#

1. ALUM. DISPLAY CASE SYSTEM
2. WALL MOUNTED BARRIER FREE AUTOMATIC DOOR OPENER ACTUATOR SWITCH
3. SEMI-RECESSED FIRE EXTINGUISHER CABINET
4. ELECTRIC WATER COOLER WITH BOTTLE FILL STATION, RE: PLUMBING DRAWINGS
5. OWNER PROVIDED, CONTRACTOR INSTALLED ARCHERY CURTAIN AND TRACK
6. OPERABLE WALL PARTITION AND TRACK
7. WALL MOUNTED RECESSED KNOX BOX
8. ROOF ACCESS LADDER, RE: DETAILS ON A357
9. TOP ROLLING GYM DIVIDER CURTAIN
10. CEILING SUPPORTED FOLDING BASKETBALL BACKSTOP, TYP.
11. TELESCOPING BLEACHER SYSTEM
12. CORRIDOR METAL LOCKERS, RE: INTERIOR ELEVATIONS FOR TYPE AND CONFIGURATION
13. CONFIRM ELEVATOR ROUGH OPENING REQUIREMENTS WITH APPROVED ELEVATOR SHOP DRAWINGS
14. ELECTRONIC SCOREBOARD
15. 6" DIA. CONC. FILLED STEEL BOLLARD
16. 4" HIGH CONC. HOUSE KEEPING PAD TYP. 6" HIGH CONC HOUSE KEEPING PAD AT AHU'S, RE: STRUCTURAL AND MECHANICAL DRAWINGS
17. 4" HIGH CONC. CURB AROUND PERIMETER OF SPACE AND ALL FLOOR PENETRATIONS.
18. GALV. STEEL BAR GRATING PLATFORM AND STEPS, RE: DETAILS ON A357
19. PRE-FINISHED METAL GATE WITH LATCHING HARDWARE
20. WRESTLING MAT HOIST
21. PROVIDE 20'x20' NEOPRENE MEMBRANE OVER ROOF MEMBRANE AT KITCHEN EXHAUST HOODS, ADHERE AND FLASH NEOPRENE TO ROOF MEMBRANE PER ROOF MANUF RECOMENDATIONS.
22. LOCKER ADA BENCH - WALL MOUNTED; 20" MIN. DEPTH
23. LOCKER ROOM FREESTANDING BENCH

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Final Plans for Bidding and Construction

PORTAGE PUBLIC SCHOOLS

Portage Public Schools
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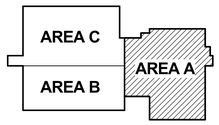
PORTAGE, MICHIGAN

DRAWN: Author
CHECKED: Checker
SCALE: As indicated

ISSUE:

2017.03.24	CONSTRUCTION
2017.06.12	PR 01
2017.10.26	PR 06



KEY PLAN (NTS)

SHEET TITLE:
FIRST LEVEL FLOOR PLAN - AREA A

Project #: 214100247

A111A

10/30/2017 10:00:12 AM
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MUSIC CASEWORK SCHEDULE				
Model	Manufacturer	Description	Count	Comments
MC-01	WENGER	ULTRASTOR INSTRUMENT CABINET MODEL #01	5	
MC-02	WENGER	ULTRASTOR INSTRUMENT CABINET MODEL #02	1	
MC-04	WENGER	ULTRASTOR INSTRUMENT CABINET MODEL #12	5	
MC-05	WENGER	ULTRASTOR INSTRUMENT CABINET MODEL #05	9	
MC-10	WENGER	ULTRASTOR INSTRUMENT CABINET MODEL #10	6	
MC-11	WENGER	ULTRASTOR INSTRUMENT CABINET MODEL #11	5	
MC-12	WENGER	ULTRASTOR INSTRUMENT CABINET MODEL #12	1	
MC-15	WENGER	ULTRASTOR INSTRUMENT CABINET MODEL #15	3	
MR-02	WENGER	STRINGED INSTRUMENT MOBILE STORAGE RACK	2	

BOARD LEGEND

MB ##
PROVIDE MAGNITIZED MARKER BOARD WITH MATTE FINISH UNLESS OTHERWISE NOTED, SIZED AS INDICATED. DIMENSIONS SHOWN ARE FROM EDGE OF WALL OPENING TO CENTERLINE OF BOARD. RE:G021 FOR MOUNTING HEIGHT, ELECT FOR POWER AND TECHNOLOGY FOR EQUIPMENT

TV
PROVIDE MOUNTED TELEVISION MONITOR TECHNOLOGY, 70" UNO. LOCATED AS DIMENSIONED RE:G021 FOR MOUNTING HEIGHT, ELECT FOR POWER AND TECHNOLOGY FOR EQUIPMENT

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10. PROVIDE FIRE RATED CONSTRUCTION AROUND ALL SHAFT ENCLOSURES.

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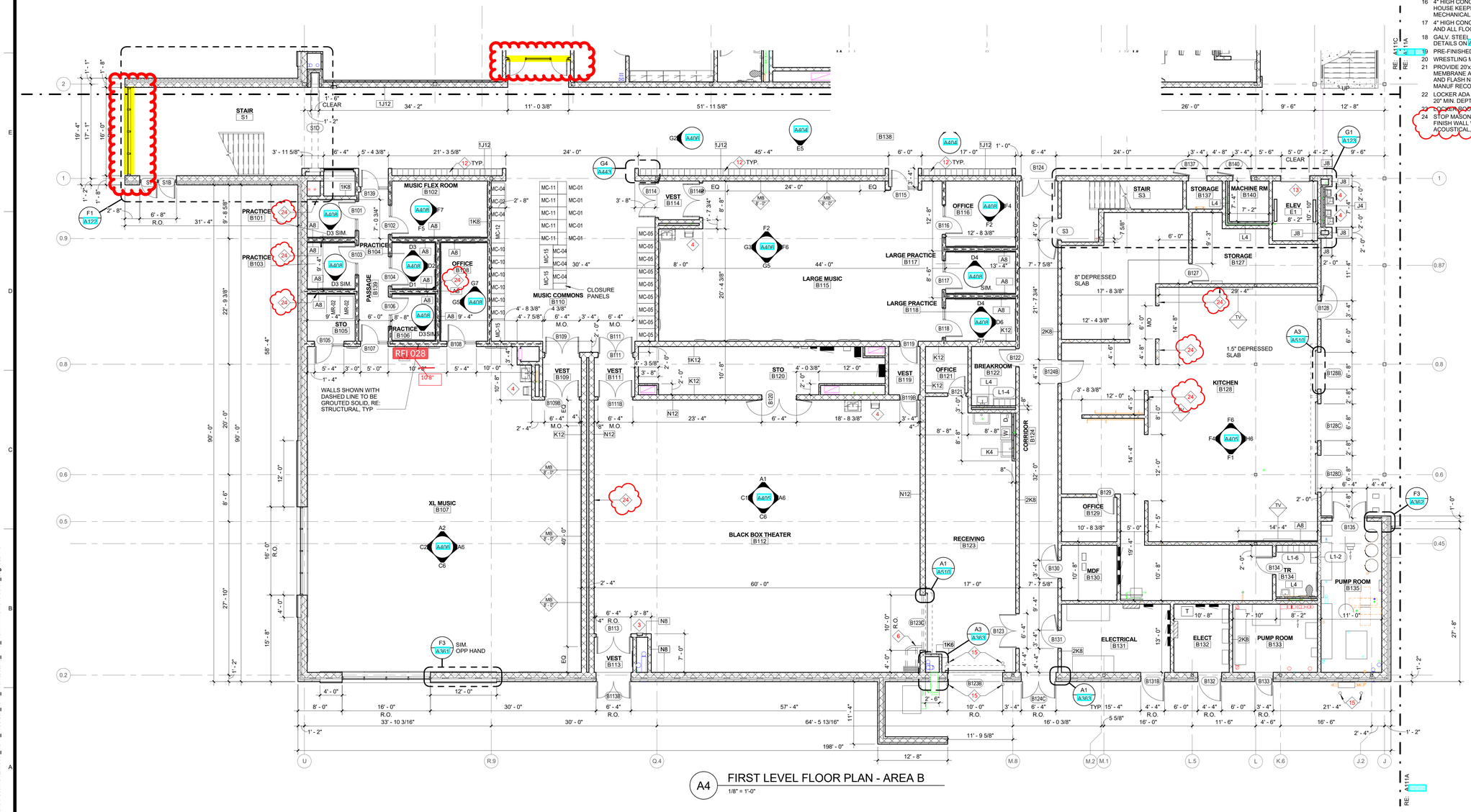

A4 FIRST LEVEL FLOOR PLAN - AREA B
1/8" = 1'-0"

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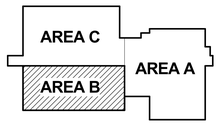
PORTAGE, MICHIGAN

DRAWN: **Author**
CHECKED: **Checker**
SCALE: **As indicated**

ISSUE:

2017.03.24	CONSTRUCTION
2017.06.29	PR 02
2017.08.11	PR 03
2017.10.06	PR 05
2017.10.26	PR 06
2018.12.07	PR 15



KEY PLAN (NTS)

SHEET TITLE:
FIRST LEVEL FLOOR PLAN - AREA B

A111B

Project #: 214100247

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BOARD LEGEND

MB ##
PROVIDE MAGNITIZED MARKER BOARD WITH MATTE FINISH UNLESS OTHERWISE NOTED, SIZED AS INDICATED. DIMENSIONS SHOWN ARE FROM EDGE OF WALL OPENING TO CENTERLINE OF BOARD . RE:G021 FOR MOUNTING HEIGHT. ELECT FOR POWER AND TECHNOLOGY FOR EQUIPMENT

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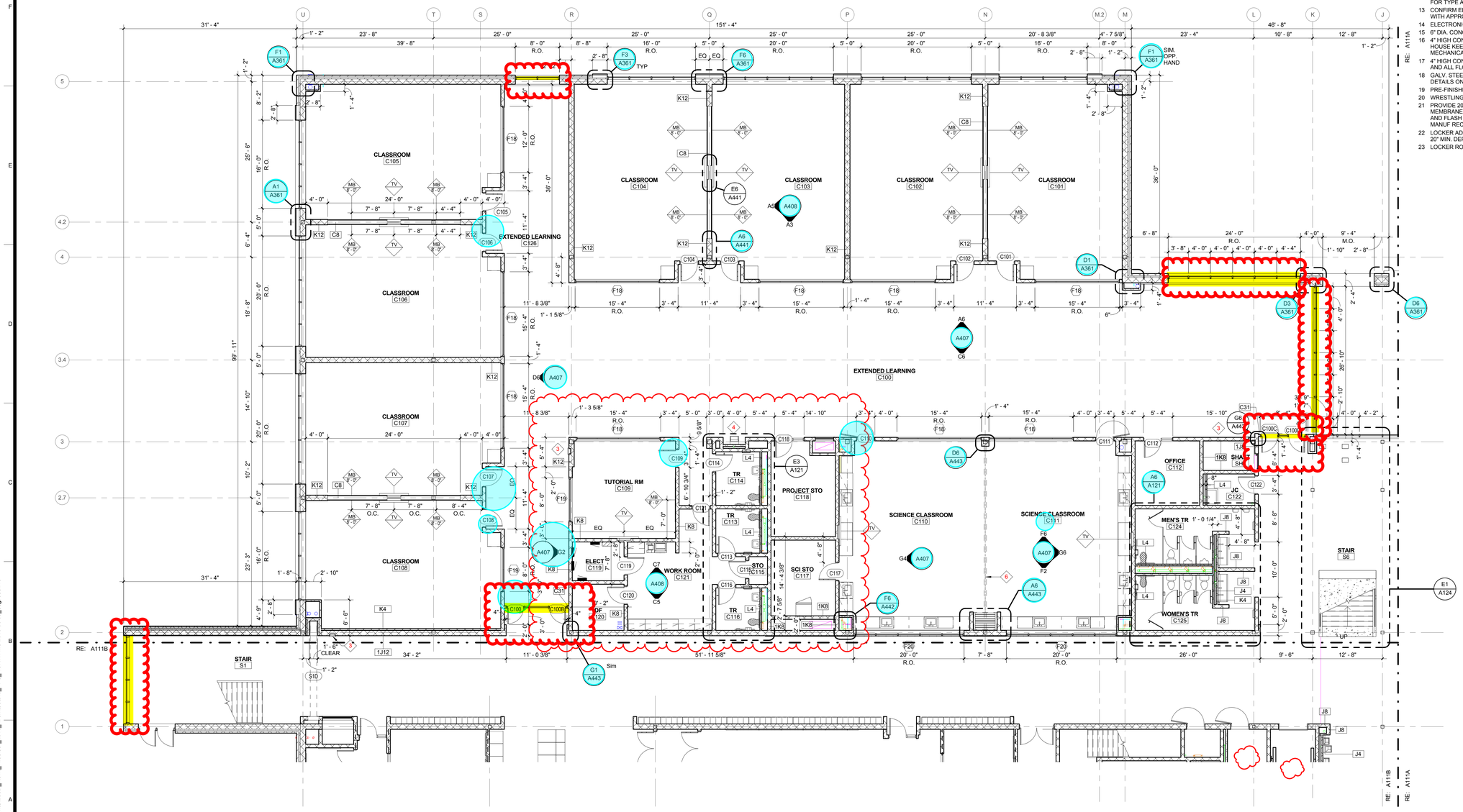

A4 FIRST LEVEL FLOOR PLAN - AREA C
1/8" = 1'-0"

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PORTAGE, MICHIGAN

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SCALE: **As indicated**

ISSUE:

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2017.06.12	PR 01
2017.06.29	PR 02
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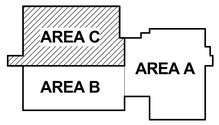

KEY PLAN (NTS)

SHEET TITLE:
FIRST LEVEL FLOOR PLAN - AREA C

Project #: 214100247

A111C

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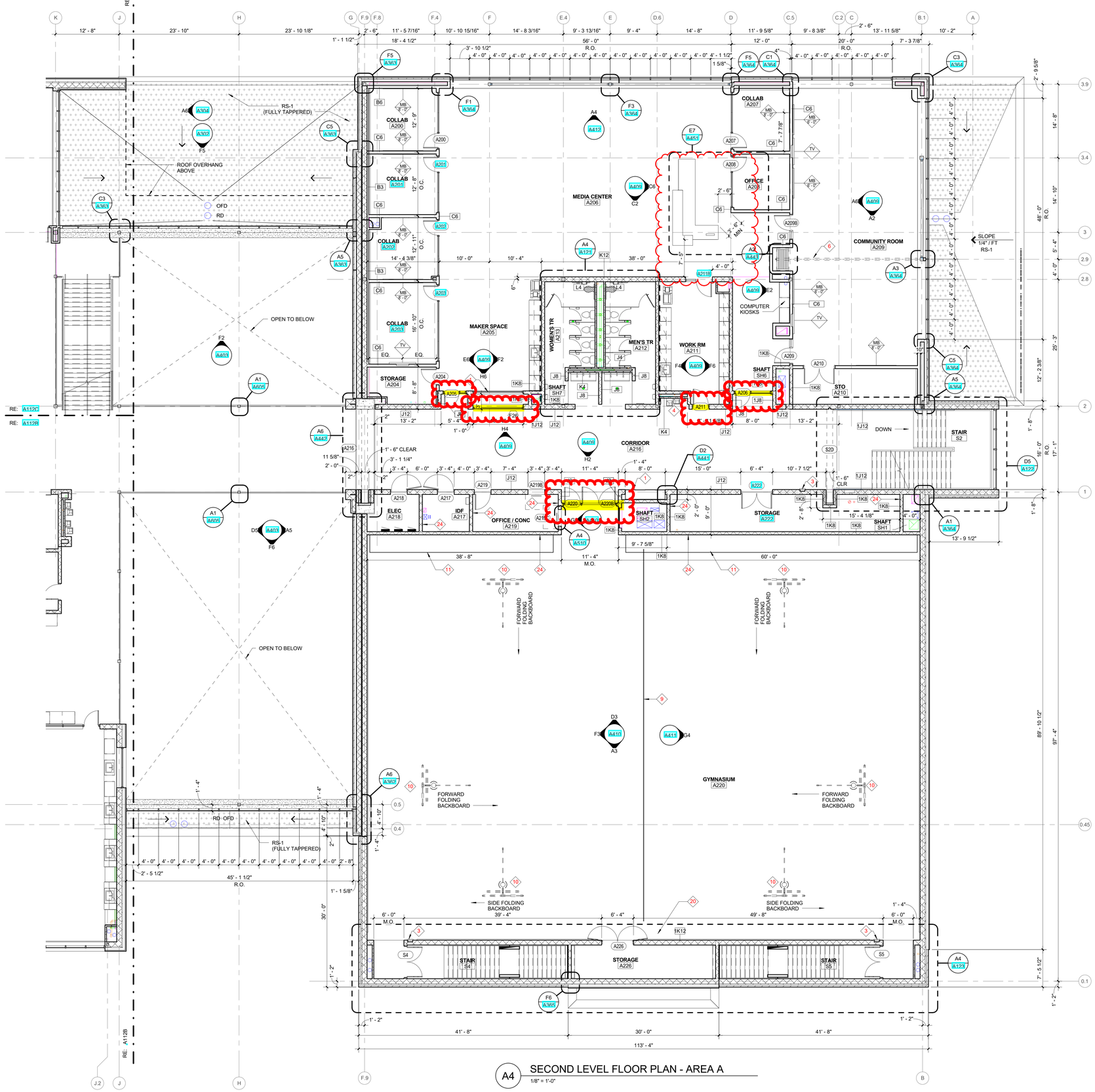

