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Frederick, Maryland 21701  
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301-644-5213 fax  
[kim.miskell@fcps.org](mailto:kim.miskell@fcps.org)



Kerrie Koopman CPPB, CPPO,  
Purchasing Manager  
**Kim Miskell, CSBO, Assistant Purchasing  
Manager**  
Bill Meekins CPPB, CSBO, CPCP,  
Purchasing Agent  
Shane Ryberg, Purchasing Agent

## **ADDENDUM**

April 23, 2020

### **ADDENDUM # 6 Bid 20C6, Waverley Elementary School - New Construction**

#### **DUE DATE & TIME:**

Bids for the following packages: 2A Sitework; 3A Concrete; 4A Masonry; 5A Structural Steel; 6A General Carpentry; 7A Roofing; 8A Windows and Storefronts; 9A Drywall and Acoustics; 9B Ceramic Wall and Floor Tile; 9C Fluid Applied and Terrazzo Flooring; 9D Resilient Flooring and Athletic Surfacing; 9E Painting; 11A Food Service Equipment; 11B Athletic Equipment; 15A Mechanical (Plumbing, HVAC and Sprinkler); 16A Electrical (including Low Voltage) will be received prior to, and no later than **11:00 a.m. local time, April 29, 2020** at <https://secure.procurenow.com/portal/fcps> (must be signed up prior to using this link)

1. Bids will be opened and publicly read utilizing Skype Business (formerly known as Lync):  
(240) 236-6172 (FCPS) Conference ID: 7907906
2. This Addendum includes the following attachment(s):
  - a. Oak Contracting, LLC & GWWO Addendum Number 6 (275 pages)

Thank you for your interest in bidding with Frederick County Public Schools and we apologize for any inconvenience this may have caused.

Sincerely,

*Kim Miskell*

Kim Miskell, CSBO,  
Assistant Purchasing Manager

km/ab

pc: Brian Staiger, Senior Project Manager, Construction Management  
Scott Moir, GWWO  
Dave Toth, Oak



## **ADDENDUM NO. 6**

April 22, 2020

TO: ALL PLANHOLDERS AND PROSPECTIVE BIDDERS

RE: **WAVERLEY ELEMENTARY SCHOOL REPLACEMENT**

This addendum forms a part of the Contract Documents and modifies the original Bidding Documents dated March 16, 2020. Acknowledge receipt of this Addendum in the space provided on the Form of Proposal.

### **General:**

See attached sketches SK-01 thru SK-13 with Contract Package assignments for clarification of scope responsibilities. Sketches are typical to related details, not to scale, and are only being provided for scope clarifications (13 pages).

See attached Oak Contracting Pre-Bid RFI's, numbered PB-018 thru 019, 024 thru 026, 028 thru 032, 036 thru 042, 044 thru 046, and 048 thru 051, for response to questions related to the Bid Documents (108 pages).

### **Changes to the Specifications:**

#### **Section 00 2416 Contract Packages**

##### ***Contract Package 2A – Site***

Delete Item 1.21 in its entirety and replace with the following:

- 1.21 2A Contractor is responsible for demolition and removal of 20 portable classrooms. Demolition to include all other items associated with portable classrooms including but not limited to transformers, foundations, decks, railings, and ramps. Demolition of portable classrooms will be performed in accordance with the project phasing or as directed by the Construction Manager. FCPS intends on salvaging and relocating the portable restroom facility. FCPS will be responsible for the costs associated with the relocation of the portable restroom facility only. 2A Contract shall be responsible for removal of foundation, decks, railings, and ramps of the portable restroom facility.

Delete 1.22 in its entirety and replace with the following:

- 1.22 2A Contractor is responsible for removal, storage, and delivery within a 25-mile radius of the existing school the items listed below from the Owner's salvage list included in Specification Section 02 4100. All other items from the Owners salvage list will be removed by FCPS. These items are to be removed prior to the start of demolition.
1. All memorials, memorial signage, and plaques
  2. Flagpoles
  3. Waverley (WAVES) Owners Salvage List
    - a. MCC and Feeder Panel – Boiler Room
    - b. Electrical Breakers – Breaker 10 – Boiler Room
    - c. Electrical Breakers – Breaker 12 – Boiler Room
    - d. Hot Water Heater – Boiler Room
    - e. Domestic Water 3" Pressure Reducing Valve – Boiler Room
  4. Rock Creek (RCS) Owners Salvage List
    - a. Electric Sub Panel – Hall Closet next to Gym
    - b. Electric Sub Panel Breaker – 100A Single Phase Breaker – Panel P1
    - c. Electric Sub Panel Breaker – 100A Three Phase Breaker – Panel P2
    - d. New Exhaust Fans – Roof
  5. Playgrounds Owners Salvage List
    - a. All Items listed under "Playground"

Delete Item 1.84 in its entirety and replace with the following:

- 1.84 Site retaining walls are required to be designed by a professional engineer licensed in the State of Maryland. 2A Contractor is required to submit Shop Drawings that include engineer's stamp. Site retaining walls also require a building permit. 2A Contractor is responsible for obtaining and closing out all building permits for the site retaining walls that are included in the 2A Contractor's scope of work. All associated costs shall be included in the base bid.

Delete Item 1.86 in its entirety and replace with the following:

- 1.86 2A Contractor is responsible for all work described on Contract Drawings PC.1A through PC.3A. 2A Contractor is responsible for providing structural fill in accordance with the project specifications to achieve the required sub grades. Temporary parking area and asphalt sidewalk shall be four (4) inches of GAB with four (4) inches of hot-mixed asphalt superpave 12.5MM (PG.64-22, ESAL Level 3). 2A Contractor shall also furnish, install, and maintain a staging area for the Trade Contractors adjacent to the temporary parking area. Staging area shall tie into the SCE shown on the contract drawings in this area. Trade Contractors staging area will be 29,000 sqft. and will consist of 6" of compacted CR-6 placed on filter fabric. 2A Contractor is responsible to remove all asphalt, filter fabric, sediment controls, and temporary signage and grade the entire area for proper drainage as directed by the Construction Manager.

Add Item 1.92:

- 1.92 2A Contractor shall carry an allowance of \$25,000.00 for changes associated with the signed Improvement Plans that will be issued after the bid. 2A Contract will be subject to adjustment by Change Order when the final costs of the identified Improvement Plan changes have been determined. If allowance is not exhausted, 2A Contract will be adjusted via Change Order for the total remaining balance of this allowance.

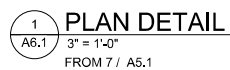
**Contract Package 16A – Electrical (Including Low Voltage)**

Delete Item 1.03 in its entirety and replace with the following:

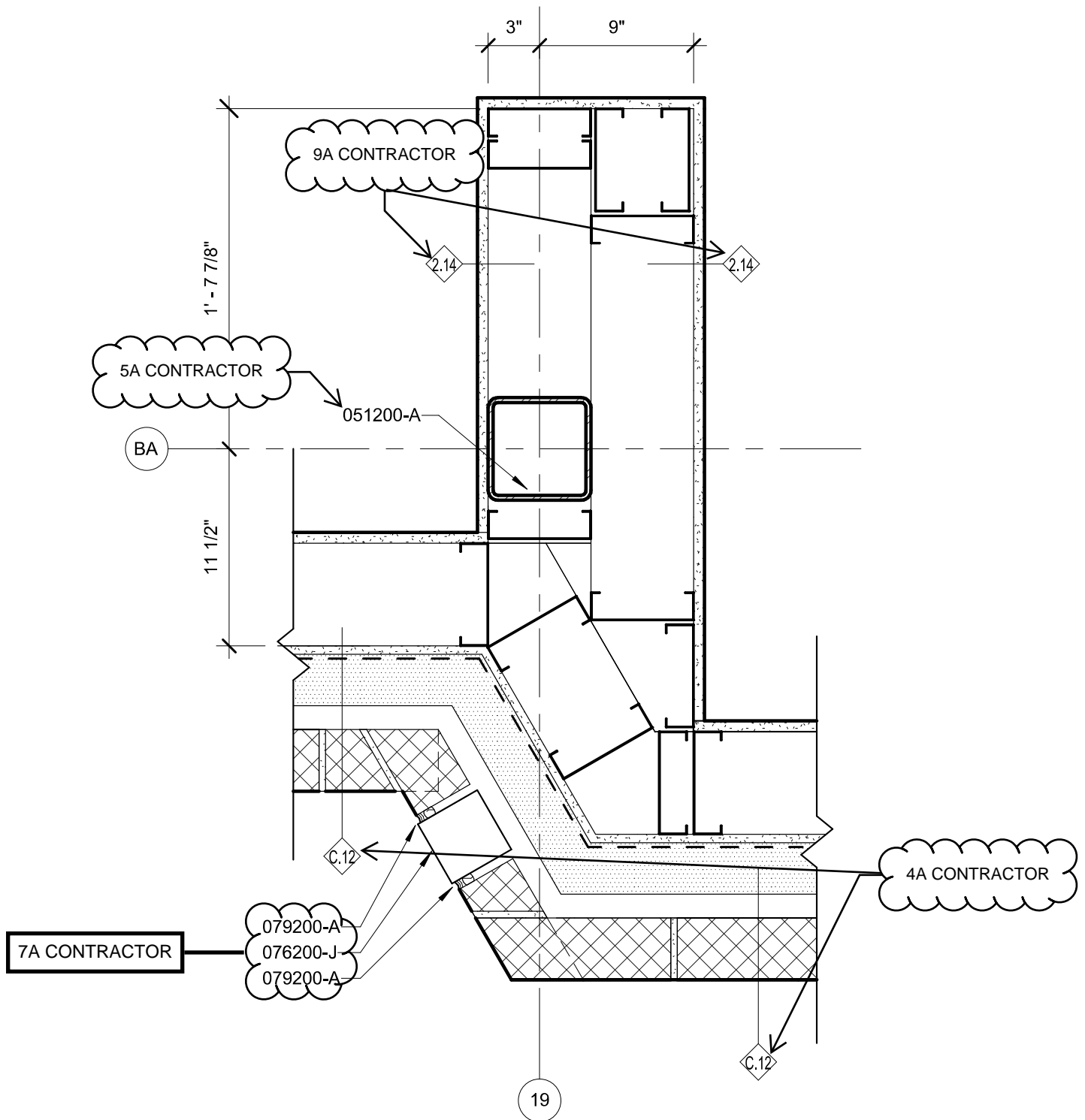
- 1.03 16A Contractor to furnish and install 800amp temporary electric service as shown on sketch SK-13 issued by Oak Contracting in Addendum #6. 16A Contractor will be responsible for obtaining the permit for this work and scheduling all inspections with Potomac Edison and the City Electrical Inspector. Frederick County Public Schools will obtain the required work orders from Potomac Edison and pay for all equipment supplied by Potomac Edison, as well as consumption costs. All other items required for the temporary service are the 16A Contractors responsibility. 16A Contractor shall maintain and distribute temporary electric service to the new school building and to the staging areas. Temporary electric to the new school building shall include adequate temporary lighting, minimum ten (10) foot candles, or as required by MOSH/OSHA standards, whichever is greater, as well as adequate electrical service for all trades. This includes but is not limited to 240/120volt service at multiple locations throughout the new school building for the use by all Contractors requiring same to perform their work. The 16A Contractor shall provide temporary lighting fixtures immediately following placement of metal floor and/or roof deck in each area of the building. Temporary lighting fixtures shall be compatible for use in wet/damp areas as necessary. The 16A Contractor shall promptly re-lamp temporary lighting fixtures as necessary for the duration of the project. The temporary electric shall be routed such that it does not impede the progress of the work. 16A Contractor is responsible to connect the temporary electric service the Construction Managers field office. 16A Contractor is responsible for removal and disposal of all temporary electric services, including but not limited to conduits, racks, and temporary equipment at the end of the project or as directed by the Construction Manager.