A4 SECOND LEVEL FLOOR PLAN - AREA A
1/8" = 1'-0"

FLOOR PLAN GENERAL NOTES

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TV — PROVIDE MOUNTED TELEVISION MONITOR TECHNOLOGY, 70" UNO. LOCATED AS DIMENSIONED RE:G021 FOR MOUNTING HEIGHT, ELECT FOR POWER AND TECHNOLOGY FOR EQUIPMENT

ROOF PLAN GENERAL NOTES

1. REFER TO MEP DRAWINGS FOR ROOF TOP EQUIPMENT NOT SHOWN. MEP EQUIPMENT DEPICTED ON THIS DRAWING IS FOR GENERAL ARCHITECTURAL INFORMATION ONLY. REFER TO MEP DRAWINGS FOR ADDITIONAL REQUIREMENTS AND COORDINATION. REFER TO STRUCTURAL DOCUMENTS FOR EQUIPMENT SUPPORTS.
2. PROVIDE WALKWAY PADS AT PIPE SUPPORT LOCATIONS. REFER TO MEP DRAWINGS FOR PIPE SUPPORT LOCATIONS AND TYPE. PAD SHALL BE MINIMUM 2" WIDER THAN SUPPORT IN ALL DIRECTIONS.
3. PROVIDE MANUFACTURER STANDARD WALKWAY PADS AS INDICATED AND AT SERVICE SIDE OF ALL MECHANICAL EQUIPMENT, WITH 2" SEPARATIONS BETWEEN PADS - REFER TO MEP DRAWINGS FOR NUMBER AND LOCATION OF ROOF TOP MECHANICAL EQUIPMENT. PROVIDE MFR STANDARD WALKWAY PADS AT TOP AND BOTTOM OF ALL ACCESS LADDERS.
4. VENT STACKS AND OTHER PIPES REQUIRE A MINIMUM 12" CLEARANCE ON ALL SIDES FROM WALLS, CURBS, AND OTHER PROJECTIONS TO FACILITATE PROPER FLASHING.
5. PROVIDE TWO WAY TAPERED INSULATION CRICKETS AT HIGH SIDE OF ALL ROOF CURBS WIDER THAN 4'-0".
6. REFER TO DRAWING A341 FOR ROOF ASSEMBLY TYPES AND FLASHING PROFILES.
7. REFER TO DRAWING A115R FOR TYPICAL ROOF DETAILS.

ROOF LEGEND

- TAPERED INSULATION
- SLOPE 1/4" / FT — SLOPE DIRECTION CREATED BY STRUCTURE
- SLOPE DIRECTION CREATED BY TAPERED INSULATION
- OVERFLOW DRAIN (OFD)
- ROOF DRAIN (RD)
- ROOF MEMBRANE WALKWAY PAD

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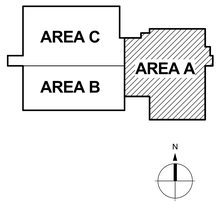
2018.10.16	PR 13
2018.12.07	PR 15
2019.04.05	PR 17



KEY PLAN (NTS)

SHEET TITLE:

SECOND LEVEL FLOOR PLAN - AREA A

Project #: **214100247**

A112A

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STEAM EQUIPMENT SCHEDULE																
TAG	DESCRIPTION	QTY	MANUFACTURER	NEW	EXISTING	HEIGHT (IN)	LENGTH (IN)	WIDTH (IN)	WEIGHT (LBS)	110V	115V	120V	220v	230V	240V	EXHAUST
	STATIONARY TOOLS															
EQ-1	15" BANDSAW	2	JET		X	74"	29-1/2"	32"	382		X			X		X
EQ-2	20" BANDSAW	1	JET		X	74"	29-1/2"	32"	382		X			X		X
EQ-3	17" FLOORSTANDING DRILL PRESS	2	JET		X	42-7/8"	14"	19"	187		X					
EQ-4	15" BENCHTOP DRILL PRESS	2	JET		X	18-5/16"	12-1/2"	17"	154		X					
EQ-5	12" SLIDING DUEL BEVEL COMPOUND MITER SAW	2	JET		X	18"	23-1/2"	17-7/16"	77			X				
EQ-6	10" x 15" VARIABLE SPEED WOOD LATHE	3	JET		X	14-1/2"	35"	18"	77		X					
EQ-7	BELT/DISC SANDER	1	JET		X	34-1/2"	35"	22"	55		X					
EQ-8	BENCHTOP OSCILLATING SPINDLE SANDER	1	JET		X	18-3/4"	14-1/2"	14-1/2"	77	X						
EQ-9	FLOOR MODEL OSCILLATING SPINDLE SANDER	1	JET		X	44-3/16"	24-1/2"	24-1/2"	216		X					
EQ-10	20" PLANER	1	LAGUNA		X	34"	20"	55"	830				X			
EQ-11	18" x 40" LATHE	3	JET		X	20"	73"	52-1/2"	418					X		
EQ-12	4X4 CNC MACHINE	1	LAGUNA		X	55"	80"	73"	425				X			
EQ-13	22" SCROLL SAW ON STAND	1	JET		X	48"	33"	25-1/2"	68			X				
EQ-14	8" JOINTER	1	LAGUNA		X	32"	75"	8"	510				X			
EQ-15	16-32 DRUM SANDER	1	JET		X	39-5/8"	49-15/16"	20"	156		X					
EQ-16	INDUSTRIAL SAW STOP TABLE SAW	1	SAWSTOP		X	34"	34"	44"	530					X		
EQ-17	GRINDER WHEEL	1	JET		X	12-1/2"	12"	20-1/4"	57		X					
EQ-18	EDGE BELT SANDER	1	JET		X	44"	51"	26-1/2"	258		X			X		
	DIGITAL LAB															
EQ-19	FUSION 3 F400 3D PRINTER	4	FUSION3		X	26"	28"	31"	120	X						
EQ-20	LASER CUTTER	1	EPILOG		X	40"	32"	37"	180	X					X	
EQ-21	ENCLOSED CNC MACHINE	2	CARVEY		X	21"	17"	22"	70	X						
EQ-22	SOLDERING IRONS	15			X											
EQ-23	DESKTOP COMPUTERS	30			X											
EQ-24	TEACHER STATION COMPUTER	1			X											

BOARD LEGEND

MB ##
PROVIDE MAGNITIZED MARKER BOARD WITH MATTE FINISH UNLESS OTHERWISE NOTED, SIZED AS INDICATED. DIMENSIONS SHOWN ARE FROM EDGE OF WALL OPENING TO CENTERLINE OF BOARD. RE:G021 FOR MOUNTING HEIGHT, ELECT FOR POWER AND TECHNOLOGY FOR EQUIPMENT

TV
PROVIDE MOUNTED TELEVISION MONITOR TECHNOLOGY. 70" UNO. LOCATED AS DIMENSIONED RE:G021 FOR MOUNTING HEIGHT, ELECT FOR POWER AND TECHNOLOGY FOR EQUIPMENT

CONSTRUCTION KEYNOTES

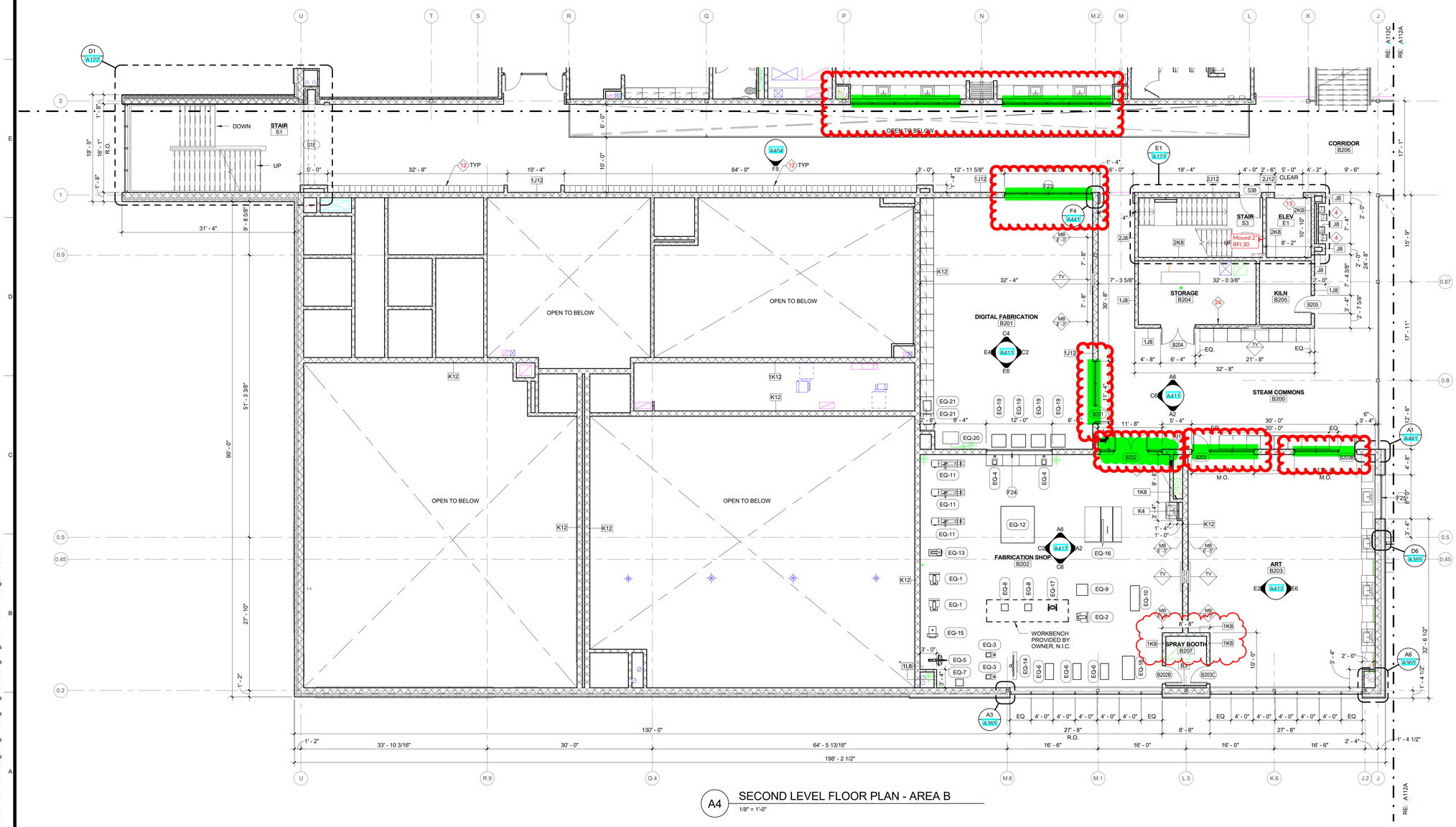
#

1 ALUM. DISPLAY CASE SYSTEM
2 WALL MOUNTED BARRIER FREE AUTOMATIC DOOR OPENER ACTUATOR SWITCH
3 SEMI-RECESSED FIRE EXTINGUISHER CABINET
4 ELECTRIC WATER COOLER WITH BOTTLE FILL STATION, RE: PLUMBING DRAWINGS
5 OWNER PROVIDED, CONTRACTOR INSTALLED ARCHERY CURTAIN AND TRACK
6 OPERABLE WALL PARTITION AND TRACK
7 WALL MOUNTED RECESSED KNOX BOX
8 ROOF ACCESS LADDER, RE: DETAILS ON A357
9 TOP ROLLING GYM DIVIDER CURTAIN
10 CEILING SUPPORTED FOLDING BASKETBALL BACKSTOP, TYP.
11 TELESCOPING BLEACHER SYSTEM
12 CORRIDOR METAL LOCKERS, RE: INTERIOR ELEVATIONS FOR TYPE AND CONFIGURATION
13 CONFIRM ELEVATOR ROUGH OPENING REQUIREMENTS WITH APPROVED ELEVATOR SHOP DRAWINGS
14 ELECTRONIC SCOREBOARD
15 6" DIA. CONC. FILLED STEEL BOLLARD
16 4" HIGH CONC. HOUSE KEEPING PAD TYP. 6" HIGH CONC HOUSE KEEPING PAD AT AHU'S, RE: STRUCTURAL AND MECHANICAL DRAWINGS
17 4" HIGH CONC. CURB AROUND PERIMETER OF SPACE AND ALL FLOOR PENETRATIONS.
18 GALV. STEEL BAR GRATING PLATFORM AND STEPS, RE: DETAILS ON A357
19 PRE-FINISHED METAL GATE WITH LATCHING HARDWARE
20 WRESTLING MAT HOIST
21 PROVIDE 20'x20' NEOPRENE MEMBRANE OVER ROOF MEMBRANE AT KITCHEN EXHAUST HOODS, ADHERE AND FLASH NEOPRENE TO ROOF MEMBRANE PER ROOF MANUF RECOMENDATIONS.
22 LOCKER ADA BENCH - WALL MOUNTED; 20" MIN. DEPTH
23 LOCKER ROOM FREESTANDING BENCH
24 STOP MASONRY AT FIRST FULL COURSE BELOW JOISTS. FINISH WALL WITH DRYWALL TO DECK. MAINTAIN ANY ACOUSTICAL, FIRE, AND SMOKE RATINGS AS REQUIRED.

FLOOR PLAN GENERAL NOTES

1 ALL DIMENSIONS ARE FROM COLUMN REFERENCE LINE TO FACE OF PARTITION, UNLESS NOTED OTHERWISE.
2 REFER TO CODE DRAWINGS (G0 SERIES) FOR LOCATIONS AND EXTENTS OF FIRE RATED ASSEMBLIES. IF PARTITION DISCREPENCY OCCURS BETWEEN CODE PLANS AND FLOOR PLANS, PROVIDE THE PARTITION TYPE INDICATED WITH THE MOST STRINGENT REQUIREMENTS.
3 REFER TO DRAWING G021 FOR TYPICAL MOUNTING HEIGHTS.
4 REFER TO DRAWING A421 FOR ALL INTERIOR PARTITION TYPES.
5 ALL MASONARY PARTITIONS ARE TYPE "K8" UNLESS NOTED OTHERWISE.
6 ALL GYPSUM PARTITIONS ARE TYPE "C3" UNLESS NOTED OTHERWISE.
7 ALL HOUSE KEEPING PADS INDICATED ARE FOR REFERENCE ONLY. COORDINATE ACTUAL SIZE AND LOCATION WITH APPROVED MECHANICAL AND PLUMBING SHOP DRAWINGS.
8 FIRST FLOOR REFERENCE ELEVATION 100'-0" = 902.00' DATUM ON CIVIL DRAWINGS.
9 PROVIDE STAINLESS STEEL CORNER GUARDS AT ALL GYP.BD. OUTSIDE CORNERS AT FLOOR LEVEL
10 PROVIDE FIRE RATED CONSTRUCTION AROUND ALL SHAFT ENCLOSURES.