Add Item 1.54:

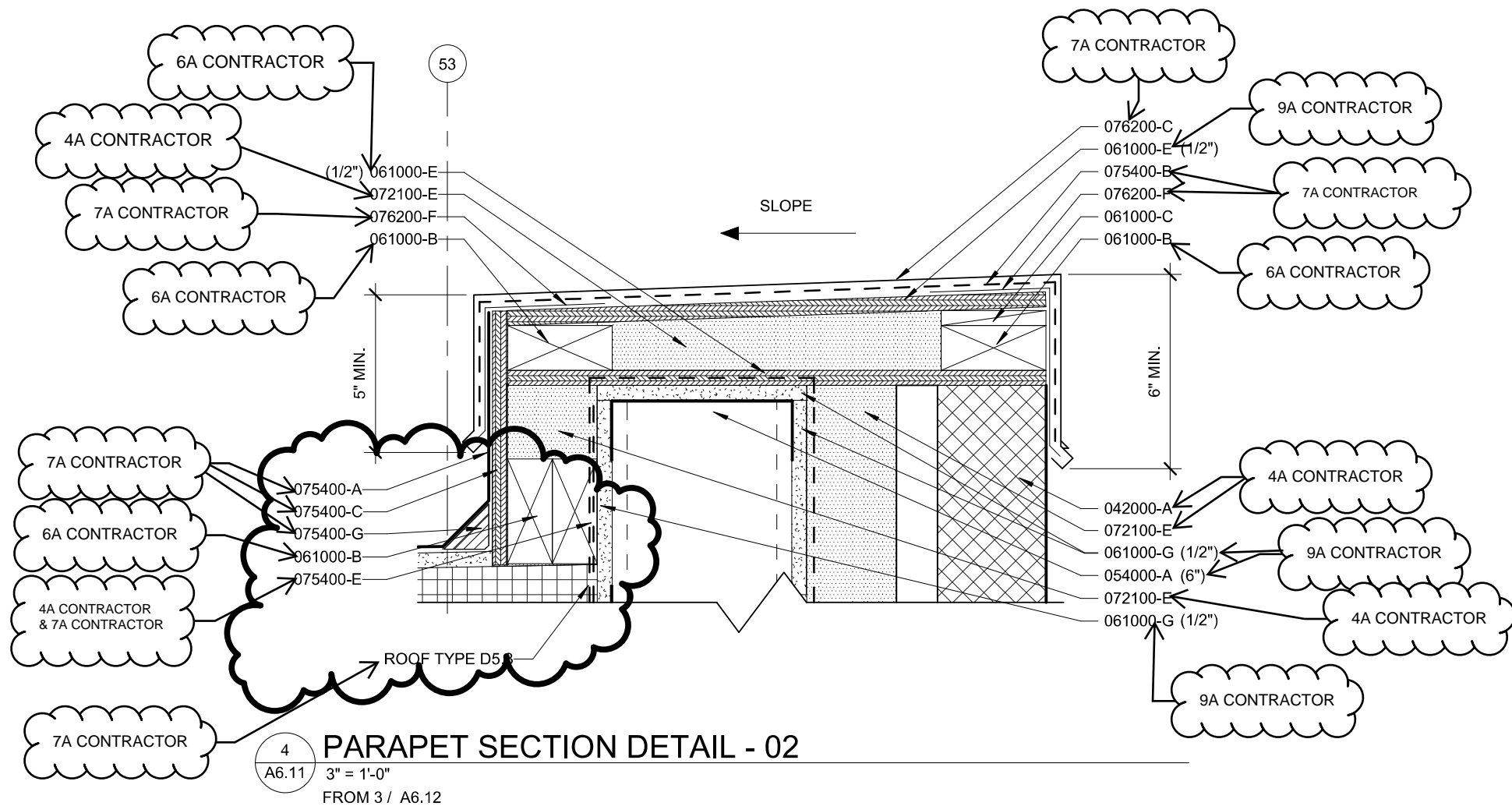
- 1.54 16A Contractor is responsible to furnish and install roof curbs for 16A equipment. 16A Contractor shall provide layout of roof curbs on roof for 6A Contractor to install wood blocking as required. If curb location requires support framing by 5A, 16A shall provide the size and location of the framing within 60 days of receiving the Notice to Proceed. If frame and curb locations are not coordinated with the 5A and 6A Contractors, the 16A Contractor will be responsible for any additional costs incurred by the 5A and 6A Contractors.

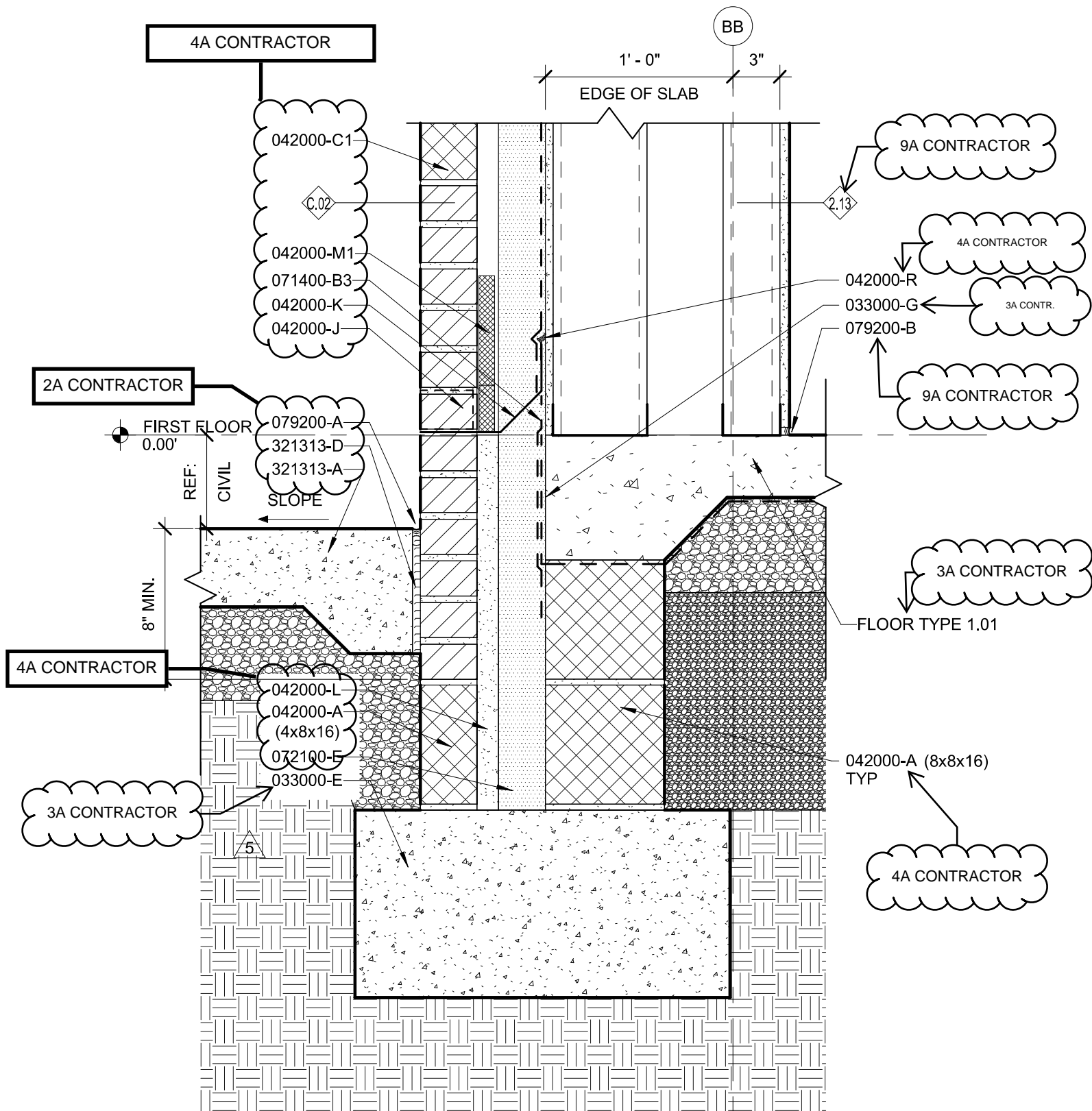


# SK-01



1  
 A6.3  
**PLAN DETAIL**  
 1 1/2" = 1'-0"  
 FROM 1 / A1.2



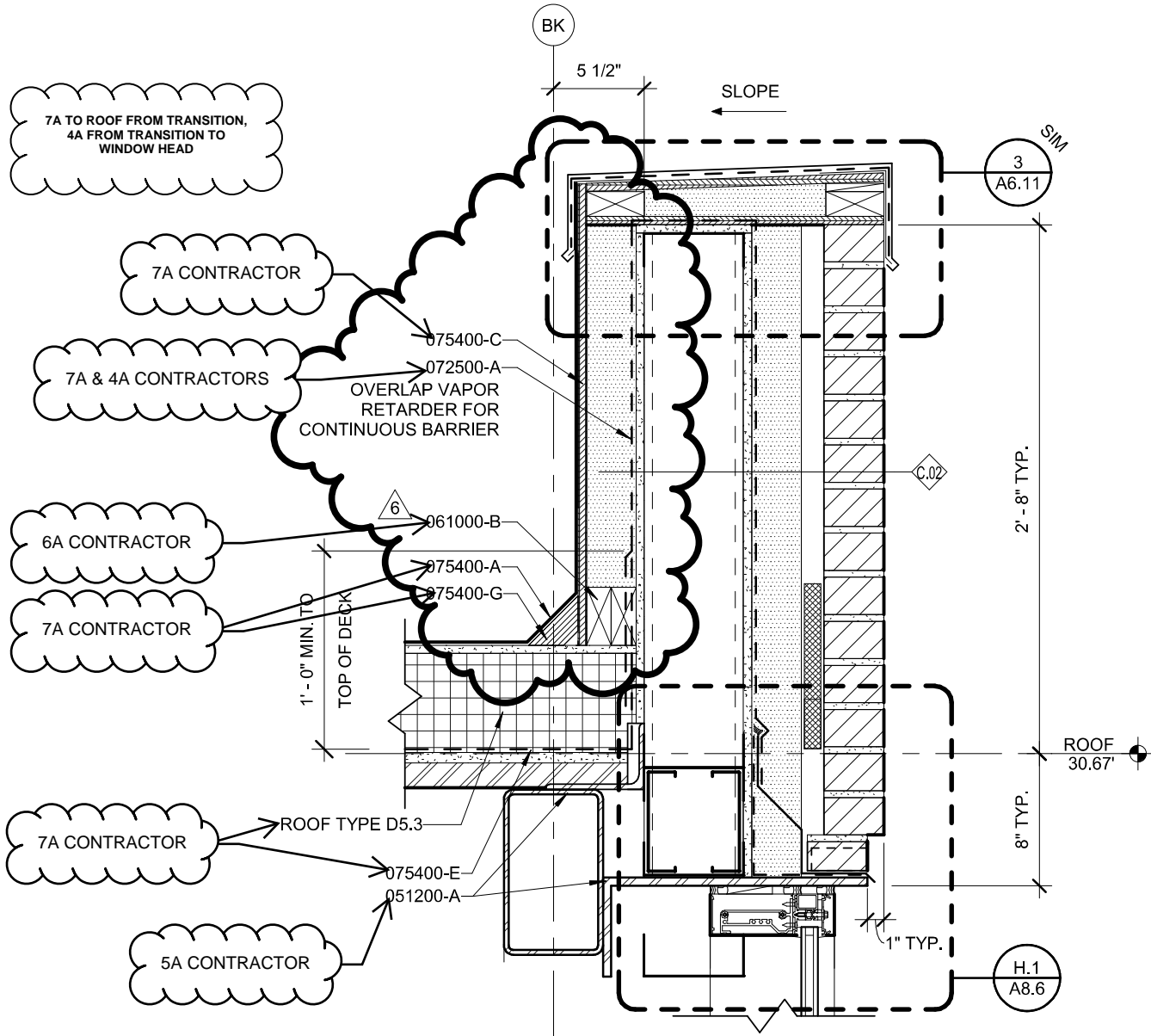


9 SECTION DETAIL

A6.11 1 1/2" = 1'-0"