All Ballistic Film



A4 SECOND LEVEL FLOOR PLAN - AREA B
1/8" = 1'-0"

Stantec
2338 COOLIDGE
SUITE 100
BERKLEY, MICHIGAN 48072
P 248.336.4700
F 248.336.4701

Final Plans for Bidding and Construction

PORTAGE PUBLIC SCHOOLS

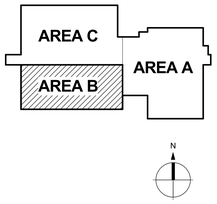
Portage Public Schools
THE FUTURE LEARNS HERE

NORTH MIDDLE SCHOOL
PORTAGE, MICHIGAN

DRAWN: Author
CHECKED: Checker
SCALE: As indicated

ISSUE:

2017.03.24	CONSTRUCTION
2017.06.29	PR 02
2017.08.11	PR 03
2017.10.06	PR 05
2017.10.26	PR 06
2018.03.02	PR 08
2018.12.07	PR 15
2019.04.12	PR 17



KEY PLAN (NTS)

SHEET TITLE:
SECOND LEVEL FLOOR PLAN - AREA B

A112B

Project #: 214100247

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ROOF LEGEND

- TAPERED INSULATION
- SLOPE 1/4" / FT — SLOPE DIRECTION CREATED BY STRUCTURE
- SLOPE DIRECTION CREATED BY TAPERED INSULATION
- OVERFLOW DRAIN (OFD)
- ROOF DRAIN (RD)
- ROOF MEMBRANE WALKWAY PAD

CONSTRUCTION KEYNOTES

#

1 ALUM. DISPLAY CASE SYSTEM
2 WALL MOUNTED BARRIER FREE AUTOMATIC DOOR OPENER ACTUATOR SWITCH
3 SEMI-RECESSED FIRE EXTINGUISHER CABINET
4 ELECTRIC WATER COOLER WITH BOTTLE FILL STATION, RE: PLUMBING DRAWINGS
5 OWNER PROVIDED, CONTRACTOR INSTALLED ARCHERY CURTAIN AND TRACK
6 OPERABLE WALL PARTITION AND TRACK
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8 ROOF ACCESS LADDER, RE: DETAILS ON A357
9 TOP ROLLING GYM DIVIDER CURTAIN
10 CEILING SUPPORTED FOLDING BASKETBALL BACKSTOP, TYP.
11 TELESCOPING BLEACHER SYSTEM
12 CORRIDOR METAL LOCKERS, RE: INTERIOR ELEVATIONS FOR TYPE AND CONFIGURATION
13 CONFIRM ELEVATOR ROUGH OPENING REQUIREMENTS WITH APPROVED ELEVATOR SHOP DRAWINGS
14 ELECTRONIC SCOREBOARD
15 6" DIA. CONC. FILLED STEEL BOLLARD
16 4" HIGH CONC. HOUSE KEEPING PAD TYP. 6" HIGH CONC HOUSE KEEPING PAD AT AHU'S, RE: STRUCTURAL AND MECHANICAL DRAWINGS
17 4" HIGH CONC. CURB AROUND PERIMETER OF SPACE AND ALL FLOOR PENETRATIONS.
18 GALV. STEEL BAR GRATING PLATFORM AND STEPS, RE: DETAILS ON A357
19 PRE-FINISHED METAL GATE WITH LATCHING HARDWARE
20 WRESTLING MAT HOIST
21 PROVIDE 20'x20' NEOPRENE MEMBRANE OVER ROOF MEMBRANE AT KITCHEN EXHAUST HOODS, ADHERE AND FLASH NEOPRENE TO ROOF MEMBRANE PER ROOF MANUF RECOMENDATIONS.
22 LOCKER ADA BENCH - WALL MOUNTED; 20" MIN. DEPTH
23 LOCKER ROOM FREESTANDING BENCH

ROOF PLAN GENERAL NOTES

1 REFER TO MEP DRAWINGS FOR ROOF TOP EQUIPMENT NOT SHOWN. MEP EQUIPMENT DEPICTED ON THIS DRAWING IS FOR GENERAL ARCHITECTURAL INFORMATION ONLY. REFER TO MEP DRAWINGS FOR ADDITIONAL REQUIREMENTS AND COORDINATION. REFER TO STRUCTURAL DOCUMENTS FOR EQUIPMENT SUPPORTS.
2 PROVIDE WALKWAY PADS AT PIPE SUPPORT LOCATIONS. REFER TO MEP DRAWINGS FOR PIPE SUPPORT LOCATIONS AND TYPE. PAD SHALL BE MINIMUM 2" WIDER THAN SUPPORT IN ALL DIRECTIONS.
3 PROVIDE MANUFACTURER STANDARD WALKWAY PADS AS INDICATED AND AT SERVICE SIDE OF ALL MECHANICAL EQUIPMENT, WITH 2" SEPARATIONS BETWEEN PADS - REFER TO MEP DRAWINGS FOR NUMBER AND LOCATION OF ROOF TOP MECHANICAL EQUIPMENT. PROVIDE MFR.STANDARD WALKWAY PADS AT TOP AND BOTTOM OF ALL ACCESS LADDERS.
4 VENT STACKS AND OTHER PIPES REQUIRE A MINIMUM 12" CLEARANCE ON ALL SIDES FROM WALLS, CURBS, AND OTHER PROJECTIONS TO FACILITATE PROPER FLASHING.
5 PROVIDE TWO WAY TAPERED INSULATION CRICKETS AT HIGH SIDE OF ALL ROOF CURBS WIDER THAN 4'-0".
6 REFER TO DRAWING A341 FOR ROOF ASSEMBLY TYPES AND FLASHING PROFILES.
7 REFER TO DRAWING A1158 FOR TYPICAL ROOF DETAILS.

FLOOR PLAN GENERAL NOTES

1 ALL DIMENSIONS ARE FROM COLUMN REFERENCE LINE TO FACE OF PARTITION, UNLESS NOTED OTHERWISE.
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3 REFER TO DRAWING G021 FOR TYPICAL MOUNTING HEIGHTS.
4 REFER TO DRAWING A421 FOR ALL INTERIOR PARTITION TYPES.
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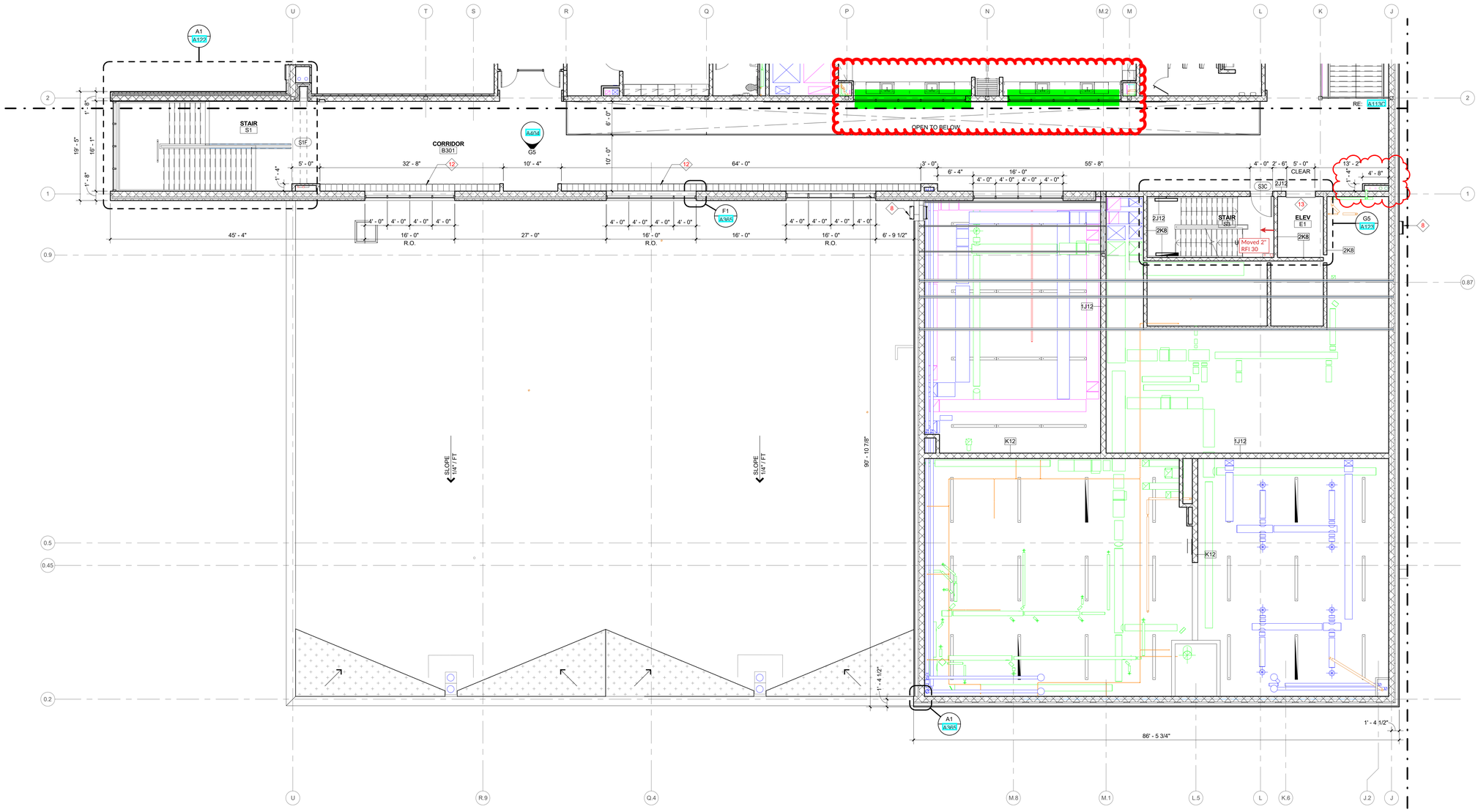
9 PROVIDE STAINLESS STEEL CORNER GUARDS AT ALL GYP.BD. OUTSIDE CORNERS AT FLOOR LEVEL.
10 PROVIDE FIRE RATED CONSTRUCTION AROUND ALL SHAFT ENCLOSURES.



A4 THIRD LEVEL FLOOR PLAN - AREA B
1/8" = 1'-0"

Stantec
2338 COOLIDGE
SUITE 100
BERKLEY, MICHIGAN 48072
P 248.336.4700
F 248.336.4701

Final Plans for Bidding and Construction

PORTAGE PUBLIC SCHOOLS

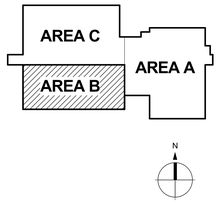
Portage Public Schools
THE FUTURE LEARNS HERE

NORTH MIDDLE SCHOOL
PORTAGE, MICHIGAN

DRAWN: **Author**
CHECKED: **Checker**
SCALE: **1/8" = 1'-0"**

ISSUE:

2017.03.24	CONSTRUCTION
2018.06.14	PR 11



KEY PLAN (NTS)

SHEET TITLE:
THIRD LEVEL FLOOR PLAN - AREA B

Project #: **214100247**

A113B

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MUSIC CASEWORK SCHEDULE				
Model	Manufacturer	Description	Count	Comments
MC-01	WENGER	ULTRASTOR INSTRUMENT CABINET MODEL #01	5	
MC-02	WENGER	ULTRASTOR INSTRUMENT CABINET MODEL #02	1	
MC-04	WENGER	ULTRASTOR INSTRUMENT CABINET MODEL #12	5	
MC-05	WENGER	ULTRASTOR INSTRUMENT CABINET MODEL #05	9	
MC-10	WENGER	ULTRASTOR INSTRUMENT CABINET MODEL #10	6	
MC-11	WENGER	ULTRASTOR INSTRUMENT CABINET MODEL #11	5	
MC-12	WENGER	ULTRASTOR INSTRUMENT CABINET MODEL #12	1	
MC-15	WENGER	ULTRASTOR INSTRUMENT CABINET MODEL #15	3	
MR-02	WENGER	STRINGED INSTRUMENT MOBILE STORAGE RACK	2	

BOARD LEGEND

MB ##
PROVIDE MAGNITIZED MARKER BOARD WITH MATTE FINISH UNLESS OTHERWISE NOTED, SIZED AS INDICATED. DIMENSIONS SHOWN ARE FROM EDGE OF WALL OPENING TO CENTERLINE OF BOARD . RE:G021 FOR MOUNTING HEIGHT, ELECT FOR POWER AND TECHNOLOGY FOR EQUIPMENT

TV
PROVIDE MOUNTED TELEVISION MONITOR TECHNOLOGY, 70" UNO. LOCATED AS DIMENSIONED RE:G021 FOR MOUNTING HEIGHT, ELECT FOR POWER AND TECHNOLOGY FOR EQUIPMENT

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9. PROVIDE STAINLESS STEEL CORNER GUARDS AT ALL GYP.BD. OUTSIDE CORNERS AT FLOOR LEVEL.
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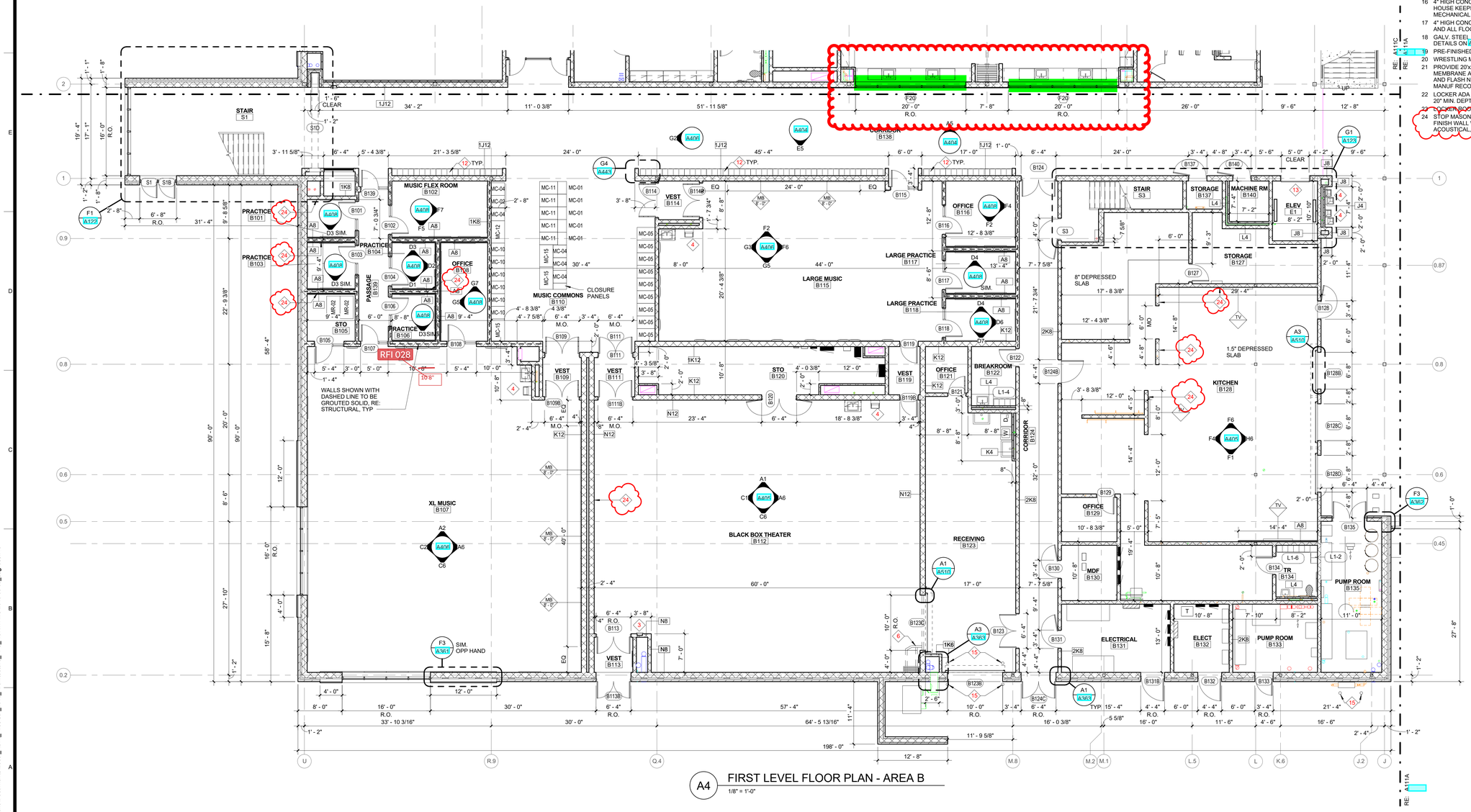
21. PROVIDE 20'x20' NEOPRENE MEMBRANE OVER ROOF MEMBRANE AT KITCHEN EXHAUST HOODS, ADHERE AND FLASH NEOPRENE TO ROOF MEMBRANE PER ROOF MANUF RECOMENDATIONS.
22. LOCKER ADA BENCH - WALL MOUNTED; 20" MIN. DEPTH
23. LOCKER ROOM FREESTANDING BENCH
24. STOP MASONRY AT FIRST FULL COURSE BELOW JOISTS. FINISH WALL WITH DRYWALL TO DECK. MAINTAIN ANY ACOUSTICAL, FIRE, AND SMOKE RATINGS AS REQUIRED.