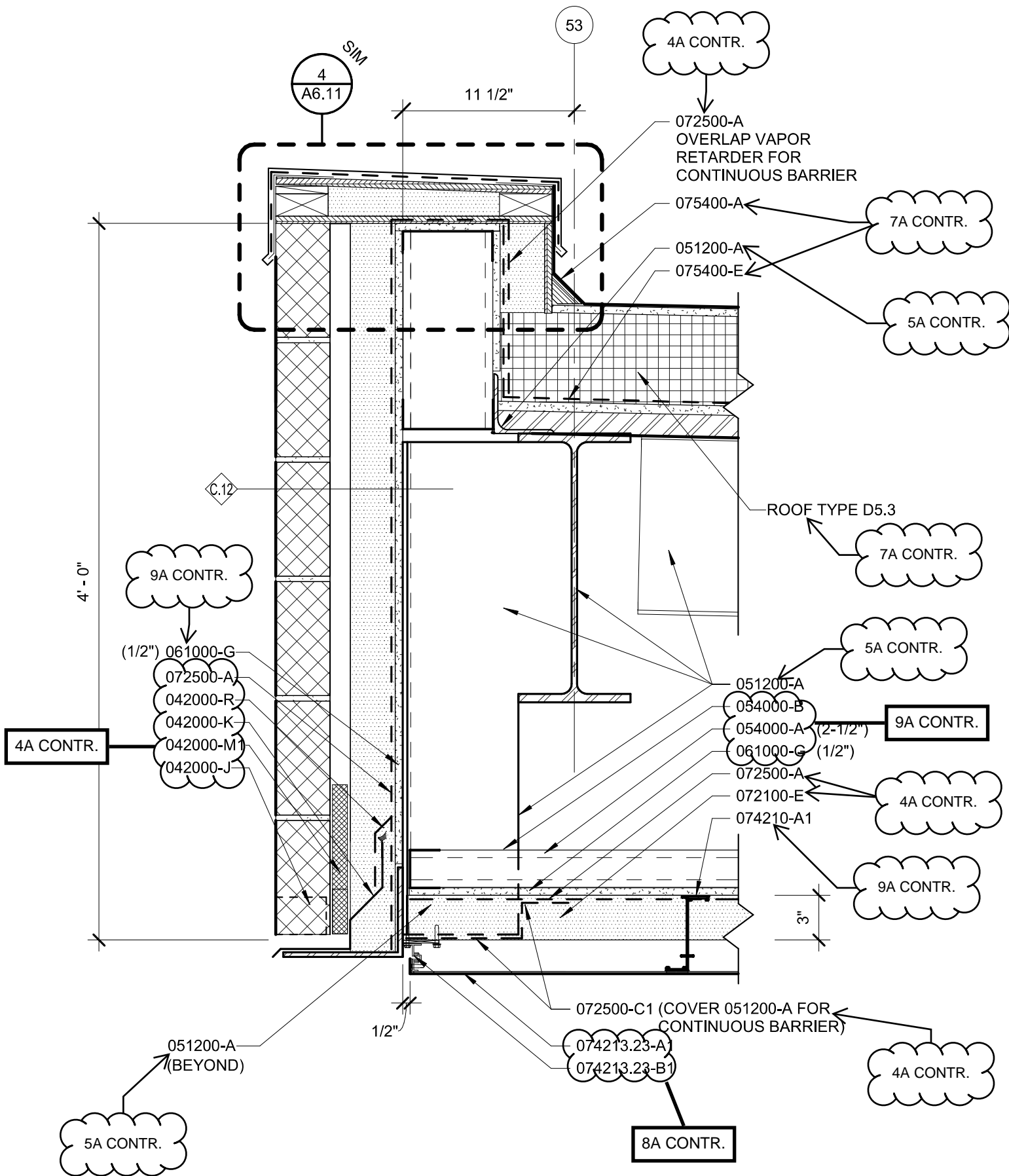
FROM 9 / A4.4

SK-04



4  
 A6.12    **SECTION DETAIL**  
 1 1/2" = 1'-0"  
 FROM 7 / A4.4



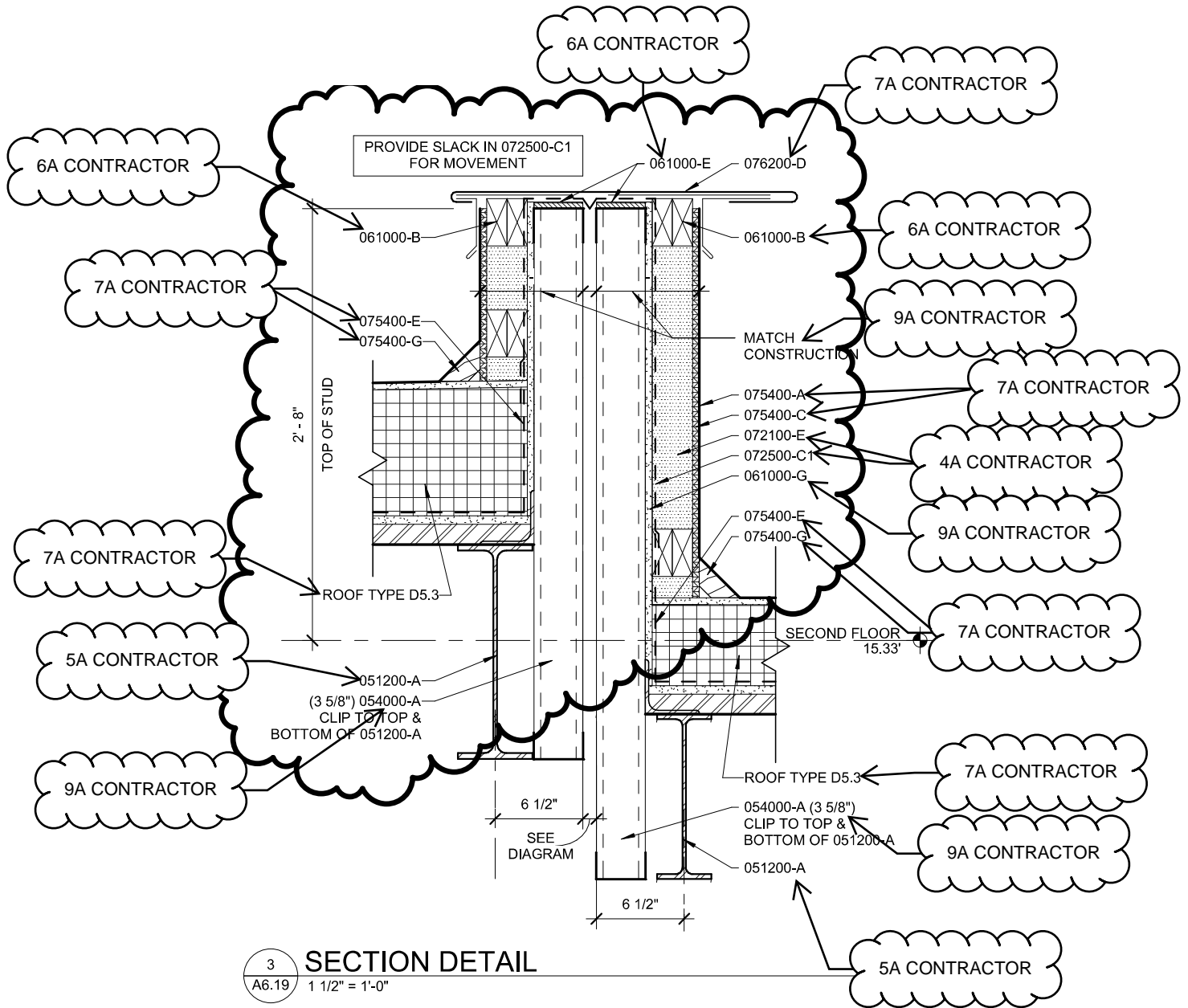


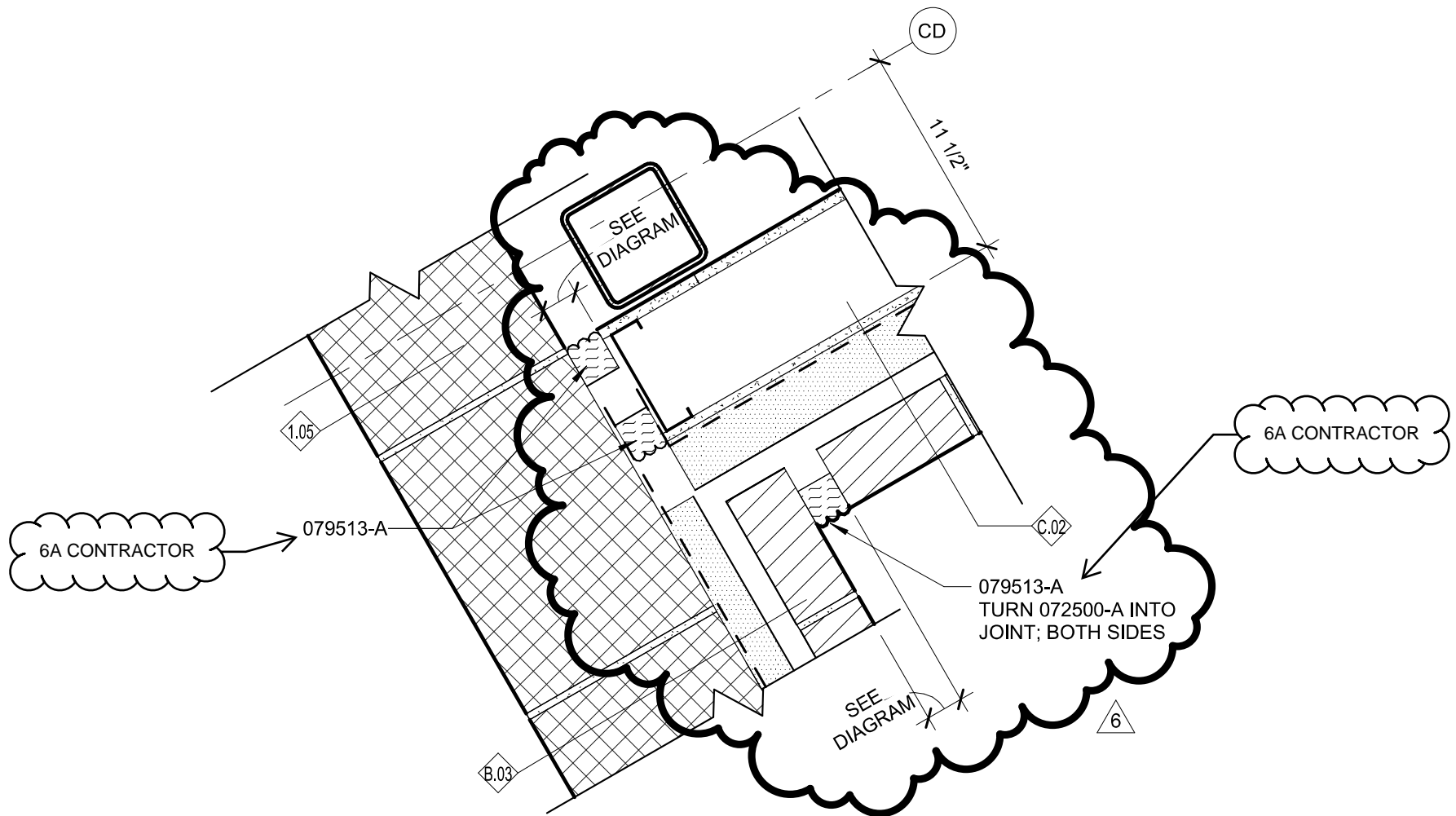
1  
A6.15

## SECTION DETAIL

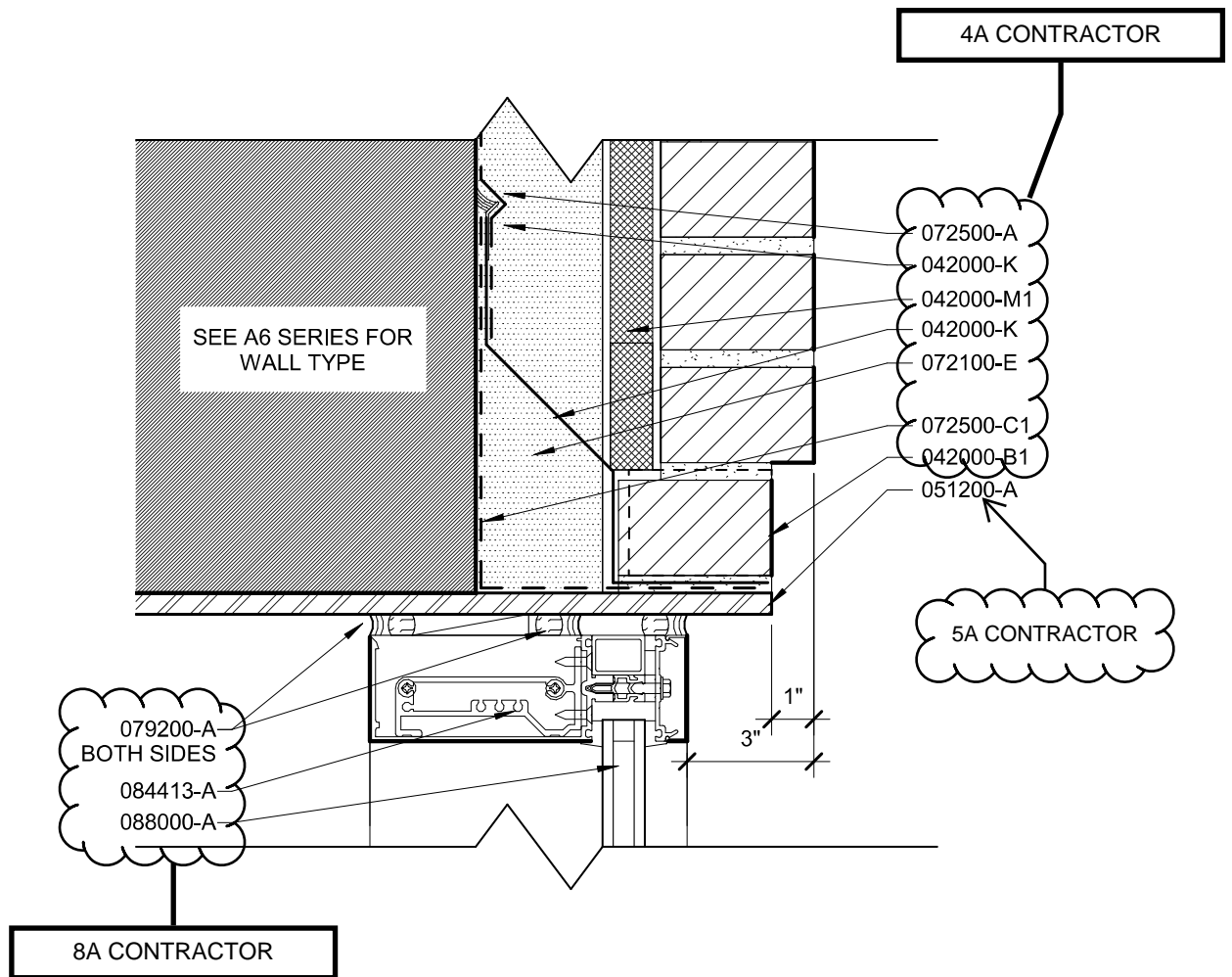
1 1/2" = 1'-0"  
FROM 2 / A4.5

SK-07

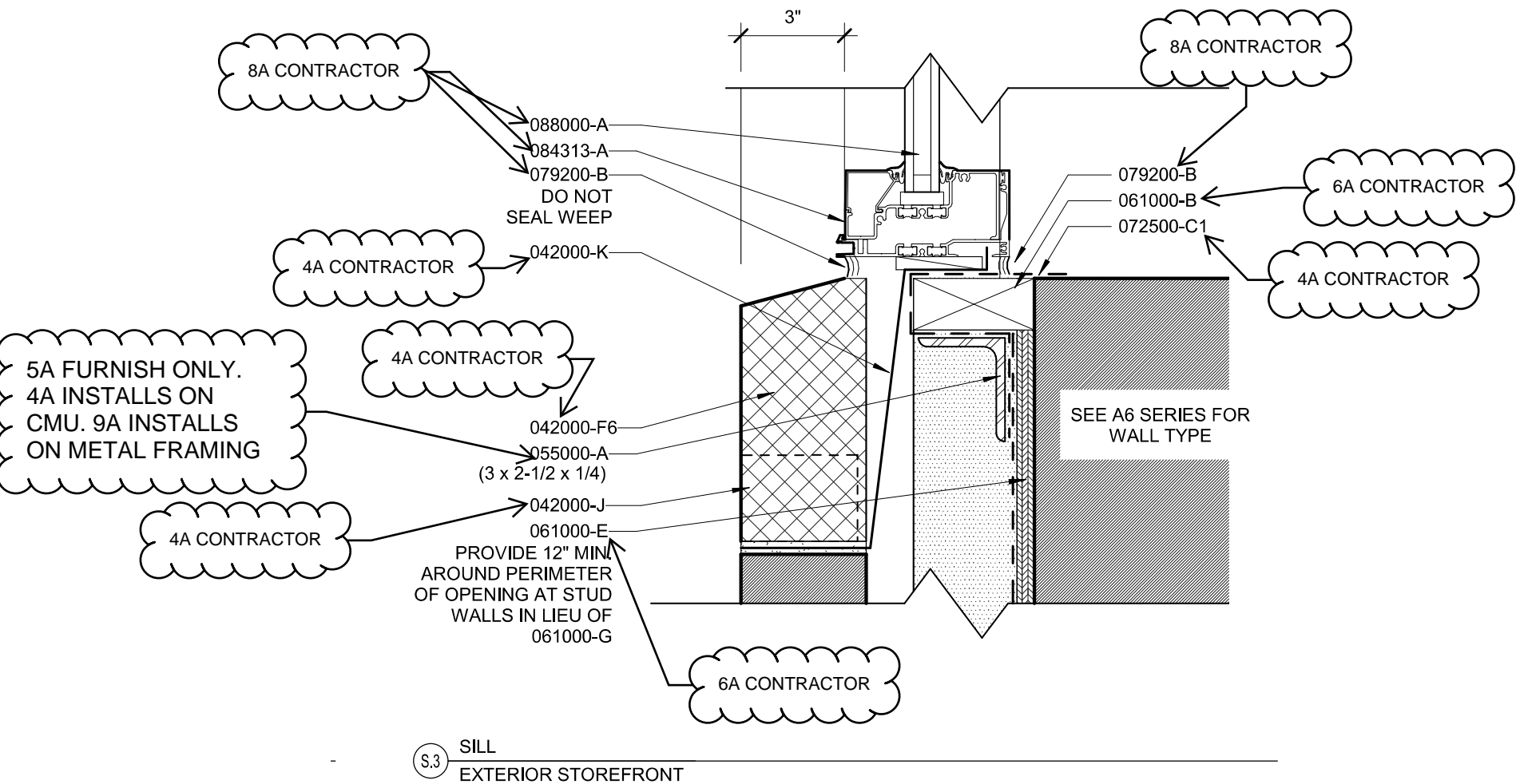




6 PLAN DETAIL  
A6.19 1 1/2" = 1'-0"  
FROM 1 / A1.4



(H.1) HEAD  
EXTERIOR CURTAIN WALL

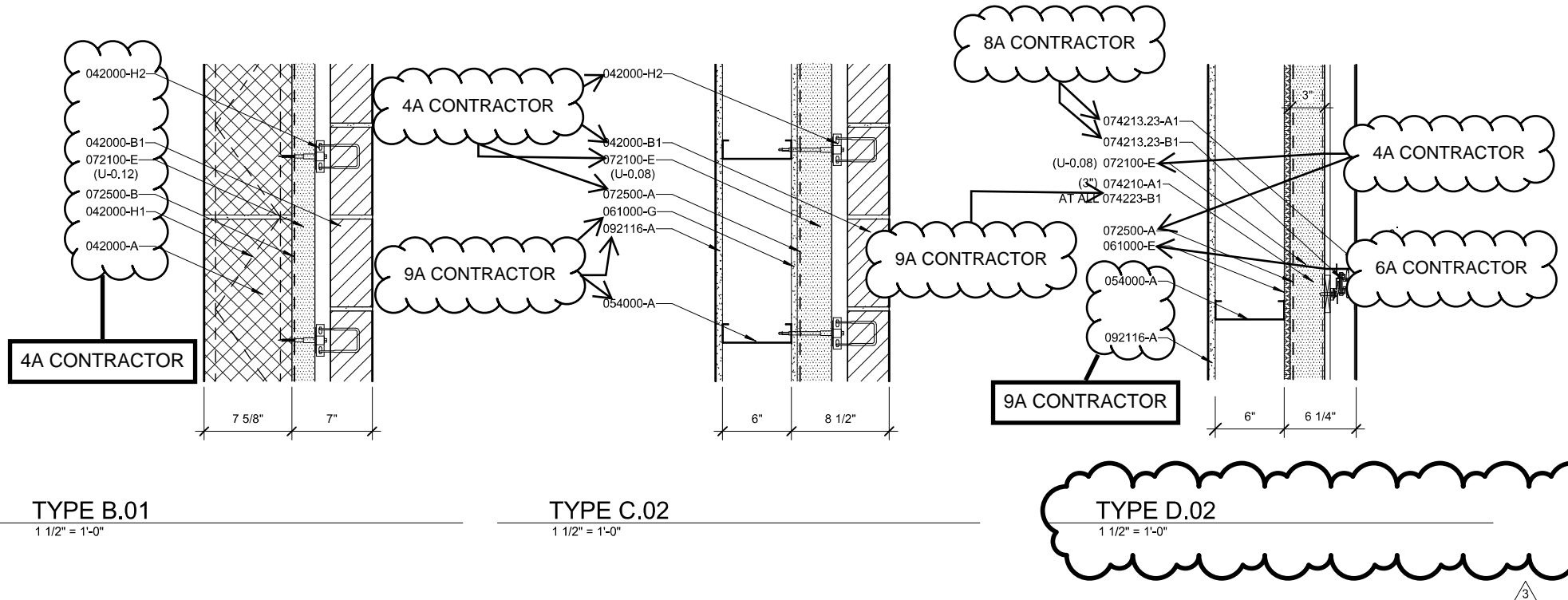


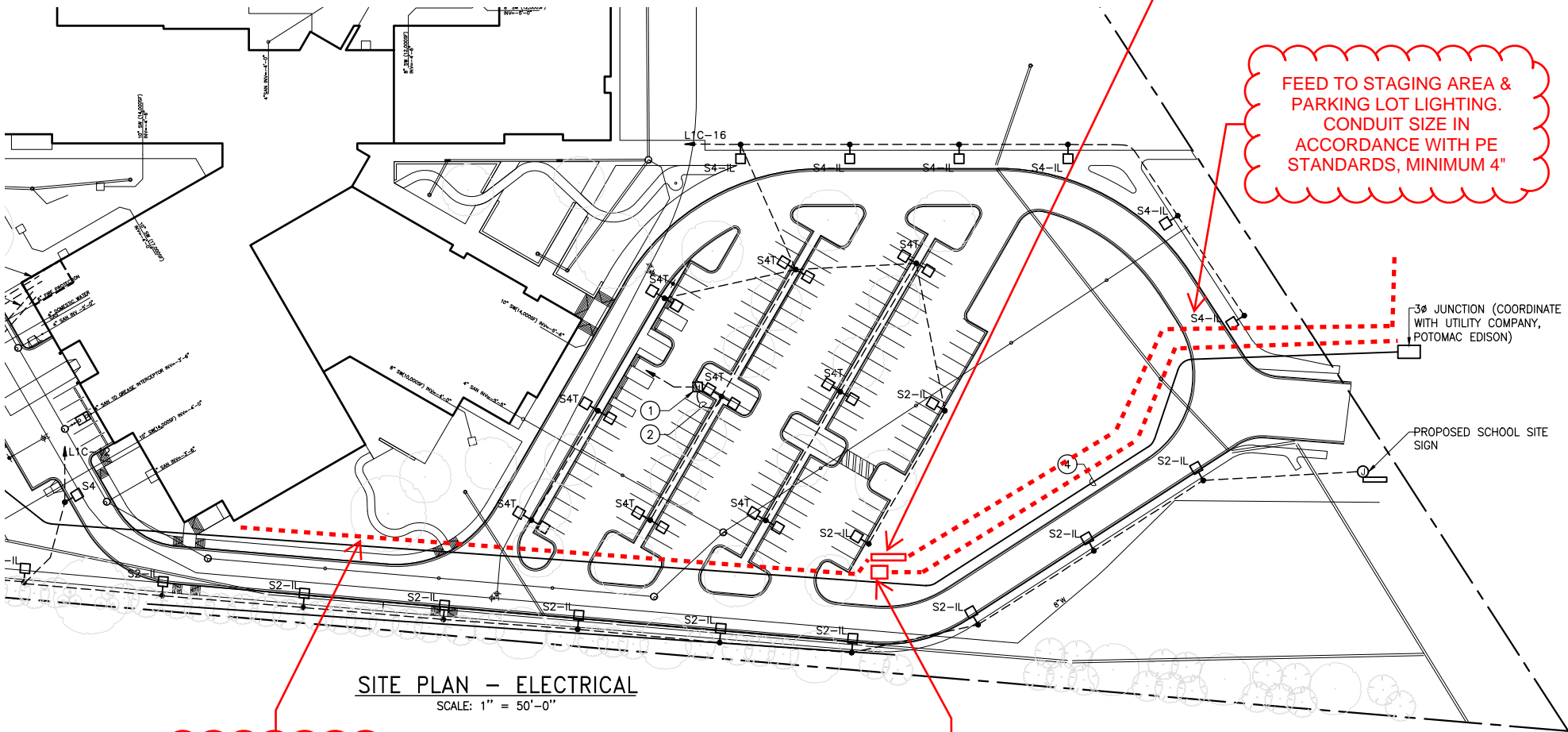
## WALL TYPES (EXTERIOR)