A4 FIRST LEVEL FLOOR PLAN - AREA B
1/8" = 1'-0"

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SUITE 100
BERKLEY, MICHIGAN 48072
P 248.336.4700
F 248.336.4701

Final Plans for Bidding and Construction

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Portage Public Schools
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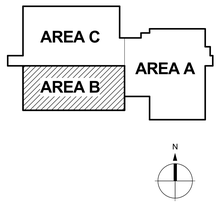
NORTH MIDDLE SCHOOL
PORTAGE, MICHIGAN

DRAWN: **Author**
CHECKED: **Checker**
SCALE: **As indicated**

ISSUE:

2017.03.24	CONSTRUCTION
2017.06.29	PR 02
2017.08.11	PR 03
2017.10.06	PR 05
2017.10.26	PR 06
2018.12.07	PR 15



KEY PLAN (NTS)

SHEET TITLE:
FIRST LEVEL FLOOR PLAN - AREA B

A111B

Project #: 214100247

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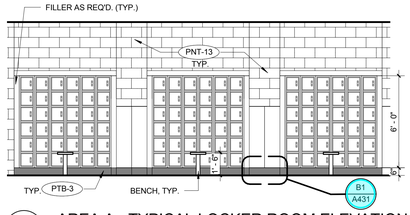
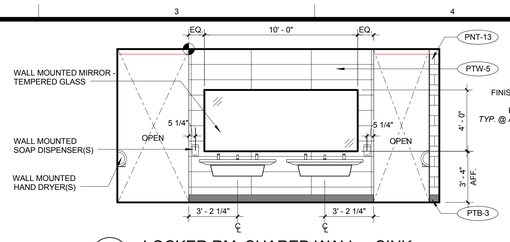
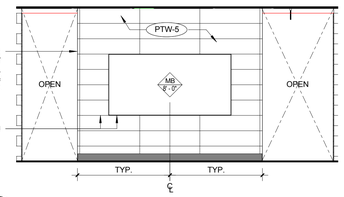


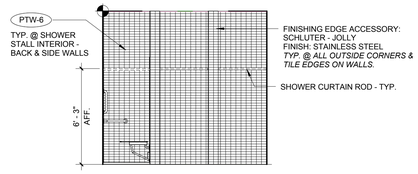
H1 AREA A - TYPICAL LOCKER ROOM ELEVATION
1/4" = 1'-0" REFERENCED ON F3 / A121



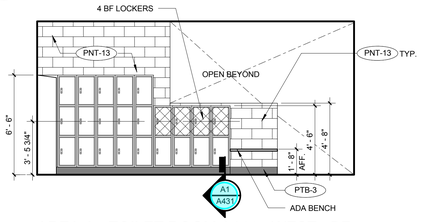
H3 LOCKER RM. SHARED WALL - SINK
1/4" = 1'-0" REFERENCED ON F3 / A121



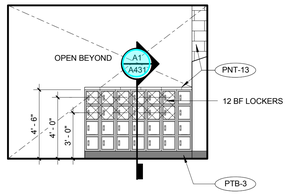
H4 LOCKER RM. SHARED WALL
1/4" = 1'-0" REFERENCED ON F3 / A121



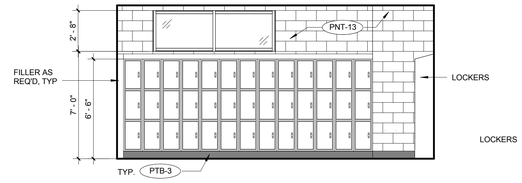
H6 LOCKER RM SHOWER
1/4" = 1'-0" REFERENCED ON F3 / A121



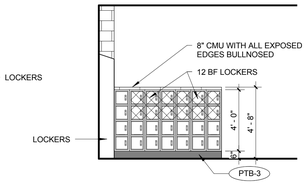
G2 AREA A - TOILET ROOM A144 - WEST - BF LOCKERS
1/4" = 1'-0" REFERENCED ON F3 / A121



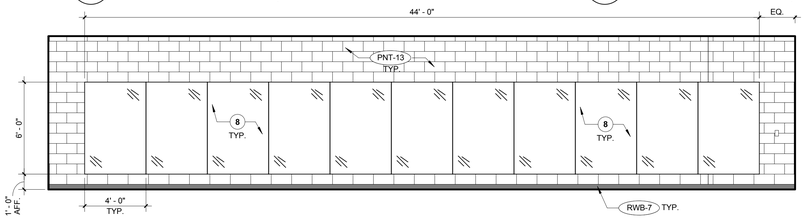
G3 TOILET ROOM A144 - EAST SMALL BF LOCKERS
1/4" = 1'-0" REFERENCED ON F3 / A121



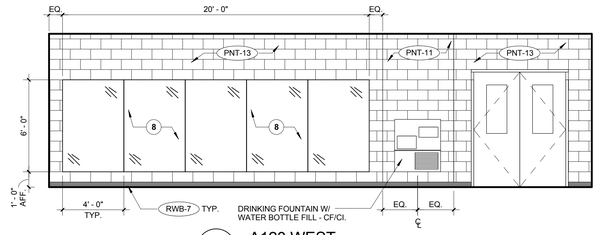
G4 AREA A - TOILET ROOM A144 - EAST - BF LOCKERS
1/4" = 1'-0" REFERENCED ON F3 / A121



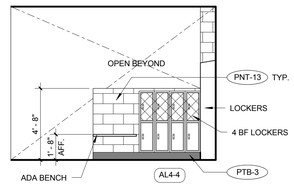
G6 TOILET RM. A137 -SMALL LOCKERS
1/4" = 1'-0" REFERENCED ON F3 / A121



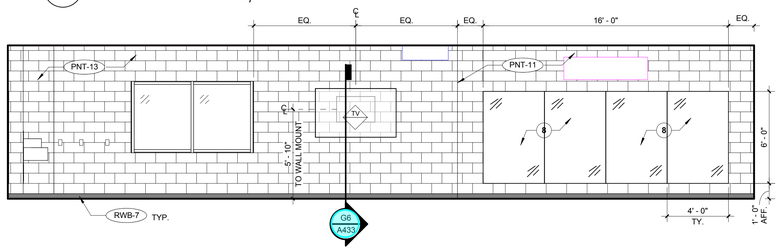
E1 A123 SOUTH
1/4" = 1'-0" REFERENCED ON A4 / A111A



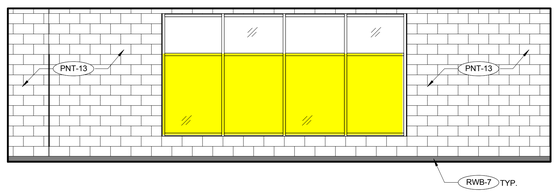
E4 A123 WEST
1/4" = 1'-0" REFERENCED ON A4 / A111A



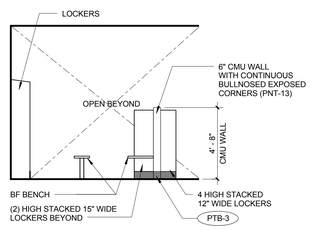
E6 TOILET ROOM A137 - BF LOCKERS
1/4" = 1'-0" REFERENCED ON F3 / A121



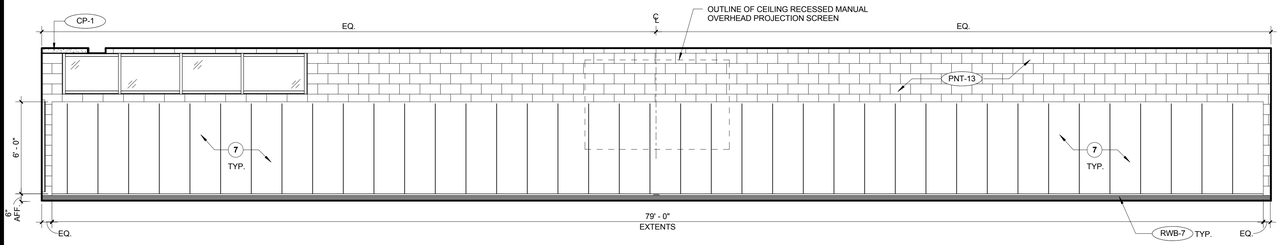
D1 A123 NORTH
1/4" = 1'-0" REFERENCED ON A4 / A111A



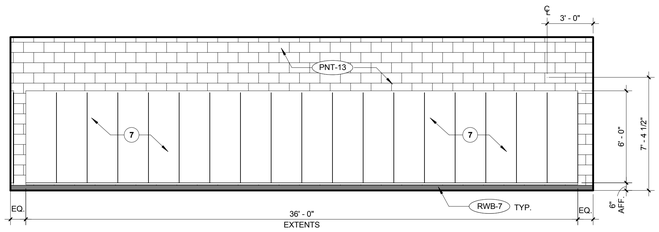
D4 A123 EAST
1/4" = 1'-0" REFERENCED ON A4 / A111A



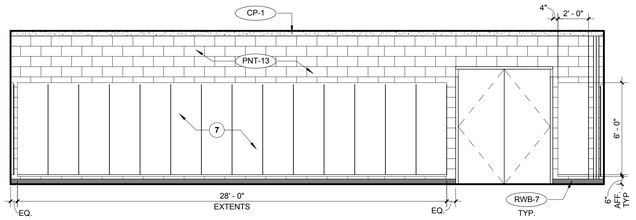
D6 TOILET ROOM 144 - BF BENCH
1/4" = 1'-0" REFERENCED ON F3 / A121



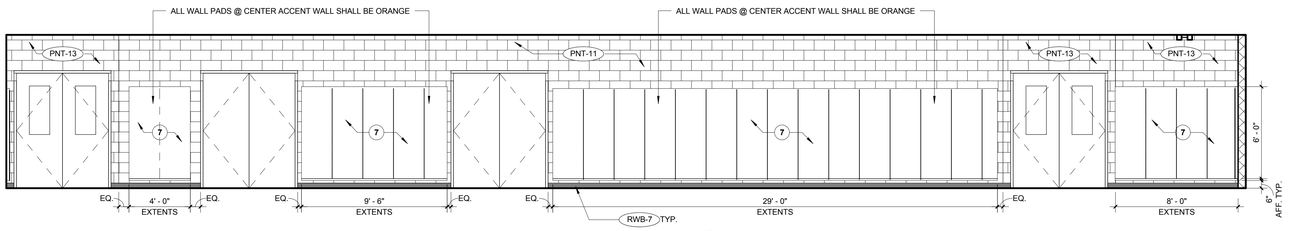
B1 A149 WEST
1/4" = 1'-0" REFERENCED ON A4 / A111A



B6 A149 NORTH
1/4" = 1'-0" REFERENCED ON A4 / A111A



A1 A149 SOUTH
1/4" = 1'-0" REFERENCED ON A4 / A111A



A6 A149 EAST
1/4" = 1'-0" REFERENCED ON A4 / A111A

GENERAL CONSTRUCTION NOTES

A. PROVIDE FILLER PANELS AS REQUIRED AT CASEWORK & MILLWORK INSTALLATION LOCATIONS - TYP. SPECIFICALLY AT LOCATIONS WHERE CASEWORK IS ADJACENT TO WALL - PROVIDE FILLER PANELS FOR EASE OF OPENING & CLOSING CASEWORK DOORS & DRAWERS.

B. ALL END PANELS SHALL BE FINISHED TO MATCH ADJACENT CABINETRY / CASEWORK.

C. PORCELAIN WALL TILE SHALL ALWAYS BEGIN WITH THE FULL TILE AT THE TOP OF THE ELEVATION; ADJACENT TO THE CEILING. THE CUT TILE SHALL ALWAYS BE AT THE BASE, ADJACENT TO THE FLOOR SURFACE, UNO.

D. PROVIDE REGULAR CMU BEHIND FLUSH MOUNT FIXTURES AND DEVICES AT LOCATIONS WHERE SPLIT FACE CMU IS CALLED OUT.

E. WALLS SHALL BE PAINTED PNT-1; UNO.

F. WALL BASE SHALL BE RWB-1; UNO.

G. COVE TILE BASE @ LOCKER ROOM(S) TO EXTEND AT LOCKER BASE, TYP.

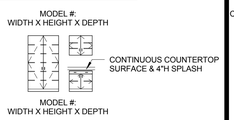
H. PROVIDE FILLER PANELS AS REQUIRED @ END(S) OF LOCKER RUN; TYP.

I. PARGE ALL CMU WALLS AT PORCELAIN TILE INSTALLATION LOCATIONS, AS REQUIRED, FOR A SMOOTH AND CONSISTENT SUBSTRATE.

CONSTRUCTION KEYNOTES

1. TYPICAL CASEWORK:
   - FACE AND SIDE FINISH OF BASE AND UPPER CABINETRY: PLAM-1
   - INTERIOR FINISH: WHITE MELAMINE
   - IF OPEN SHELF, INTERIOR FINISH SHALL BE PLAM-1
   - COUNTERTOP & 4"H SPLASH: PLAM-2
   - HARDWARE PULLS: ADA COMPLIANT, 4" BAR PULL, BRUSHED NICKEL FINISH
2. TYPICAL CASEWORK W/ SINK @ BASE CABINET:
   - FACE AND SIDE FINISH OF BASE AND UPPER CABINETRY: PLAM-1
   - INTERIOR FINISH: WHITE MELAMINE
   - COUNTERTOP & 4"H SPLASH: SSM-1
   - HARDWARE PULLS: ADA COMPLIANT, 4" BAR PULL, BRUSHED NICKEL FINISH
3. CASEWORK @ MEDIA CENTER MAKER'S SPACE:
   - FACE AND SIDE FINISH OF BASE AND UPPER CABINETRY: PLAM-7
   - INTERIOR FINISH: WHITE MELAMINE
   - COUNTERTOP & 18"H BACK-SPLASH: SSM-5
   - HARDWARE PULLS: ADA COMPLIANT, 4" BAR PULL, BRUSHED NICKEL FINISH
4. CASEWORK @ MEDIA CENTER KIOSK:
   - FACE AND SIDE FINISH OF BASE CABINETRY: PLAM-7
   - INTERIOR FINISH: WHITE MELAMINE
   - COUNTERTOP & 4"H BACK-SPLASH: SSM-3
   - HARDWARE PULLS: ADA COMPLIANT, 4" BAR PULL, BRUSHED NICKEL FINISH
5. CASEWORK @ SCIENCE ROOMS:
   - FACE & SIDE FINISH OF UPPER CABINETRY: PLAM-7
   - FACE AND SIDE FINISH OF BASE CABINETRY: PLAM-6
   - INTERIOR FINISH: WHITE MELAMINE
   - COUNTERTOP & 4"H SPLASH: SSM-6
   - HARDWARE PULLS: ADA COMPLIANT, 4" BAR PULL, BRUSHED NICKEL FINISH
6. CLASSROOM STORAGE TOWER CASEWORK:
   - FACE AND SIDE FINISH:PLAM-8
   - INTERIOR FINISH: WHITE MELAMINE
   - HARDWARE PULLS: ADA COMPLIANT, 8" BAR PULL, BRUSHED NICKEL FINISH
7. Z-CLIP MOUNTED GYM WALL PADDING - REFER TO ARCH. SPECS FOR FULL DETAILS
8. Z-CLIP MOUNTED FULL LENGTH FITNESS MIRRORS - TEMPERED GLASS W/ STAINLESS STEEL U-CHANNEL EDGE @ TOP & BOTTOM *(TYP.)*
9. MILLWORK TEACHING WALL - ALL EXPOSED FACES SHALL BE COVERED WITH VNR-1.
10. ACCENT COLOR @ PAINTED GYP. BULKHEAD IN EXTENDED LEARNING AREA, AS WELL AS ABOVE LOCKERS IN THE CORRIDOR; *VARIES PER FLOOR* :
    PNT - 4 @ LEVEL 1
    PNT - 5 @ LEVEL 2
    PNT - 6 @ LEVEL 3
11. CORRIDOR WINDOW MILLWORK SURROUND: ALL PANELS SHALL BE FINISHED IN WOOD VENEER; VNR-1 *(REFER TO MATERIALS SCHEDULE & ASSOCIATED ARCHITECTURAL SPECIFICATION)*; 3 ACCENT PANELS SHALL BE INSTALLED PER LEVEL AS INDICATED:
    GREEN (PNT-4) LAQUERED PANEL @ L1
    BLUE (PNT-5) LAQUERED PANEL @ L2
    ORANGE (PNT-6) LAQUERED PANEL @ L3
12. 1/4" LAMINATED GLASS (BUTT GLAZED) IN HM FRAME (PNT-19), TYP. @ EXTENDED LEARNING.
13. 1" INSULATED GLAZING IN AL. STOREFRONT SYSTEM

CASEWORK LEGEND



BASIS OF DESIGN : ALL CASEWORK MODEL NUMBERS DESIGNATED ON INTERIOR ELEVATIONS ARE FROM CASE SYSTEMS 2014 PRODUCT OFFERING CATALOG.

REFER TO MATERIAL LEGEND FOR FINISH REQUIREMENTS.

REFER TO SPECIFICATIONS FOR ADDITIONAL ACCEPTABLE MANUFACTURERS.