TYPE B MASONRY MASS

TYPE C METAL STUD CAVITY

TYPE D METAL STUD RAINSCREEN





**SITE PLAN - ELECTRICAL**  
SCALE: 1" = 50'-0"

800A TEMP SERVICE, FOUR (4) 200A DISCONNECTS, C/T, AND METER CAN. ALL FURNISHED AND INSTALLED BY 16A ON APPROVED RACK

FEED TO STAGING AREA & PARKING LOT LIGHTING. CONDUIT SIZE IN ACCORDANCE WITH PE STANDARDS, MINIMUM 4"

30 JUNCTION (COORDINATE WITH UTILITY COMPANY, POTOMAC EDISON)

PROPOSED SCHOOL SITE SIGN

FEED TO BUILDING FOR CONSTRUCTION. CONDUIT SIZE IN ACCORDANCE WITH PE STANDARDS, 4" MINIMUM.

TEMP ELECTRIC UTILITY XFMR FED FROM JUNCTION BOX

PE SUPPLIES TAP BOX, TRANSFORMER, TRANSFORMER PAD, AND METER.

Waverley Elementary School Replacement (1901)

201 Waverley Drive  
Frederick, Maryland 21702

PB-018 - Weather Barrier Substitution Request

## Subject

Weather Barrier Substitution Request

## Status

Closed ●

## Discipline

## Importance

## Location

## Created On

04/08/2020

## Due Date

04/15/2020

## Date Resolved

04/20/2020

## Author

Kerrigan Toth  
Oak Contracting LLC

## Resolved By

Jason Hearn  
GWWO, Inc.

**QUESTION** Kerrigan Toth on 4/8/2020 01:40 PM

See attached Substitution Request from TK Products.



File

ABAE Evaluated Le...  
Kerrigan Toth



File

CSI Substitution ...  
Kerrigan Toth



File

EED- TK-AirMax 2...  
Kerrigan Toth



File

TK-AirMax 2104 Va...  
Kerrigan Toth



File

FPA 285 TK Produ...  
Kerrigan Toth



File

TK-Climate Flash ...  
Kerrigan Toth



File

AirMax Project Re...  
Kerrigan Toth



File

AIRMAX Detail Dra...  
Kerrigan Toth

**COMMENT** Kerrigan Toth on 4/8/2020 01:43 PM

Sorry I could not combine the files into one pdf. There was one or more document that is allegedly password protected.

**COMMENT** Jason Hearn on 4/14/2020 02:13 PM (Edited by Jason Hearn on 4/20/2020 03:55 PM)

Proposed substitution appears to meet the requirements of the specification for fluid-applied air barrier coatings. The vapor permeability per ASTM E86 is fractionally less than the 18 perms, minimum, but should not adversely affect performance. Self-adhering air barrier sheets are to be used at exterior GWB conditions. Bidder/manufacturer must submit a sheet-applied product or confirm that the fluid-applied product in this substitution request is compatible with the sheet products listed in the specification.

**COMMENT** Kerrigan Toth on 4/15/2020 01:26 PM

Is this rejected or are you requesting additional information?

PB-018 - Weather Barrier Substitution Request

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**ANSWER** Jason Hearn on 4/15/2020 03:44 PM (Edited by Jason Hearn on 4/20/2020 03:55 PM)

There are two types of air barrier on the project, sheet & fluid. This submittal only has fluid. TK Products may not make a sheet; I'm not sure. If they don't, then the manufacturer needs to confirm that their coating and transition membrane are both compatible with the sheets listed. If you need a hard line answer, then it's rejected due to being incomplete.

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## **ASSIGNMENTS**

Jason Hearn (GWWO, Inc.) Done On 4/22/2020



Knowledge for Creating  
and Sustaining  
the Built Environment

## SUBSTITUTION REQUEST

(During the Bidding/Negotiating Stage)

Project: Waverley Elementary School Substitution Request Number: \_\_\_\_\_  
 To: GWWO, Inc From: Jim Libke - TK Products  
 Date: 4/8/2020  
 A/E Project Number: GWWO Project No. 18045  
 Re: \_\_\_\_\_ Contract For: \_\_\_\_\_  
 Specification Title: Weather Barriers Description: Permeable  
 Section: 07 25 00 Page: 3 & 4 Article/Paragraph: 2.3

Proposed Substitution: TK AirMax 2104 Water Based

Manufacturer: TK PRODUCTS Address: 11400 W. 47th St. Minnetonka, MN 55343 Phone: 800-441-2129  
 Trade Name: AirMax Model No.: 2104

Attached data includes product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.

Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.

Submitted by: JIM LIBKE  
 Signed by: *Jim Libke*  
 Firm: TK PRODUCTS  
 Address: 11400 W. 47TH STREET  
MINNETONKA, MN 55343  
 Telephone: 800-441-2129 OFFICE/ 612-868-3277 CELL

### A/E's REVIEW AND ACTION

- ☐ Substitution approved - Make submittals in accordance with Specification Section 01 25 00 Substitution Procedures.  
☐ Substitution approved as noted - Make submittals in accordance with Specification Section 01 25 00 Substitution Procedures.  
☐ Substitution rejected - Use specified materials.  
☐ Substitution Request received too late - Use specified materials.

Signed by: \_\_\_\_\_

Date: \_\_\_\_\_

Supporting Data Attached: ☐ Drawings ☐ Product Data ☐ Samples ☐ Tests ☐ Reports ☐ \_\_\_\_\_

Waverley Elementary School Replacement (1901)

201 Waverley Drive  
Frederick, Maryland 21702

PB-019 - Symbol/ Electrical Clarifications

## Subject

Symbol/ Electrical Clarifications

## Status

Closed ●

## Discipline

## Importance

## Location

## Created On

04/08/2020

## Due Date

04/15/2020

## Date Resolved

04/15/2020

## Author

Kerrigan Toth  
Oak Contracting LLC

## Resolved By

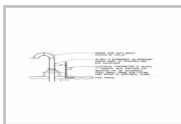
Jason Hearn  
GWWO, Inc.

## QUESTION Kerrigan Toth on 4/8/2020 03:52 PM

See attached RFI questions from Grounded Electric for your review and response.



File  
RFI #5.doc  
Kerrigan Toth



File  
Electrical Roof S...  
Kerrigan Toth

## COMMENT Kerrigan Toth on 4/8/2020 03:54 PM

Oak is concerned with referenced details on E6.3 from a structural standpoint. We feel support framing should be attached to the structure below and the conduit should be placed in a pitch pocket. Our structural concern is the related to the weight and height of the apparatus and the potential wind load placed on the fasteners and the curb structure. See attached detail from another project that we feel will provide additional structural support to mitigate the concerns listed above. Please consider changing details accordingly.

## ANSWER Jason Hearn on 4/15/2020 04:03 PM (Edited by Jason Hearn on 4/19/2020 09:37 PM)

See attached response to bidder.

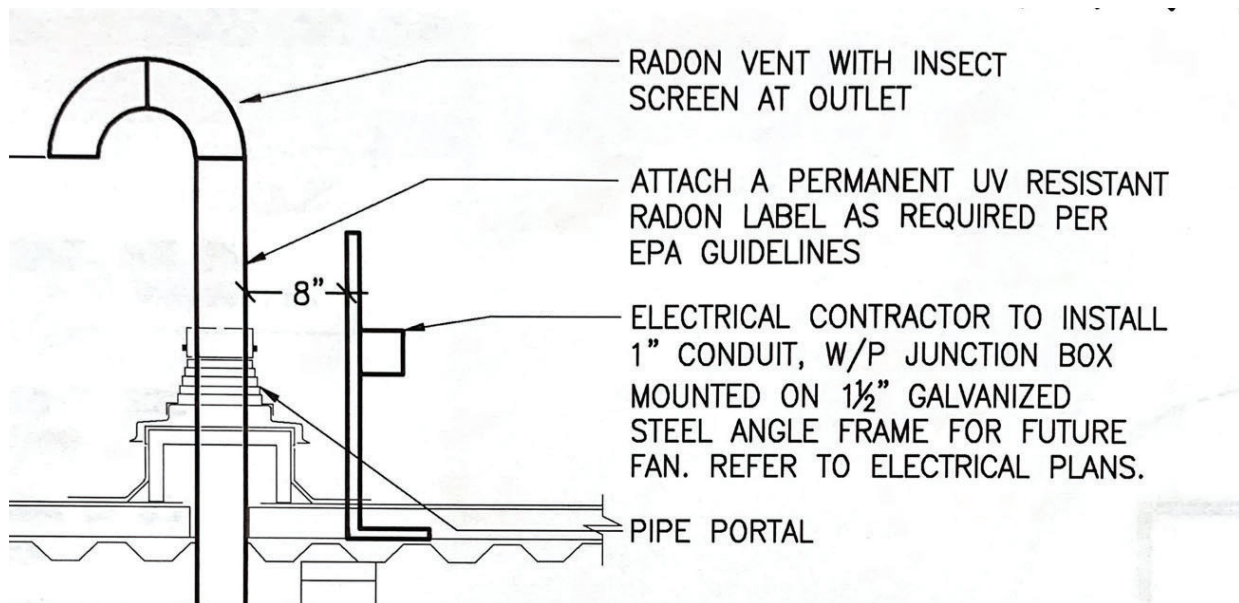
Response to Oak: The details on E6.3 are the same as those for BHES; no concerns were voiced during bid/design. Other projects have incorporated the same detail, plus mechanical has similar details as well. A pre-manufactured roof curb will be incorporated into this condition.



File  
RFI #5 (response)...  
Jason Hearn

## ASSIGNMENTS

Jason Hearn (GWWO, Inc.) Done On 4/22/2020



### REQUEST FOR INFORMATION

|          |               |            |          |           |      |
|----------|---------------|------------|----------|-----------|------|
| Project: | Waverley E.S. | Attention: | FCPS/Oak | RFI #:    | 5    |
| Subject: | Electrical    | Date:      | 4/7/2020 | Reply By: | ASAP |
|          |               |            |          |           |      |

### REQUEST

1. What is "RA" in a square with subscript "M" in room E102 on E3.5?
2. What is the solid triangle in F103 on E3.6? If this is a phone line, it is not shown on TE1.6.
3. What is "RA" in a square with subscript "R" in A200A on E3.7?
4. What is "RA" in a square with subscript "R" in F200A on E3.9?
5. Where is the remote generator annunciator to be located (drawing note 6, E5.2)?
6. Please confirm the roofing contractor is responsible to provide the conduit penetrations through roof deck (1/E6.3) and roof curbs as shown on 4/E6.3 and 6/E6.3.

### RESPONSE

1. Rescue Assistance Headend Unit.
2. Phone to elevator
3. Rescue Assistance Receiver
4. Rescue Assistance Receiver
5. Needs to be coordinated with owner during construction.
6. Electrical Contractor is responsible for the penetrations and curbs per the details, the roofing contractor will flash the penetrations typical of all other curbs on the job.

Copy To: \_\_\_\_\_  
 \_\_\_\_\_

Signed: Zach Rothfus, CPE, LEED AP BD+C  
 Date: 4/7/20

**REQUEST FOR INFORMATION**

|          |               |            |          |           |      |
|----------|---------------|------------|----------|-----------|------|
| Project: | Waverley E.S. | Attention: | FCPS/Oak | RFI #:    | 5    |
| Subject: | Electrical    | Date:      | 4/7/2020 | Reply By: | ASAP |
|          |               |            |          |           |      |

**REQUEST**

1. What is "RA" in a square with subscript "M" in room E102 on E3.5?
2. What is the solid triangle in F103 on E3.6? If this is a phone line, it is not shown on TE1.6.
3. What is "RA" in a square with subscript "R" in A200A on E3.7?
4. What is "RA" in a square with subscript "R" in F200A on E3.9?
5. Where is the remote generator annunciator to be located (drawing note 6, E5.2)?
6. Please confirm the roofing contractor is responsible to provide the conduit penetrations through roof deck (1/E6.3) and roof curbs as shown on 4/E6.3 and 6/E6.3.

**RESPONSE**

Copy To: \_\_\_\_\_

\_\_\_\_\_

Signed: Zach Rothfus, CPE, LEED AP BD+C

Date: 4/7/20



Waverley Elementary School Replacement (1901)

201 Waverley Drive  
Frederick, Maryland 21702

PB-024 - Electrical Clarifications

| Subject                   |            | Status        |
|---------------------------|------------|---------------|
| Electrical Clarifications |            | Closed ●      |
| Discipline                | Importance | Location      |
| Created On                |            | Date Resolved |
| 04/09/2020                |            | 04/21/2020    |
| Due Date                  |            |               |
| 04/16/2020                |            |               |
| Author                    |            | Resolved By   |
| Kerrigan Toth             |            | Jason Hearn   |
| Oak Contracting LLC       |            | GWWO, Inc.    |

**QUESTION** Kerrigan Toth on 4/9/2020 02:57 PM

See attached questions from Grounded Electrical for you review and response.



File  
RFI #6.doc  
Kerrigan Toth

**COMMENT** Kerrigan Toth on 4/9/2020 02:59 PM

Oak's response to Question 9 is as follows; 6A Contractor is responsible for plywood in MDF/IDF rooms.

The remainder of the questions are to be responded to by GWWO.

**ANSWER** Jason Hearn on 4/19/2020 09:43 PM (Edited by Jason Hearn on 4/21/2020 08:45 AM)

PB-024 - Electrical Clarifications

1. Utilize the "Suspended Receptacle Detail" for RI #10.
2. FDN-709-A/711-A.
3. Hardwired connection – the note on the schedule indicates that the raceways manufacturer provides cord and plugs for the EC to install, and to refer to K-502 for additional information.
4. Refer to K-104 for the rough-in requirements, the junction boxes indicated on the E-dwg are correct.
5. Refer to K-104 for clarification – only RI #15, shall receive twist lock plug; RI #13 will have note (3) associated with it.
6. Since the Exhaust Canopy is a non-grease hood, it does not require a fire protection system. The "Remote Fire Protection Pull Station Detail" will be removed from the drawings.
7. Most kitchen equipment cord and plugs will be provided by the manufacturer. For Item #21 Pass-thru Heated Cabinet, electrical contractor would have to provide a cord and plug.
8. DELETE THE SYMBOL "TOUCHSCREEN DISPLAY SOUND SYSTEM SPEAKER" FROM THE LEGEND ON TE0.1
10. The rooftop antenna and associated penetration shall be located on the roof over MDF Room M105. Refer to Note #8 on sheet Riser Diagram on TE0.2



File  
ITEM 3.png  
Jason Hearn

**ASSIGNMENTS**

Jason Hearn (GWWO, Inc.) Done On 4/22/2020

Kerrigan Toth (Oak Contracting LLC) Done On 4/22/2020



**REQUEST FOR INFORMATION**

|          |               |            |          |           |      |
|----------|---------------|------------|----------|-----------|------|
| Project: | Waverley E.S. | Attention: | FCPS/Oak | RFI #:    | 6    |
| Subject: | Electrical    | Date:      | 4/9/2020 | Reply By: | ASAP |
|          |               |            |          |           |      |

**REQUEST**

1. RI #10 on E4.1 indicates a cord reel, however the detail on the same drawing shows a cord drop. Please confirm a cord drop is required, not a cord reel.
2. Please provide manufacturer and catalog numbers for the kitchen tombstone devices shown on E4.1.
3. RI #11 on E4.1 indicates a cord and plug is required by note (2); however the connection matrix indicates junction box (hardwired). Which is correct?
4. RI #19 on E4.1 indicates a tombstone is required by note (5); however the connection matrix indicates junction box (hardwired). Which is correct?
5. RI #13, 14 & 15 on E4.1 indicate a twist lock plug is required by note (4); however the connection matrix indicates junction box (hardwired). Which is correct?
6. The remote fire protection pull station detail on E4.1 isn't shown on the floor plan on E4.1. Please indicate where this device is located.
7. Please confirm the kitchen vendor is responsible to provide all cords and plugs for their equipment, and the electrical contractor is responsible for the receptacles.
8. Touch screen display symbol on TE0.1 says to refer to detail this drawing. There is no detail for this symbol on drawing TE0.1.
9. What contractor is responsible for the plywood along the telecommunication rooms?
10. Detail 10/TE4.2 is not shown on the floor plans. Is this required? If so please indicate where it is to be installed on the floor plans.

**RESPONSE**

Copy To: \_\_\_\_\_  
 \_\_\_\_\_

Signed: Zach Rothfus, CPE, LEED AP BD+C  
 Date: 4/9/20



Waverley Elementary School Replacement (1901)

201 Waverley Drive  
Frederick, Maryland 21702

PB-025 - Domestic Water Piping

| Subject               |            | Status        |
|-----------------------|------------|---------------|
| Domestic Water Piping |            | Closed ●      |
| Discipline            | Importance | Location      |
| Created On            |            | Date Resolved |
| 04/10/2020            |            | 04/20/2020    |
| Due Date              |            |               |
| 04/17/2020            |            |               |
| Author                |            | Resolved By   |
| Kerrigan Toth         |            | Jason Hearn   |
| Oak Contracting LLC   |            | GWWO, Inc.    |

**QUESTION** Kerrigan Toth on 4/10/2020 09:42 AM

See question below from Towson Mechanical:

If all sizes are not available in pex domestic water piping relative to alternate #6, can copper pipe type "L" be incorporated into the base bid pricing?

**ANSWER** Jason Hearn on 4/20/2020 11:24 AM

Yes, a combination of PEX and copper type L piping is acceptable to provide the most cost effective solution under base bid.

## ASSIGNMENTS

Jason Hearn (GWWO, Inc.) Done On 4/22/2020



Request for Information  
Detailed with Comments and Links  
**PB-026**

Waverley Elementary School Replacement (1901)

201 Waverley Drive  
Frederick, Maryland 21702

PB-026 - Generator

**Subject**

Generator

**Status**

Closed ●

**Discipline**

**Importance**

**Location**

**Created On**

04/13/2020

**Due Date**

04/20/2020

**Date Resolved**

04/20/2020

**Author**

Kerrigan Toth  
Oak Contracting LLC

**Resolved By**

Jason Hearn  
GWWO, Inc.

**QUESTION** Kerrigan Toth on 4/13/2020 09:34 AM

See attached questions from Fidelity Power Systems for your review and response.



File  
Fidelity RFI - Wa...  
Kerrigan Toth

**ANSWER** Jason Hearn on 4/20/2020 03:57 PM

1. Yes
2. Lead-acid is acceptable
3. Space heater is not required.
4. Accessories are not required.
5. Yes
6. Mechanical lugs are acceptable.
7. Delayed transition is preferred, to allow motor loads to decay upon reset from emergency generator power to normal power.