ACOUSTIC WALL PANEL KEY

1 - 1" WOOD FIBER ACOUSTIC WALL PANELS ON 3-5/8" MTL STUD AT 16" OC WITH ACOUSTICAL INSULATION (GYM)

2 - 2" THICK FABRIC WRAPPED ACOUSTIC PANEL CLIP MOUNTED
- 2A. HUNTER (APF-2)
- 2B. MOSS (APF-3)
- 2C. SPRUCE (APF-4)
- 2D. MIST (APF-5)

3 - 2" THICK FABRIC WRAPPED BUILT-UP PANEL CLIP MOUNTED (1/2" PLYWOOD ON 2X WOOD BLOCKING)
- 3A. HUNTER (APF-2)
- 3B. MOSS (APF-3)

4 - FABRIC WRAPPED ACOUSTIC DIFFUSER
- 4A. HUNTER (APF-2)
- 4B. MOSS (APF-3)

5 - 1" HEXAGON TECTUM ACOUSTIC PANELS (COMMONS)

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Final Plans for Bidding and Construction

PORTAGE PUBLIC SCHOOLS

Portage Public Schools
THE FUTURE LEARNS HERE

NORTH MIDDLE SCHOOL
PORTAGE, MICHIGAN

DRAWN: **Author**
CHECKED: **Checker**
SCALE: **As indicated UNLESS NOTED OTHERWISE**

ISSUE:

2017.03.24	CONSTRUCTION

SHEET TITLE:
INTERIOR ELEVATIONS

Project #: **214100247**

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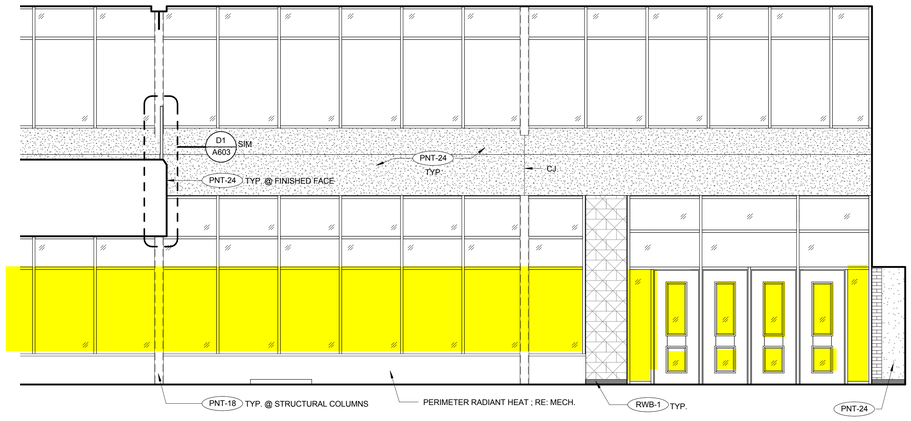
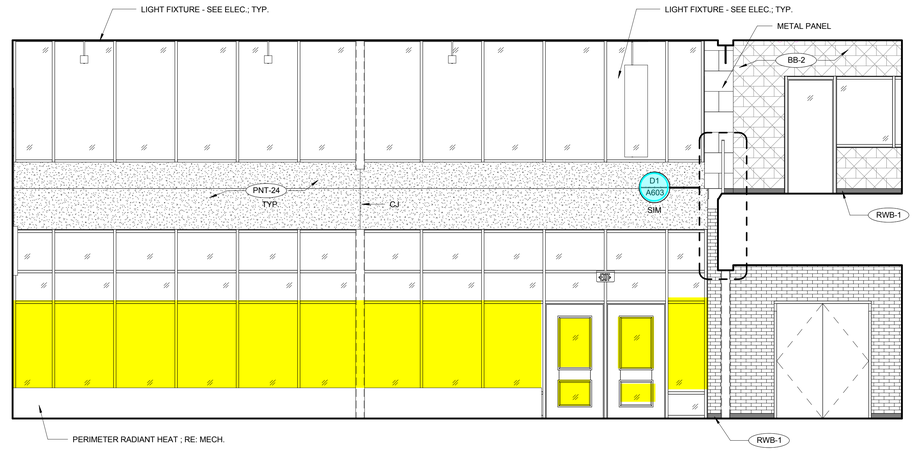
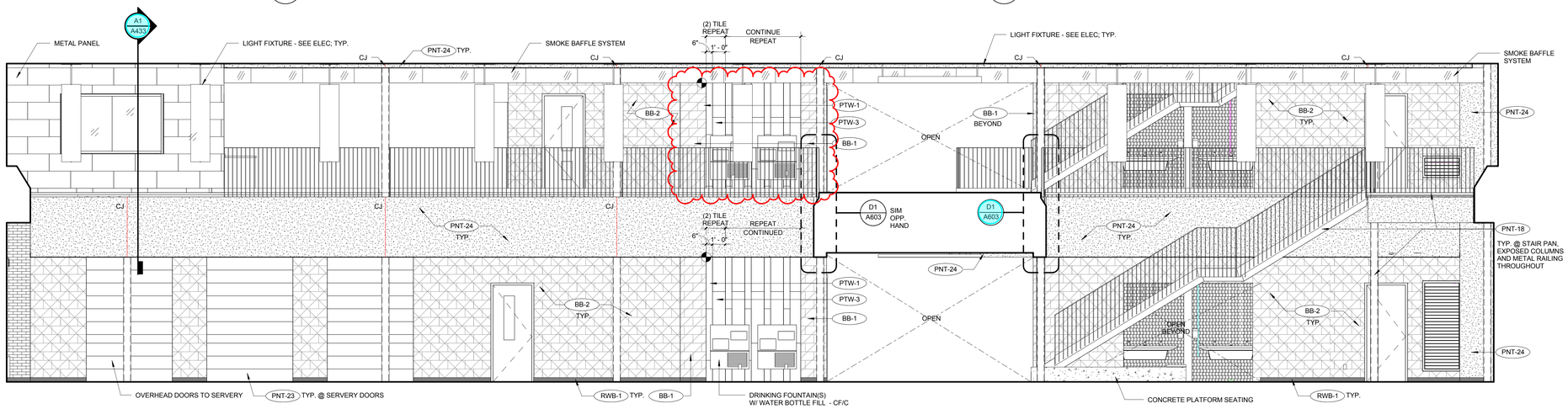


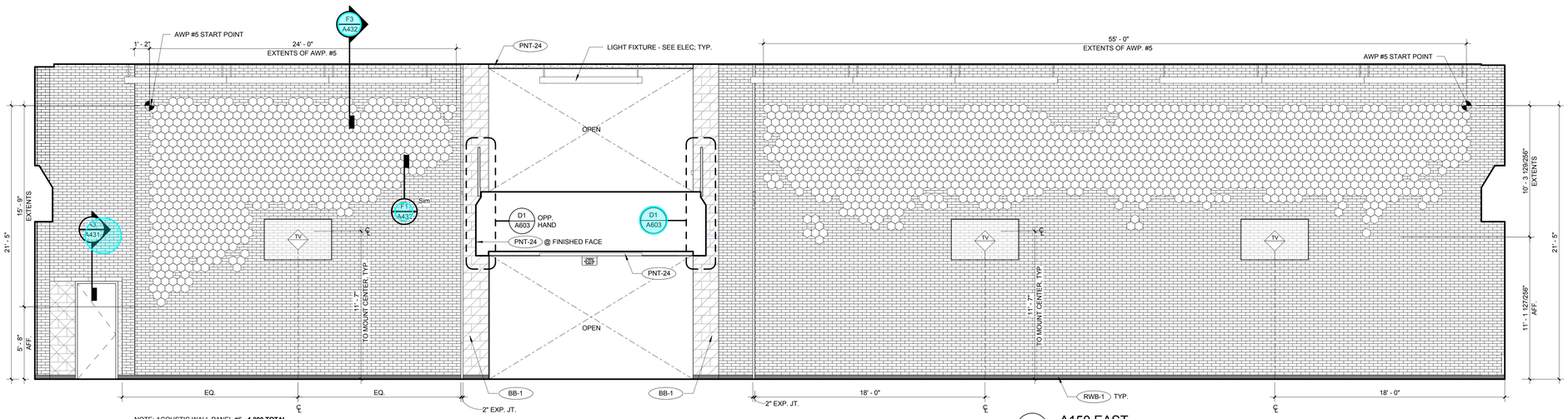
F2 A151 NORTH
1/4" = 1'-0" REFERENCED ON **A4 / A111C**



F6 A150 SOUTH
1/4" = 1'-0" REFERENCED ON **A4 / A111A**



D5 A150 WEST
1/4" = 1'-0" REFERENCED ON **A4 / A111A**



NOTE: ACOUSTIC WALL PANEL #5 - **1,800 TOTAL**

PANELS ARE INSTALLED IN AN ORGANIC INSTALLATION ACROSS THE EXTENT OF THE COMMON AREA. INDIVIDUAL HEX. PANELS SHALL BE PAINTED EITHER PNT-1, 4, 5 OR 6.

A5 A150 EAST
1/4" = 1'-0" REFERENCED ON **A4 / A111A**

GENERAL CONSTRUCTION NOTES

A. PROVIDE FILLER PANELS AS REQUIRED AT CASEWORK & MILLWORK INSTALLATION LOCATIONS - TYP. SPECIFICALLY AT LOCATIONS WHERE CASEWORK IS ADJACENT TO WALL - PROVIDE FILLER PANELS FOR EASE OF OPENING & CLOSING CASEWORK DOORS & DRAWERS.

B. ALL END PANELS SHALL BE FINISHED TO MATCH ADJACENT CABINETRY / CASEWORK.

C. PORCELAIN WALL TILE SHALL ALWAYS BEGIN WITH THE FULL TILE AT THE TOP OF THE ELEVATION, ADJACENT TO THE CEILING. THE CUT TILE SHALL ALWAYS BE AT THE BASE, ADJACENT TO THE FLOOR SURFACE, UNO.

D. PROVIDE REGULAR CMU BEHIND FLUSH MOUNT FIXTURES AND DEVICES AT LOCATIONS WHERE SPLIT FACE CMU IS CALLED OUT.

E. WALLS SHALL BE PAINTED PNT-1; UNO.

F. WALL BASE SHALL BE RWB-1; UNO.

G. COVE TILE BASE @ LOCKER ROOM(S) TO EXTEND AT LOCKER BASE, TYP.

H. PROVIDE FILLER PANELS AS REQUIRED @ END(S) OF LOCKER RUN, TYP.

I. PARGE ALL CMU WALLS AT PORCELAIN TILE INSTALLATION LOCATIONS, AS REQUIRED, FOR A SMOOTH AND CONSISTENT SUBSTRATE.

CONSTRUCTION KEYNOTES

1. TYPICAL CASEWORK:
   - FACE AND SIDE FINISH OF BASE AND UPPER CABINETRY: PLAM-1
   - INTERIOR FINISH: WHITE MELAMINE
   - IF OPEN SHELF, INTERIOR FINISH SHALL BE PLAM-1
   - COUNTERTOP & 4"H SPLASH: PLAM-2
   - HARDWARE PULLS: ADA COMPLIANT, 4" BAR PULL, BRUSHED NICKEL FINISH
2. TYPICAL CASEWORK W/ SINK @ BASE CABINET:
   - FACE AND SIDE FINISH OF BASE AND UPPER CABINETRY: PLAM-1
   - INTERIOR FINISH: WHITE MELAMINE
   - COUNTERTOP & 4"H SPLASH: SSM-1
   - HARDWARE PULLS: ADA COMPLIANT, 4" BAR PULL, BRUSHED NICKEL FINISH
3. CASEWORK @ MEDIA CENTER MAKER'S SPACE:
   - FACE AND SIDE FINISH OF BASE AND UPPER CABINETRY: PLAM-7
   - INTERIOR FINISH: WHITE MELAMINE
   - COUNTERTOP & 18"H BACK-SPLASH: SSM-5
   - HARDWARE PULLS: ADA COMPLIANT, 4" BAR PULL, BRUSHED NICKEL FINISH
4. CASEWORK @ MEDIA CENTER KIOSK:
   - FACE AND SIDE FINISH OF BASE CABINETRY: PLAM-7
   - INTERIOR FINISH: WHITE MELAMINE
   - COUNTERTOP & 4"H BACK-SPLASH: SSM-3
   - HARDWARE PULLS: ADA COMPLIANT, 4" BAR PULL, BRUSHED NICKEL FINISH
5. CASEWORK @ SCIENCE ROOMS:
   - FACE & SIDE FINISH OF UPPER CABINETRY: PLAM-7
   - FACE AND SIDE FINISH OF BASE CABINETRY: PLAM-6
   - INTERIOR FINISH: WHITE MELAMINE
   - COUNTERTOP & 4"H SPLASH: SSM-6
   - HARDWARE PULLS: ADA COMPLIANT, 4" BAR PULL, BRUSHED NICKEL FINISH
6. CLASSROOM STORAGE TOWER CASEWORK:
   - FACE AND SIDE FINISH:PLAM-8
   - INTERIOR FINISH: WHITE MELAMINE
   - HARDWARE PULLS: ADA COMPLIANT, 8" BAR PULL, BRUSHED NICKEL FINISH
7. Z-CLIP MOUNTED GYM WALL PADDING - REFER TO ARCH. SPECS FOR FULL DETAILS
8. Z-CLIP MOUNTED FULL LENGTH FITNESS MIRRORS - TEMPERED GLASS W/ STAINLESS STEEL U-CHANNEL EDGE @ TOP & BOTTOM *(TYP.)*
9. MILLWORK TEACHING WALL - ALL EXPOSED FACES SHALL BE COVERED WITH VNR-1.
10. ACCENT COLOR @ PAINTED GYP. BULKHEAD IN EXTENDED LEARNING AREA, AS WELL AS ABOVE LOCKERS IN THE CORRIDOR;
    VARIES PER FLOOR :
    PNT - 4 @ LEVEL 1
    PNT - 5 @ LEVEL 2
    PNT - 6 @ LEVEL 3
11. CORRIDOR WINDOW MILLWORK SURROUND: ALL PANELS SHALL BE FINISHED IN WOOD VENEER; VNR-1 *(REFER TO MATERIALS SCHEDULE & ASSOCIATED ARCHITECTURAL SPECIFICATION)*. 3 ACCENT PANELS SHALL BE INSTALLED PER LEVEL AS INDICATED:
    GREEN (PNT-4) LAQUERED PANEL @ L1
    BLUE (PNT-5) LAQUERED PANEL @ L2
    ORANGE (PNT-6) LAQUERED PANEL @ L3
12. 1/4" LAMINATED GLASS (BUTT GLAZED) IN HM FRAME (PNT-19), TYP. @ EXTENDED LEARNING.
13. 1" INSULATED GLAZING IN AL. STOREFRONT SYSTEM

CASEWORK LEGEND

MODEL #:
WIDTH X HEIGHT X DEPTH

CONTINUOUS COUNTERTOP SURFACE & 4"H SPLASH

MODEL #:
WIDTH X HEIGHT X DEPTH

BASIS OF DESIGN : ALL CASEWORK MODEL NUMBERS DESIGNATED ON INTERIOR ELEVATIONS ARE FROM CASE SYSTEMS 2014 PRODUCT OFFERING CATALOG.

REFER TO MATERIAL LEGEND FOR FINISH REQUIREMENTS.

REFER TO SPECIFICATIONS FOR ADDITIONAL ACCEPTABLE MANUFACTURERS.

ACOUSTIC WALL PANEL KEY

# 1	-	1" WOOD FIBER ACOUSTIC WALL PANELS ON 3-5/8" MTL STUD AT 16" OC WITH ACOUSTICAL INSULATION (GYM)
# 2	-	2" THICK FABRIC WRAPPED ACOUSTIC PANEL CLIP MOUNTED
		2A. HUNTER (APF-2)
		2B. MOSS (APF-3)
		2C. SPRUCE (APF-4)
		2D. MIST (APF-5)
# 3	-	2" THICK FABRIC WRAPPED BUILT-UP PANEL CLIP MOUNTED (1/2" PLYWOOD ON 2X WOOD BLOCKING)
		3A. HUNTER (APF-2)
		3B. MOSS (APF-3)
# 4	-	FABRIC WRAPPED ACOUSTIC DIFFUSER
		4A. HUNTER (APF-2)
		4B. MOSS (APF-3)
# 5	-	41"HIGH ACOUSTICAL ACOUSTIC PANEL 2 (GOLUMNS)

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Final Plans for Bidding and Construction

PORTAGE PUBLIC SCHOOLS

Portage Public Schools
THE FUTURE LEARNS HERE

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PORTAGE, MICHIGAN

DRAWN: **Author**
CHECKED: **Checker**
SCALE: **As indicated UNLESS NOTED OTHERWISE**

ISSUE:

2017.03.24	CONSTRUCTION
2017.xx.xx	PR 02

SHEET TITLE:
INTERIOR ELEVATIONS

A403

Project #: **214100247**

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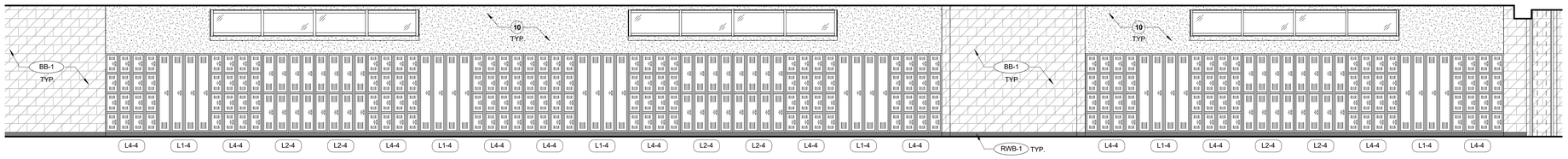
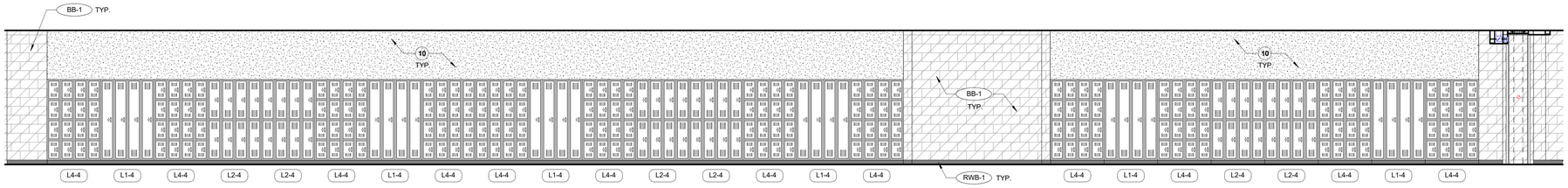
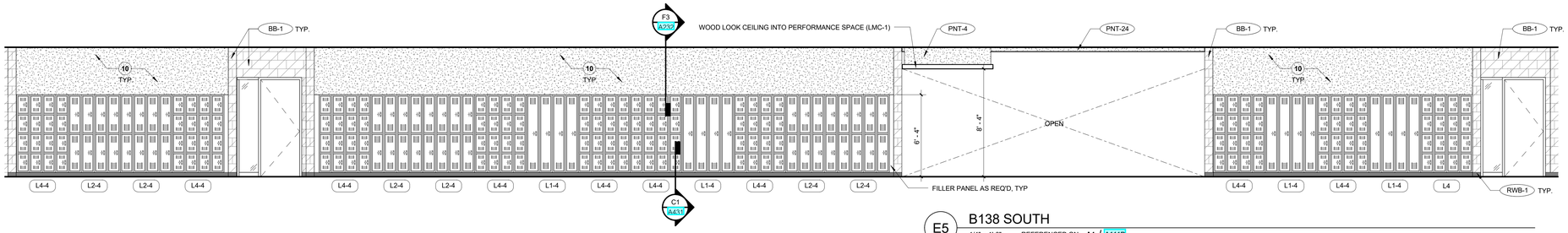


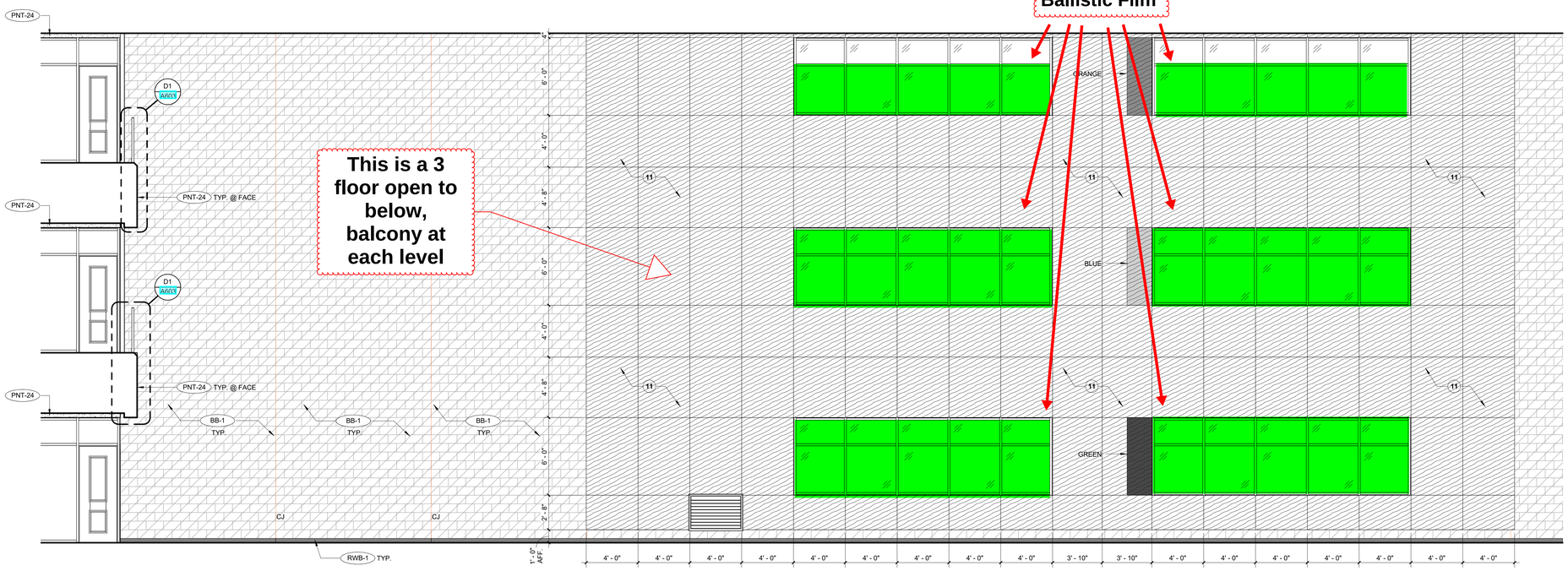
G5 B301 SOUTH
1/4" = 1'-0" REFERENCED ON A4 / A113R



F5 B202 SOUTH
1/4" = 1'-0" REFERENCED ON A4 / A112R



E5 B138 SOUTH
1/4" = 1'-0" REFERENCED ON A4 / A111R



A5 B138 NORTH
1/4" = 1'-0" REFERENCED ON A4 / A111R

GENERAL CONSTRUCTION NOTES

A. PROVIDE FILLER PANELS AS REQUIRED AT CASEWORK & MILLWORK INSTALLATION LOCATIONS - TYP. SPECIFICALLY AT LOCATIONS WHERE CASEWORK IS ADJACENT TO WALL - PROVIDE FILLER PANELS FOR EASE OF OPENING & CLOSING CASEWORK DOORS & DRAWERS.

B. ALL END PANELS SHALL BE FINISHED TO MATCH ADJACENT CABINETRY / CASEWORK.

C. PORCELAIN WALL TILE SHALL ALWAYS BEGIN WITH THE FULL TILE AT THE TOP OF THE ELEVATION, ADJACENT TO THE CEILING. THE CUT TILE SHALL ALWAYS BE AT THE BASE, ADJACENT TO THE FLOOR SURFACE, UNO.

D. PROVIDE REGULAR CMU BEHIND FLUSH MOUNT FIXTURES AND DEVICES AT LOCATIONS WHERE SPLIT FACE CMU IS CALLED OUT.

E. WALLS SHALL BE PAINTED PNT-1; UNO.

F. WALL BASE SHALL BE RWB-1; UNO.

G. COVE TILE BASE @ LOCKER ROOM(S) TO EXTEND AT LOCKER BASE, TYP.

H. PROVIDE FILLER PANELS AS REQUIRED @ END(S) OF LOCKER RUN; TYP.

I. PARGE ALL CMU WALLS AT PORCELAIN TILE INSTALLATION LOCATIONS, AS REQUIRED, FOR A SMOOTH AND CONSISTENT SUBSTRATE.

CONSTRUCTION KEYNOTES

1. TYPICAL CASEWORK:
   - FACE AND SIDE FINISH OF BASE AND UPPER CABINETRY: PLAM-1
   - INTERIOR FINISH: WHITE MELAMINE
   - IF OPEN SHELF, INTERIOR FINISH SHALL BE PLAM-1
   - COUNTERTOP & 4"H SPLASH: PLAM-2
   - HARDWARE PULLS: ADA COMPLIANT, 4" BAR PULL, BRUSHED NICKEL FINISH
2. TYPICAL CASEWORK W/ SINK @ BASE CABINET:
   - FACE AND SIDE FINISH OF BASE AND UPPER CABINETRY: PLAM-1
   - INTERIOR FINISH: WHITE MELAMINE
   - COUNTERTOP & 4"H SPLASH: SSM-1
   - HARDWARE PULLS: ADA COMPLIANT, 4" BAR PULL, BRUSHED NICKEL FINISH
3. CASEWORK @ MEDIA CENTER MAKER'S SPACE:
   - FACE AND SIDE FINISH OF BASE AND UPPER CABINETRY: PLAM-7
   - INTERIOR FINISH: WHITE MELAMINE
   - COUNTERTOP & 18"H BACK-SPLASH: SSM-5
   - HARDWARE PULLS: ADA COMPLIANT, 4" BAR PULL, BRUSHED NICKEL FINISH
4. CASEWORK @ MEDIA CENTER KIOSK:
   - FACE AND SIDE FINISH OF BASE CABINETRY: PLAM-7
   - INTERIOR FINISH: WHITE MELAMINE
   - COUNTERTOP & 4"H BACK-SPLASH: SSM-3
   - HARDWARE PULLS: ADA COMPLIANT, 4" BAR PULL, BRUSHED NICKEL FINISH
5. CASEWORK @ SCIENCE ROOMS:
   - FACE & SIDE FINISH OF UPPER CABINETRY: PLAM-7
   - FACE AND SIDE FINISH OF BASE CABINETRY: PLAM-6
   - INTERIOR FINISH: WHITE MELAMINE
   - COUNTERTOP & 4"H SPLASH: SSM-6
   - HARDWARE PULLS: ADA COMPLIANT, 4" BAR PULL, BRUSHED NICKEL FINISH
6. CLASSROOM STORAGE TOWER CASEWORK:
   - FACE AND SIDE FINISH:PLAM-8
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7. Z-CLIP MOUNTED GYM WALL PADDING - REFER TO ARCH. SPECS FOR FULL DETAILS
8. Z-CLIP MOUNTED FULL LENGTH FITNESS MIRRORS - TEMPERED GLASS W/ STAINLESS STEEL U-CHANNEL EDGE @ TOP & BOTTOM *(TYP.)*
9. MILLWORK TEACHNG WALL - ALL EXPOSED FACES SHALL BE COVERED WITH VNR-1.
10. ACCENT COLOR @ PAINTED GYP. BULKHEAD IN EXTENDED LEARNING AREA, AS WELL AS ABOVE LOCKERS IN THE CORRIDOR. *VARIES PER FLOOR*
    - PNT - 26 @ LEVEL 1
    - PNT - 5 @ LEVEL 2
    - PNT - 6 @ LEVEL 3
11. CORRIDOR WINDOW MILLWORK SURROUND: ALL PANELS SHALL BE FINISHED IN WOOD VENEER; VNR-1 *(REFER TO MATERIALS SCHEDULE & ASSOCIATED ARCHITECTURAL SPECIFICATION)*. 3 ACCENT PANELS SHALL BE INSTALLED PER LEVEL AS INDICATED:

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12. 1/4" LAMINATED GLASS (BUTT GLAZED) IN HM FRAME (PNT-19), TYP. @ EXTENDED LEARNING.
13. 1" INSULATED GLAZING IN AL. STOREFRONT SYSTEM

CASEWORK LEGEND

MODEL #:
WIDTH X HEIGHT X DEPTH

CONTINUOUS COUNTERTOP SURFACE & 4"H SPLASH

MODEL #:
WIDTH X HEIGHT X DEPTH

BASIS OF DESIGN : ALL CASEWORK MODEL NUMBERS DESIGNATED ON INTERIOR ELEVATIONS ARE FROM CASE SYSTEMS 2014 PRODUCT OFFERING CATALOG.

REFER TO MATERIAL LEGEND FOR FINISH REQUIREMENTS.

REFER TO SPECIFICATIONS FOR ADDITIONAL ACCEPTABLE MANUFACTURERS.

ACOUSTIC WALL PANEL KEY

1 - 1" WOOD FIBER ACOUSTIC WALL PANELS ON 3-5/8" MTL STUD AT 16" OC WITH ACOUSTICAL INSULATION (GYM)

2 - 2" THICK FABRIC WRAPPED ACOUSTIC PANEL CLIP MOUNTED

2A. HUNTER (APF-2)

2B. MOSS (APF-3)

2C. SPRUCE (APF-4)

2D. MIST (APF-5)

3 - 2" THICK FABRIC WRAPPED BUILT-UP PANEL CLIP MOUNTED (1/2" PLYWOOD ON 2X WOOD BLOCKING)

3A. HUNTER (APF-2)

3B. MOSS (APF-3)

4 - FABRIC WRAPPED ACOUSTIC DIFFUSER

4A. HUNTER (APF-2)

4B. MOSS (APF-3)

5 - 1" HEXAGON TECTUM ACOUSTIC PANELS (COMMONS)

Stantec
2338 COOLIDGE
SUITE 100
BERKLEY, MICHIGAN 48072
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Final Plans for Bidding and Construction

PORTAGE PUBLIC SCHOOLS

Portage Public Schools
THE FUTURE LEARNS HERE

NORTH MIDDLE SCHOOL
PORTAGE, MICHIGAN

DRAWN: **Author**
CHECKED: **Checker**
SCALE: **As indicated UNLESS NOTED OTHERWISE**

ISSUE:

2017.03.24	CONSTRUCTION
2017.06.29	PR 02
2018.10.16	PR 13

SHEET TITLE:
INTERIOR ELEVATIONS

A404

Project #: 214100247

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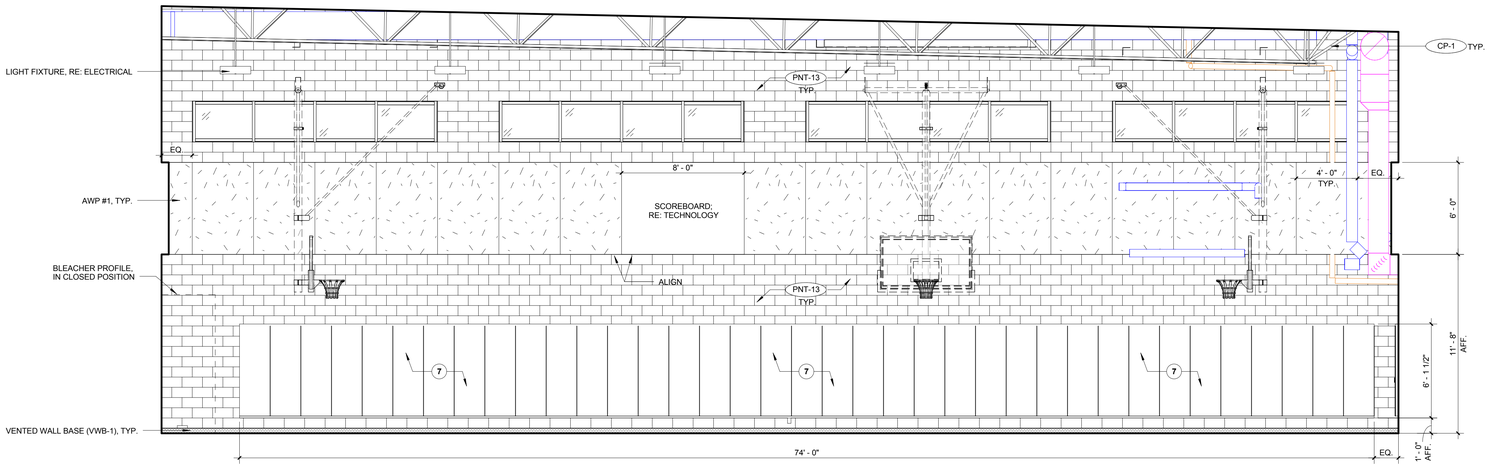
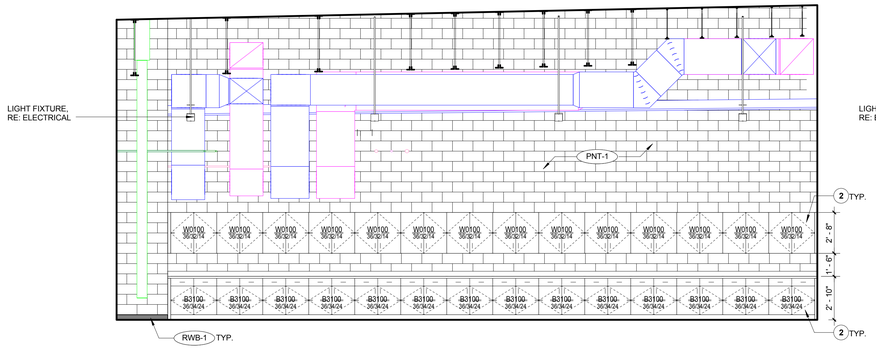
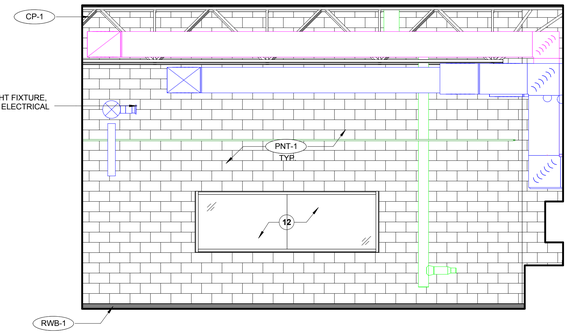


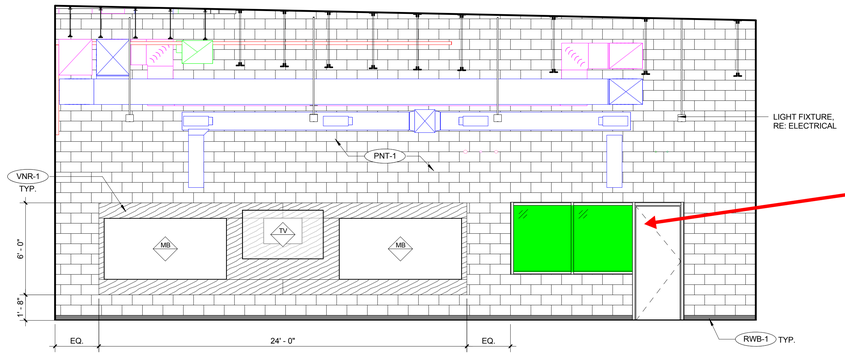
G4 A220 EAST
1/4" = 1'-0" REFERENCED ON **A4 / A112A**



E4 B201 WEST
1/4" = 1'-0" REFERENCED ON **A4 / A112B**

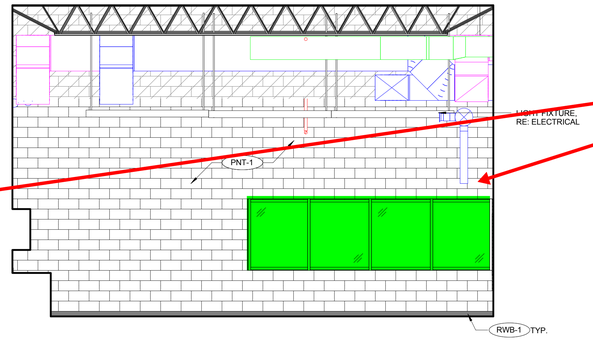


E6 B201 SOUTH
1/4" = 1'-0" REFERENCED ON **A4 / A112B**



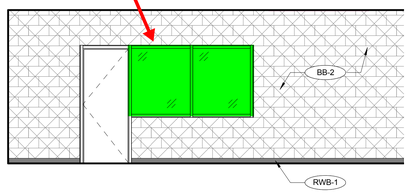
C2 B201 EAST
1/4" = 1'-0" REFERENCED ON **A4 / A112B**

NOTE: TYP. TO TEACHING WALL @ CLASSROOMS

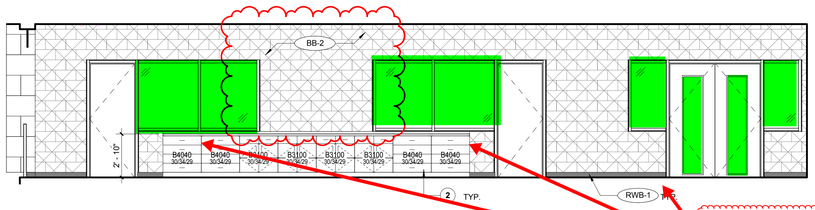


C4 B201 NORTH
1/4" = 1'-0" REFERENCED ON **A4 / A112B**

Ballistic Film

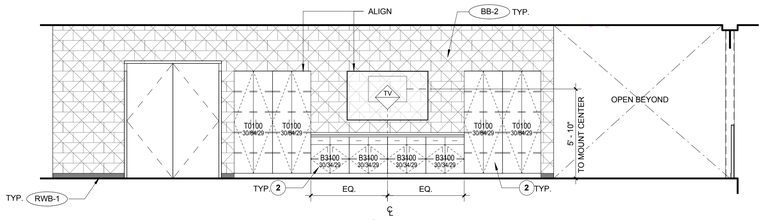


C6 B205 WEST
1/4" = 1'-0" REFERENCED ON **A4 / A112B**



A2 B205 SOUTH
1/4" = 1'-0" REFERENCED ON **A4 / A112B**

Ballistic Film



A6 B205 NORTH
1/4" = 1'-0" REFERENCED ON **A4 / A112B**

GENERAL CONSTRUCTION NOTES

A. PROVIDE FILLER PANELS AS REQUIRED AT CASEWORK & MILLWORK INSTALLATION LOCATIONS - TYP. SPECIFICALLY AT LOCATIONS WHERE CASEWORK IS ADJACENT TO WALL - PROVIDE FILLER PANELS FOR EASE OF OPENING & CLOSING CASEWORK DOORS & DRAWERS.

B. ALL END PANELS SHALL BE FINISHED TO MATCH ADJACENT CABINETRY / CASEWORK.

C. PORCELAIN WALL TILE SHALL ALWAYS BEGIN WITH THE FULL TILE AT THE TOP OF THE ELEVATION, ADJACENT TO THE CEILING. THE CUT TILE SHALL ALWAYS BE AT THE BASE, ADJACENT TO THE FLOOR SURFACE, UNO.

D. PROVIDE REGULAR CMU BEHIND FLUSH MOUNT FIXTURES AND DEVICES AT LOCATIONS WHERE SPLIT FACE CMU IS CALLED OUT.

E. WALLS SHALL BE PAINTED PNT-1; UNO.

F. WALL BASE SHALL BE RWB-1; UNO.

G. COVE TILE BASE @ LOCKER ROOM(S) TO EXTEND AT LOCKER BASE, TYP.

H. PROVIDE FILLER PANELS AS REQUIRED @ END(S) OF LOCKER RUN; TYP.

I. PARGE ALL CMU WALLS AT PORCELAIN TILE INSTALLATION LOCATIONS, AS REQUIRED, FOR A SMOOTH AND CONSISTENT SUBSTRATE.

CONSTRUCTION KEYNOTES

1. TYPICAL CASEWORK:
   - FACE AND SIDE FINISH OF BASE AND UPPER CABINETRY: PLAM-1
   - INTERIOR FINISH: WHITE MELAMINE
   - IF OPEN SHELF, INTERIOR FINISH SHALL BE PLAM-1
   - COUNTERTOP & 4"H SPLASH: PLAM-2
   - HARDWARE PULLS: ADA COMPLIANT, 4" BAR PULL, BRUSHED NICKEL FINISH
2. TYPICAL CASEWORK W/ SINK @ BASE CABINET:
   - FACE AND SIDE FINISH OF BASE AND UPPER CABINETRY: PLAM-1
   - INTERIOR FINISH: WHITE MELAMINE
   - COUNTERTOP & 4"H SPLASH: SSM-1
   - HARDWARE PULLS: ADA COMPLIANT, 4" BAR PULL, BRUSHED NICKEL FINISH
3. CASEWORK @ MEDIA CENTER MAKER'S SPACE:
   - FACE AND SIDE FINISH OF BASE AND UPPER CABINETRY: PLAM-7
   - INTERIOR FINISH: WHITE MELAMINE
   - COUNTERTOP & 18"H BACK-SPLASH: SSM-5
   - HARDWARE PULLS: ADA COMPLIANT, 4" BAR PULL, BRUSHED NICKEL FINISH
4. CASEWORK @ MEDIA CENTER KIOSK:
   - FACE AND SIDE FINISH OF BASE CABINETRY: PLAM-7
   - INTERIOR FINISH: WHITE MELAMINE
   - COUNTERTOP & 4"H BACK-SPLASH: SSM-3
   - HARDWARE PULLS: ADA COMPLIANT, 4" BAR PULL, BRUSHED NICKEL FINISH
5. CASEWORK @ SCIENCE ROOMS:
   - FACE & SIDE FINISH OF UPPER CABINETRY: PLAM-7
   - FACE AND SIDE FINISH OF BASE CABINETRY: PLAM-6
   - INTERIOR FINISH: WHITE MELAMINE
   - COUNTERTOP & 4"H SPLASH: SSM-6
   - HARDWARE PULLS: ADA COMPLIANT, 4" BAR PULL, BRUSHED NICKEL FINISH
6. CLASSROOM STORAGE TOWER CASEWORK:
   - FACE AND SIDE FINISH:PLAM-8
   - INTERIOR FINISH: WHITE MELAMINE
   - HARDWARE PULLS: ADA COMPLIANT, 8" BAR PULL, BRUSHED NICKEL FINISH
7. Z-CLIP MOUNTED GYM WALL PADDING - REFER TO ARCH. SPECS FOR FULL DETAILS
8. Z-CLIP MOUNTED FULL LENGTH FITNESS MIRRORS - TEMPERED GLASS W/ STAINLESS STEEL U-CHANNEL EDGE @ TOP & BOTTOM *(TYP.)*
9. MILLWORK TEACHNG WALL - ALL EXPOSED FACES SHALL BE COVERED WITH VNR-1.
10. ACCENT COLOR @ PAINTED GYP. BULKHEAD IN EXTENDED LEARNING AREA, AS WELL AS ABOVE LOCKERS IN THE CORRIDOR;
    VARIES PER FLOOR :
    PNT - 4 @ LEVEL 1
    PNT - 5 @ LEVEL 2
    PNT - 6 @ LEVEL 3
11. CORRIDOR WINDOW MILLWORK SURROUND: ALL PANELS SHALL BE FINISHED IN WOOD VENEER; VNR-1 *(REFER TO MATERIALS SCHEDULE & ASSOCIATED ARCHITECTURAL SPECIFICATION)*. 3 ACCENT PANELS SHALL BE INSTALLED PER LEVEL AS INDICATED:
    GREEN (PNT-4) LAQUERED PANEL @ L1
    BLUE (PNT-5) LAQUERED PANEL @ L2
    ORANGE (PNT-6) LAQUERED PANEL @ L3
12. 1/4" LAMINATED GLASS (BUTT GLAZED) IN HM FRAME (PNT-19), TYP. @ EXTENDED LEARNING.
13. 1" INSULATED GLAZING IN AL. STOREFRONT SYSTEM

CASEWORK LEGEND

MODEL #:
WIDTH X HEIGHT X DEPTH

CONTINUOUS COUNTERTOP SURFACE & 4"H SPLASH

MODEL #:
WIDTH X HEIGHT X DEPTH

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2017.06.29	PR.02
2017.08.11	PR.03

SHEET TITLE:
INTERIOR ELEVATIONS

Project #: **214100247**

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DOOR AND FRAME SCHEDULE

	DOOR						FRAME			DETAILS						
NUMBER	WIDTH	HEIGHT	THICKNESS	TYPE	MATERIAL	FINISH	TYPE	MATERIAL	FINISH	HEAD	JAMB	SILL	FIRE RATING	STC	HARDWARE SET	REMARKS
LEVEL 01																
A100	3' - 0"	7' - 6"	1 3/4"	FG	FRP	-	RE: ELEV	AL	ANOD						59	POWER OPERATOR & CARD READER ACCESS & SMOKE EVAC
A100B	3' - 0"	7' - 6"	1 3/4"	FG	FRP	-	RE: ELEV	AL	ANOD						60	CARD READER ACCESS & SMOKE EVAC
A100C	3' - 0"	7' - 6"	1 3/4"	FG	FRP	-	RE: ELEV	AL	ANOD						3	
A100D	3' - 0"	7' - 6"	1 3/4"	FG	FRP	-	RE: ELEV	AL	ANOD						3	
A100E	3' - 0"	7' - 6"	1 3/4"	FG	FRP	-	RE: ELEV	AL	ANOD						4	POWER OPERATOR & SMOKE EVAC
A100F	3' - 0"	7' - 6"	1 3/4"	FG	FRP	-	RE: ELEV	AL	ANOD						61	SMOKE EVAC
A100G	3' - 0"	7' - 6"	1 3/4"	FG	FRP	-	RE: ELEV	AL	ANOD						5	
A100H	3' - 0"	7' - 6"	1 3/4"	FG	FRP	-	RE: ELEV	AL	ANOD						5	
A101	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	3	HM	PT-19						6	
A102	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	3	HM	PT-19						7	
A103	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	3	HM	PT-19						7	
A104	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	3	HM	PT-19						7	
A105	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	3	HM	PT-19						7	
A106	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	3	HM	PT-19						7	
A107	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	3	HM	PT-19						7	
A108	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	3	HM	PT-19						6	
A110	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						8	
A111	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	11	HM	PT-19						9	
A112	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						8	
A113	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						10	
A115	3' - 0"	7' - 6"	1 3/4"	FG	WD	RE: SPECS	7	AL	ANOD						11	ELECTRIC STRIKE / ACCESS CONTROL & REMOTE SWITCH
A115B	3' - 0"	7' - 6"	1 3/4"	FG	WD	RE: SPECS	10	HM	PT-19						12	
A116	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						6	
A117	3' - 0"	7' - 6"	1 3/4"	FG	WD	RE: SPECS	8	AL	ANOD						11	ELECTRIC STRIKE / ACCESS CONTROL & REMOTE SWITCH
A120	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						10	
A121	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						10	
A122	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						13	
A123	6' - 0"	7' - 6"	1 3/4"	HG	WD	RE: SPECS	2	HM	PT-19						14	
A124	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	4	HM	PT-19						6	
A125	3' - 0"	7' - 6"	1 3/4"	FG	FRP	-	RE: ELEV	AL	ANOD						18	CARD READER ACCESS
A125B	3' - 0"	7' - 6"	1 3/4"	FG	FRP	-	RE: ELEV	AL	ANOD						17	POWER OPERATOR & CARD READER ACCESS
A125C	3' - 0"	7' - 6"	1 3/4"	FG	WD	RE: SPECS	9	AL	ANOD						15	CARD READER ACCESS & VIDEO
A125D	3' - 0"	7' - 6"	1 3/4"	FG	WD	RE: SPECS	9	AL	ANOD						16	
A126	3' - 0"	7' - 6"	1 3/4"	FG	FRP	-	RE: ELEV	AL	ANOD						2	CARD READER ACCESS
A126B	3' - 0"	7' - 6"	1 3/4"	FG	FRP	-	RE: ELEV	AL	ANOD						1	POWER OPERATOR & CARD READER ACCESS
A128	6' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	2	HM	PT-19						19	
A129	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	2	HM	PT-19						11	CARD READER ACCESS
A130	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	2	HM	PT-19						20	
A132	3' - 0"	7' - 6"	1 3/4"	FG	WD	RE: SPECS	30	HM	PT-19				60 MIN		21	
A132B	3' - 0"	7' - 6"	1 3/4"	FG	WD	RE: SPECS	30	HM	PT-19				60 MIN		21	
A135	6' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	2	HM	PT-19						19	
A135B	6' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	2	HM	PT-19						19	
A136	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						6	
A137	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						22	
A137B	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						9	
A138	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						10	
A139	3' - 0"	7' - 6"	1 3/4"	F	FRP	-	1	AL	ANOD						23	
A140	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						13	
A141	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						6	
A142	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						6	
A143	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						10	
A144	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						22	
A144B	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						9	
A145	3' - 0"	7' - 6"	1 3/4"	F	FRP	-	1	AL	ANOD						23	
A146	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						6	
A147	3' - 0"	7' - 6"	1 3/4"	FG	FRP	-	RE: ELEV	AL	ANOD						3	
A147B	3' - 0"	7' - 6"	1 3/4"	FG	FRP	-	RE: ELEV	AL	ANOD						3	
A147C	3' - 0"	7' - 6"	1 3/4"	FG	FRP	-	RE: ELEV	AL	ANOD						3	
A147D	3' - 0"	7' - 6"	1 3/4"	FG	FRP	-	RE: ELEV	AL	ANOD						24	CARD READER ACCESS
A148	6' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	2	HM	PT-19						19	
A149	6' - 0"	7' - 6"	1 3/4"	HG	WD	RE: SPECS	2	HM	PT-19						25	
A149B	6' - 0"	7' - 6"	1 3/4"	HG	WD	RE: SPECS	2	HM	PT-19						25	
A150	3' - 10"	7' - 6"	1 3/4"	FG	FRP	-	RE: ELEV	AL	ANOD						26	SMOKE EVAC
A150B	3' - 10"	7' - 6"	1 3/4"	FG	FRP	-	RE: ELEV	AL	ANOD						26	SMOKE EVAC
A151	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19				90 MIN		11	CARD READER ACCESS
A152	16' - 0"	9' - 8"	1' - 2"										90 MIN		-	WON DOOR
B101	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	4	HM	PT-19					42	28	
B102	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	4	HM	PT-19					42	28	
B103	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	4	HM	PT-19					42	28	
B104	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	4	HM	PT-19					42	28	
B105	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	4	HM	PT-19						6	
B106	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	4	HM	PT-19					42	28	
B107	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	3	HM	PT-19					42	33	
B108	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	4	HM	PT-19					42	28	
B109	6' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	2	HM	PT-19				45 MIN	42	30	
B109B	6' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	2	HM	PT-19					33	31	
B111	6' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	2	HM	PT-19				45 MIN	42	30	
B111B	6' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	2	HM	PT-19					33	31	
B113	6' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	2	HM	PT-19					42	31	
B113B	6' - 0"	7' - 6"	1 3/4"	F	FRP	-		AL	ANOD					42	32	
B114	6' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	2	HM	PT-19				45 MIN	42	30	
B114B	6' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	2	HM	PT-19					33	31	
B115	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	3	HM	PT-19				45 MIN	42	29	
B116	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	4	HM	PT-19					42	28	
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B119	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19					42	29	
B119B	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19					42	29	
B120	6' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	2	HM	PT-19				45 MIN		34	
B121	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19						6	
B122	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19				90 MIN		35	
B123	6' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	2	HM	PT-19				90 MIN		36	
B123B	10' - 0"	11' - 8"	5/8"		STL	-		STL	-	C1/A353	A5/A363	A1/A353			-	MOTORIZED COILING DOOR
B123C	10' - 0"	11' - 8"	5/8"		STL	-		STL	-	C1/A510	A1/A510	-			-	MOTORIZED COILING DOOR
B124	6' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	2	HM	PT-19				90 MIN		37	
B124B	4' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19				90 MIN		38	
B124C	6' - 0"	7' - 6"	1 3/4"	F	FRP	-		AL	ANOD						39	
B127	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						6	
B128	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19				45 MIN		40	MAGNETIC HOLD OPENS
B128B	6' - 8"	9' - 8"	5/8"		STL	-		STL	-	C3/A510	A3/A510	-	45 MIN		-	MOTORIZED COILING DOOR
B128C	6' - 8"	9' - 8"	5/8"		STL	-		STL	-	C3/A510	A3/A510	-	45 MIN		-	MOTORIZED COILING DOOR
B128D	6' - 8"	9' - 8"	5/8"		STL	-		STL	-	C3/A510	A3/A510	-	45 MIN		-	MOTORIZED COILING DOOR
B129	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						7	
B130	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19				90 MIN		41	CARD READER ACCESS
B131	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19				90 MIN		42	
B131B	4' - 0"	7' - 6"	1 3/4"	F	FRP	-	F31	AL	ANOD						43	
B132	4' - 0"	7' - 6"	1 3/4"	F	FRP	-	F31	AL	ANOD						43	
B133	3' - 0"	7' - 6"	1 3/4"	F	FRP	-	F31	AL	ANOD						43	
B134	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						44	
B135	6' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	2	HM	PT-19				45 MIN		45	
B137	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19				90 MIN		20	
B139	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	3	HM	PT-19				45 MIN	42	29	
B140	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19				90 MIN		20	
C100	3' - 0"	7' - 6"	1 3/4"	FG	WD	RE: SPECS	5	HM	PT-19				45 MIN	33	47	MAGNETIC HOLD OPENS
C100B	3' - 0 1/8"	7' - 6"	1 3/4"	FG	WD	RE: SPECS	5	HM	PT-19				45 MIN	33	47	MAGNETIC HOLD OPENS
C100C	3' - 0"	7' - 6"	1 3/4"	FG	WD	RE: SPECS	6	HM	PT-19				45 MIN	33	47	MAGNETIC HOLD OPENS
C100D	3' - 0"	7' - 6"	1 3/4"	FG	WD	RE: SPECS	6	HM	PT-19				45 MIN	33	47	MAGNETIC HOLD OPENS
C101	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19						46	
C102	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19						46	
C103	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19						46	
C104	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19						46	
C105	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19						46	
C106	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19						46	
C107	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19						46	
C108	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19						46	
C109	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19						6	
C110	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19						22	
C111	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19						22	
C112	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	4	HM	PT-19						6	
C113	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						10	
C114	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						10	
C115	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						20	
C116	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						10	
C117	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19						49	CARD READER ACCESS
C118	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	4	HM	PT-19						8	
C119	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						20	
C120	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						49	CARD READER ACCESS
C121	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19						49	CARD READER ACCESS
C122	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19				45 MIN		13	
S1	3' - 0"	7' - 6"	1 3/4"	F	FRP	-	1	AL	ANOD						27	
S1B	3' - 1"	7' - 6"	1 3/4"	F	FRP	-	1	AL	ANOD						27	
S1D	14' - 8"	9' - 8"	1' - 2"										60 MIN		-	WON DOOR
S2	3' - 1"	7' - 6"	1 3/4"	F	FRP	-	1	AL	ANOD						27	
S2B	3' - 0"	7' - 6"	1 3/4"	F	FRP	-	1	AL	ANOD						27	
S2C	16' - 0"	9' - 8"	1' - 2"										60 MIN		-	WON DOOR
S3	3' - 8"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19				90 MIN		42	

DOOR AND FRAME SCHEDULE

	DOOR						FRAME			DETAILS						
NUMBER	WIDTH	HEIGHT	THICKNESS	TYPE	MATERIAL	FINISH	TYPE	MATERIAL	FINISH	HEAD	JAMB	SILL	FIRE RATING	STC	HARDWARE SET	REMARKS
LEVEL 02																
A200	3' - 0 1/4"	7' - 6"	1 3/4"	F	WD	RE: SPECS	16	HM	PT-19					33	28	
A201	3' - 0 1/4"	7' - 6"	1 3/4"	F	WD	RE: SPECS	16	HM	PT-19					33	28	
A202	3' - 0 1/4"	7' - 6"	1 3/4"	F	WD	RE: SPECS	16	HM	PT-19					33	28	
A203	3' - 0 1/4"	7' - 6"	1 3/4"	F	WD	RE: SPECS	15	HM	PT-19					33	28	
A204	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						8	
A205	3' - 0"	7' - 6"	1 3/4"	FG	WD	RE: SPECS	27	HM	PT-19					33	50	
A206	3' - 0"	7' - 6"	1 3/4"	FG	WD	RE: SPECS	28	HM	PT-19					33	50	
A207	3' - 0 1/4"	7' - 6"	1 3/4"	F	WD	RE: SPECS	16	HM	PT-19					33	28	
A208	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	17	HM	PT-19					33	28	
A209	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	3	HM	PT-19					33	50	
A209B	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	3	HM	PT-19					33	50	
A210	6' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	2	HM	PT-19						19	
A211	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						35	
A211B	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	4	HM	PT-19						35	
A216	16' - 0"	9' - 8"	1' - 2"										90 MIN		-	WON DOOR
A217	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						11	CARD READER ACCESS
A218	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						20	
A219	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						6	
A219B	3' - 4"	4' - 10"	3/4"		STL	-		STL	-	C4/A510	A4/A510	C4/A510			-	INTERIOR COILING COUNTER DOOR
A219C	3' - 4"	4' - 10"	3/4"		STL	-		STL	-	C4/A510	A4/A510	C4/A510			-	INTERIOR COILING COUNTER DOOR
A220	3' - 4"	7' - 6"	1 3/4"	FG	WD	RE: SPECS	29	HM	PT-19					33	22	
A220B	6' - 9"	7' - 6"	1 3/4"	FG	WD	RE: SPECS	29	HM	PT-19					33	25	
A222	6' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						19	
A226	6' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	2	HM	PT-19						19	
B201	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	12	HM	PT-19				45 MIN		51	
B202	6' - 0"	7' - 5 1/2"	1 3/4"	FG	WD	RE: SPECS	13	HM	PT-19				45 MIN		62	
B202B	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19				45 MIN		6	
B203	3' - 0"	7' - 5 1/2"	1 3/4"	F	WD	RE: SPECS	12	HM	PT-19				45 MIN		51	
B203B	3' - 0"	7' - 5 1/2"	1 3/4"	F	WD	RE: SPECS	12	HM	PT-19				45 MIN		51	
B203C	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19				45 MIN		6	
B204	6' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	2	HM	PT-19				45 MIN		45	
B205	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19				45 MIN		38	
C200	3' - 0"	7' - 6"	1 3/4"	FG	WD	RE: SPECS	5	HM	PT-19				45 MIN	33	47	MAGNETIC HOLD OPENS
C200B	3' - 0"	7' - 6"	1 3/4"	FG	WD	RE: SPECS	5	HM	PT-19				45 MIN	33	47	MAGNETIC HOLD OPENS
C200C	3' - 0"	7' - 6"	1 3/4"	FG	WD	RE: SPECS	6	HM	PT-19				45 MIN	33	47	MAGNETIC HOLD OPENS
C200D	3' - 0"	7' - 6"	1 3/4"	FG	WD	RE: SPECS	6	HM	PT-19				45 MIN	33	47	MAGNETIC HOLD OPENS
C201	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19						46	
C202	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19						46	
C203	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19						46	
C204	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19						46	
C205	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19						46	
C206	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19						46	
C207	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19						46	
C208	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19						46	
C209	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19						6	
C210	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19						22	
C211	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19						22	
C212	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	4	HM	PT-19						6	
C213	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						10	
C214	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						10	
C215	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS		HM	PT-19						20	
C216	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						10	
C218	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19						49	CARD READER ACCESS
C219	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	4	HM	PT-19						8	
C220	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						20	
C221	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						49	CARD READER ACCESS
C222	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19						49	CARD READER ACCESS
C223	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19				45 MIN		13	
S1E	14' - 8"	9' - 8"	1' - 2"										60 MIN		-	WON DOOR
S2D	16' - 0"	9' - 8"	1' - 2"										60 MIN		-	WON DOOR
S3B	3' - 8"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19				90 MIN		55	
S4	6' - 0"	7' - 6"	1 3/4"	HG	WD	RE: SPECS	2	HM	PT-19				60 MIN		37	
S5	6' - 0"	7' - 6"	1 3/4"	HG	WD	RE: SPECS	2	HM	PT-19				60 MIN		37	
LEVEL 03																
A300	3' - 0"	6' - 0"	1 3/4"	F	FRP	-	1	AL	ANOD						53	
A301	4' - 0"	7' - 0"	1 3/4"	F	WD	RE: SPECS		HM	PT-19				45 MIN		58	
C300	3' - 0"	7' - 6"	1 3/4"	FG	WD	RE: SPECS	5	HM	PT-19				45 MIN	33	47	MAGNETIC HOLD OPENS
C300B	3' - 0"	7' - 6"	1 3/4"	FG	WD	RE: SPECS	5	HM	PT-19				45 MIN	33	47	MAGNETIC HOLD OPENS
C300C	3' - 0"	7' - 6"	1 3/4"	FG	WD	RE: SPECS	6	HM	PT-19				45 MIN	33	47	MAGNETIC HOLD OPENS
C300D	3' - 0"	7' - 6"	1 3/4"	FG	WD	RE: SPECS	6	HM	PT-19				45 MIN	33	47	MAGNETIC HOLD OPENS
C301	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19						46	
C302	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19						46	
C303	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19						46	
C304	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19						46	
C305	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19						46	
C306	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19						46	
C307	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19						46	
C308	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19						46	
C309	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19						6	
C310	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19						22	
C311	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19						22	
C312	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	4	HM	PT-19						6	
C313	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						10	
C314	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						20	
C315	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						10	
C317	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19						49	CARD READER ACCESS
C318	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	4	HM	PT-19						8	
C319	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19						10	
C320	3' - 0"	7' - 6"	1 3/4"	NL	WD	RE: SPECS	1	HM	PT-19						49	CARD READER ACCESS
C321	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19				45 MIN		54	CARD READER ACCESS
C322	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19				45 MIN		20	
C323	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19				45 MIN		13	
S1F	14' - 8"	9' - 8"	1' - 2"										45 MIN		-	WON DOOR
S2E	4' - 0"	7' - 0"	1 3/4"	F	WD	RE: SPECS		HM	PT-19				60 MIN		45	
S3C	3' - 8"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19				90 MIN		55	
S3E	3' - 0"	7' - 2"	1 3/4"	F	FRP	-	1	AL	ANOD							
PENTHOUSE																
C400	3' - 6"	7' - 0"	1 3/4"	F	FRP	-	1	AL	ANOD						53	
C401	3' - 8"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19				45 MIN		57	
S3D	3' - 0"	7' - 6"	1 3/4"	F	WD	RE: SPECS	1	HM	PT-19				90 MIN		42	

DOOR GENERAL NOTES

1 ALL EXTERIOR DOORS TO BE INSULATED.
2 ALL HM FRAMES IN MASONRY WALLS TO BE GROUTED SOLID.
3 REFER TO THE EXTERIOR ELEVATION SHEETS FOR GLAZING LEGEND. REFER TO SPECIFICATIONS FOR DETAILED GLAZING INFORMATION.
4 ALL DOORS TO BE 1 3/4" THICK, UNO
5 ALL STEEL DOOR AND WINDOW FRAMES TO HAVE A 2" FACE DIMENSION, WITH 5/8" STOP TYPICAL, 3/4" STOP AT FIRE RATED FRAMES, UNO.
6 ALL INTERIOR DOOR AND BORROWED LIGHT FRAMES SHALL BE HOLLOW METAL, U.N.O.
7 ALL HOLLOW METAL DOOR FRAMES SHALL BE PAINTED PNT-19, U.N.O.

GLAZING NOTES

1 GLASS THICKNESS DESIGNATIONS INDICATED ARE MINIMUMS & ARE FOR DETAILING ONLY. GLAZING TRADE CONTRACTOR TO DETERMINE SAFETY GLAZING REQUIREMENTS & TO CONFIRM GLASS THICKNESSES BY ANALYZING PROJECT LOADS, IN-SERVICE CONDITIONS & GLASS LOCATIONS. PROVIDE GLASS LITES / UNITS IN THE THICKNESS DESIGNATIONS INDICATED ABOVE FOR VARIOUS SIZE OPENINGS, BUT NOT LESS THAN THICKNESSES & IN STRENGTH (ANNEALED, TEMPERED OR HEAT TREATED) REQUIRED TO MEET OR EXCEED CODE & PERFORMANCE CRITERIA, (RE: SPEC SECTION 08 80 00).
2 ALL EXTERIOR GLAZING IS GL-1, UNO.
3 ALL EXTERIOR DOOR GLAZING IS GL-2, UNO.
4 ALL INTERIOR GLAZING IS GL-5, UNO.
5 PROVIDE SAFETY GLAZING WHERE APPLICABLE PER BUILDING CODE.
6 PROVIDE FIRE RATED GLAZING WHERE APPLICABLE PER BUILDING CODE. REFER TO CODE PLANS FOR LOCATION AND PROJECT MANUAL.

GLAZING SCHEDULE

GL-1	1" LOW E COATED CLEAR INSULATING GLASS
GL-2	1" INSULATED CLEAR GLASS UNIT
GL-3	1" LOW E COATED SPANDREL UNIT
GL-4	1" LOW E INSULATED TRANSLUCENT UNIT
GL-5	1/4" LAMINATED CLEAR GLASS
GL-6	FIRE RATED GLAZING (RATING AS INDICATED ON CODE PLANS)

MATERIAL LEGEND

AL-	ALUMINUM
FRP -	FIBER REINFORCED PLASTIC
GL-	GLASS
HM -	HOLLOW METAL
PT-	PAINT
PF-	PRE FINISHED
WD-	WOOD

Stantec

2338 COOLIDGE
SUITE 100
BERKLEY, MICHIGAN 48072

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Final Plans for Bidding and Construction

PORTAGE PUBLIC SCHOOLS

Portage Public Schools
THE FUTURE LEARNS HERE

NORTH MIDDLE SCHOOL
PORTAGE, MICHIGAN

DRAWN: **Author**
CHECKED: **Checker**
SCALE: **1/4" = 1'-0"**

ISSUE:

2017.03.24	CONSTRUCTION
2017.06.12	PR 01
2017.08.11	PR 03
2017.10.06	PR 05
2019.04.12	PR 17

SHEET TITLE:
DOOR SCHEDULE

A501

Project #: **214100247**

4/12/2019 9:03:10 AM
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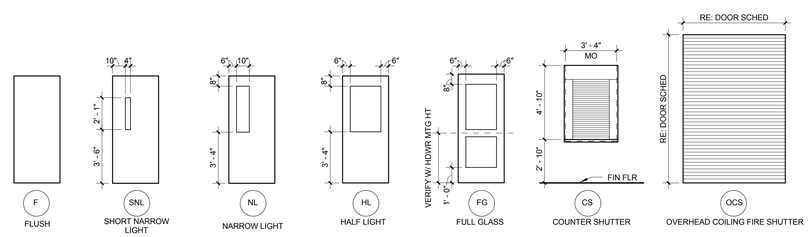
STEEL DOOR AND WINDOW FRAME TYPES



DOOR TYPES

*NOTE: AT DOORS MARKED AS ACOUSTICAL DOORS, PROVIDE SOUND SEALS FOR AN EQUIVALENT STC 47 DOOR

DOOR GENERAL NOTES

1 ALL EXTERIOR DOORS TO BE INSULATED.
2 ALL HM FRAMES IN MASONRY WALLS TO BE GROUTED SOLID.
3 REFER TO THE EXTERIOR ELEVATION SHEETS FOR GLAZING LEGEND. REFER TO SPECIFICATIONS FOR DETAILED GLAZING INFORMATION.
4 ALL DOORS TO BE 1 3/4" THICK, UNO
5 ALL STEEL DOOR AND WINDOW FRAMES TO HAVE A 2" FACE DIMENSION, WITH 5/8" STOP TYPICAL, 3/4" STOP AT FIRE RATED FRAMES, UNO.
6 ALL INTERIOR DOOR AND BORROWED LIGHT FRAMES SHALL BE HOLLOW METAL, U.N.O.
7 ALL HOLLOW METAL DOOR FRAMES SHALL BE PAINTED PNT-19, U.N.O.

GLAZING NOTES

1 GLASS THICKNESS DESIGNATIONS INDICATED ARE MINIMUMS & ARE FOR DETAILING ONLY. GLAZING TRADE CONTRACTOR TO DETERMINE SAFETY GLAZING REQUIREMENTS & TO CONFIRM GLASS THICKNESSES BY ANALYZING PROJECT LOADS, IN-SERVICE CONDITIONS & GLASS LOCATIONS. PROVIDE GLASS LITES / UNITS IN THE THICKNESS DESIGNATIONS INDICATED ABOVE FOR VARIOUS SIZE OPENINGS, BUT NOT LESS THAN THICKNESSES & IN STRENGTH (ANNEALED, TEMPERED OR HEAT TREATED) REQUIRED TO MEET OR EXCEED CODE & PERFORMANCE CRITERIA, (RE: SPEC SECTION 08 80 00).
2 ALL EXTERIOR GLAZING IS GL-1, UNO.
3 ALL EXTERIOR DOOR GLAZING IS GL-2, UNO.
4 ALL INTERIOR GLAZING IS GL-5, UNO.
5 PROVIDE SAFETY GLAZING WHERE APPLICABLE PER BUILDING CODE.
6 PROVIDE FIRE RATED GLAZING WHERE APPLICABLE PER BUILDING CODE. REFER TO CODE PLANS FOR LOCATION AND PROJECT MANUAL.

GLAZING SCHEDULE

GL-1 1" LOW E COATED CLEAR INSULATING GLASS
GL-2 1" INSULATED CLEAR GLASS UNIT
GL-3 1" LOW E COATED SPANDREL UNIT
GL-4 1" LOW E INSULATED TRANSLUCENT UNIT
GL-5 1/4" LAMINATED CLEAR GLASS
GL-6 FIRE RATED GLAZING (RATING AS INDICATED ON CODE PLANS)

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Final Plans for Bidding and Construction

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DOOR INFO AND FRAME TYPES

A502

Project #: **214100247**

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