**ASSIGNMENTS**

Jason Hearn (GWWO, Inc.) Done On 4/22/2020



Date: 04/10/20

Reference: Waverly Elem School

1. Section 263213.16, 1.5 B. and also 2.2 A. specifies the generator shall be provided with seismic certification. Please confirm if this is required on this project for the 100-kW natural gas generator?
2. Section 263213.16, 2.4 H. 4. Specifies the generator shall be provided with nickel cadmium type starting batteries. This is not typically industry standard. Typically, generator will be provided with lead acid starting batteries only. Nickel cadmium type batteries are very expensive and also would not fit inside the generator enclosure for this 100-kW unit. Please confirm nickel cadmium type batteries can be excluded for the generator and lead acid type batteries are acceptable alternative as lead acid will fit inside the generator enclosure?
3. Section 263213.16, 2.09 E. specifies generator is to be provided with an enclosure space heater to prevent condensation. This enclosure space heater is not an available option on a 100-kW natural gas generator. Unit will be provided with an engine block heater and also alternator strip heater to aid in condensation buildup. Please confirm space heater can be excluded?
4. Section 263213.16, 2.09 F. and J. specifies the generator enclosure to be provided with interior LED AC/DC lights and GFCI outlets. These accessories are not typically available on this small a 100-kW unit. Generator enclosure will not be a walk-in style so please confirm interior lighting and GFCI outlets can be excluded from this 100-kw enclosure?
5. Section 263600, 1.4 A. specifies the ATS shall be provided with seismic certification. Please confirm if seismic certification of ATS is required for this project?
6. Section 263600, 2.2 C. 7. Specifies compression style lugs. The basis of design Kohler automatic transfer switches are not available with compression style lugs, please confirm mechanical type lugs are acceptable for both ATS on this job?
7. Section 263600, 2.2 D. specifies the ATS shall be provided with delayed transition type transfer switches with intermediate center off position. Please confirm if this is required for both ATS or are open transition in-phase monitor transfer switches without intermediate position acceptable for this project?





Waverley Elementary School Replacement (1901)

201 Waverley Drive  
Frederick, Maryland 21702

PB-028 - Drawing Clarifications

## Subject

Drawing Clarifications

## Status

Closed ●

## Discipline

## Importance

## Location

## Created On

04/14/2020

## Due Date

04/21/2020

## Date Resolved

04/21/2020

## Author

Kerrigan Toth  
Oak Contracting LLC

## Resolved By

Jason Hearn  
GWWO, Inc.

**QUESTION** Kerrigan Toth on 4/14/2020 08:07 AM (Edited by Kerrigan Toth on 4/14/2020 08:08 AM)

See attached from Grounded Electrical for your review and response.



File  
RFI #8.doc  
Kerrigan Toth

**ANSWER** Jason Hearn on 4/20/2020 03:55 PM (Edited by Jason Hearn on 4/21/2020 08:48 AM)

1. Provide three 4" conduits per detail #7 on TE4.1.
2. Yes, Add Note #7 to conduits between handholes H1 and H3 on sheet TE0.2.
3. Correct, it's for any exterior conduit installed by the EC, that is not a service.

## ASSIGNMENTS

Jason Hearn (GWWO, Inc.) Done On 4/22/2020

| REQUEST FOR INFORMATION   |               |            |           |           |      |
|---|---------------|------------|-----------|-----------|------|
| Project:  | Waverley E.S. | Attention: | FCPS/Oak  | RFI #:    | 8    |
| Subject:  | Electrical    | Date:      | 4/14/2020 | Reply By: | ASAP |
|   |               |            |           |           |      |
| REQUEST   |               |            |           |           |      |
| 1. Detail 1/TE4.1 shows (4) 4" conduits; however detail 7/TE4.1 shows (3) 4" conduits. Which is correct?<br>2. Should drawing note 7 also apply to the conduit run between handhole H1 and H3?<br>3. Where does detail 3/E6.1 apply? We assuming site lighting. |               |            |           |           |      |
| RESPONSE  |               |            |           |           |      |

Copy To: \_\_\_\_\_  
 \_\_\_\_\_

Signed: Zach Rothfus, CPE, LEED AP BD+C  
 Date: 4/14/20



Request for Information  
Detailed with Comments and Links  
**PB-029**

Waverley Elementary School Replacement (1901)

201 Waverley Drive  
Frederick, Maryland 21702

PB-029 - Division 08 Clarifications

| Subject                              |            | Status                                      |
|--------------------------------------|------------|---|
| Division 08 Clarifications           |            | Closed <span style="color: green;">●</span> |
| Discipline                           | Importance | Location                                    |
| Created On                           |            | Date Resolved                               |
| 04/14/2020                           |            | 04/19/2020                                  |
| Author                               |            | Resolved By                                 |
| Kerrigan Toth<br>Oak Contracting LLC |            | Jason Hearn<br>GWWO, Inc.                   |

**QUESTION** Kerrigan Toth on 4/14/2020 12:13 PM

See questions below from Glass Industries:

1. Section 084313 2.5.B notes a custom color finish while 084413 2.5.B notes a standard color finish. Is it correct that storefront will be custom and curtain wall will be standard. Both sections also note a, "two color option". Does that mean that both storefront and curtain wall will use two colors each?
2. Is the cost of field testing to be covered by the owner or the 8A contractor for storefront and curtain wall? Section 084313 3.4 seems to be by 8A, but 084413 3.4.F notes that the testing will be owner engaged.
3. Is door C102G to be included on the project? We were unable to locate it, and the description of location is B100A to B110, which would appear to be where door B110 is located.
4. Door E102A is noted as being a wood door in an aluminum storefront frame. Is that correct?
5. Doors C101A and C101B are noted as wood doors in fire rated storefront frames. Is that correct or should these doors be aluminum per specification section 084013?
6. Please confirm there are no exterior sun control devices on the project as noted in 8A scope item 1.06.
7. 8A scope item 1.17 notes that the 7A contractor is to include formed metal wall panels including soffits. 8A is to include metal composite material wall panels, but there is no mention of soffits. Please confirm that if soffits are made of metal composite material, they should be by 8A.
8. 8A scope item 1.23 notes that 4A or 5A is to furnish all, "relieving angles". Please confirm that this includes angles in the wall cavity, and that 8A is not responsible for any cavity angles.
9. On sheet A8.1 there are multiple doors labeled as having fire rated GL12 glass, but nothing is listed in the fire rating column. If these doors are to be rated, please supply the required rating time.

PB-029 - Division 08 Clarifications

---

**COMMENT** Kerrigan Toth on 4/14/2020 12:14 PM

Oak responses are as follows. All other questions will be per GWWO.

Question #6. See 081443 C noted on A 6.13

Question #7. 8A Contractor is responsible for all metal composite materials, including soffits.

Question #8. Referenced scope item is clear. 5A provides steel relieving, sill, jamb, and parapet angles that are shown on the contract documents. Relieving angles noted in this scope item are specific to brick relieving angles. Either 4A or 9A installs depending on the substrate they are shown to be fastened to. Any angle not shown but required for installation of 8A work, is the responsibility of the 8A Contractor. 8A Contractor is responsible for all clips or relieving angles required to install CW's and SF's.

---

**ANSWER** Jason Hearn on 4/19/2020 09:13 PM (Edited by Jason Hearn on 4/19/2020 09:30 PM)

1. Item 2.5 B in 08 4413 states a color from the manufacturer's "full range," which includes custom colors. Yes, both are to have identical two-color options. See response to PB-RFI #021 in Addendum #5.

2. Prime contractor is to cover field testing of both aluminum storefront and aluminum curtain walls; section 08 4413 will be revised as part of a future addendum.

3. A modeled wall was duplicated in place where B110 is located, hence the bi-directional swing depicted on A1.2. This wall and door have been deleted from both the plans and schedule.

4. No, this should be a glazed aluminum storefront door. This will be revised as part of a future addendum.

5. Correct. The article in specification section 08 4013 pertaining to doors will be revised as part of a future addendum.

9. Applicable fire ratings for these openings will be included in a future addendum.

---

## ASSIGNMENTS

Kerrigan Toth (Oak Contracting LLC) Done On 4/22/2020

Jason Hearn (GWWO, Inc.) Done On 4/22/2020



Waverley Elementary School Replacement (1901)

201 Waverley Drive  
Frederick, Maryland 21702

PB-030 - Roof Clarifications

| Subject                              |            | Status                    |
|--------------------------------------|------------|---------------------------|
| Roof Clarifications                  |            | Closed ●                  |
| Discipline                           | Importance | Location                  |
| Created On                           |            | Date Resolved             |
| 04/14/2020                           |            | 04/19/2020                |
| Author                               |            | Resolved By               |
| Kerrigan Toth<br>Oak Contracting LLC |            | Jason Hearn<br>GWWO, Inc. |

**QUESTION** Kerrigan Toth on 4/14/2020 12:17 PM

See questions below from Heidler Roofing:

1. Please confirm the use of wood cant strips at all roof angle changes. This is only used on built-up roof systems and is not required or preferred per roofing manufactures specifications.
2. Please clarify the 5/8" sump slope at the drains. 1/2" sloped sumps at the drains is all that is required.

**ANSWER** Jason Hearn on 4/19/2020 09:09 PM

1. For 80-mil TPO, which is specified for this project, 90-degree angles or less put significant stress on the adhesive, causing it to fail over time. Feedback from other contractors has been that bending 80-mil TPO to said angles is extremely difficult, so cants are to remain as shown.
2. Provide 5/8" minimum as shown.

## ASSIGNMENTS

Jason Hearn (GWWO, Inc.) Done On 4/22/2020



Waverley Elementary School Replacement (1901)

201 Waverley Drive  
Frederick, Maryland 21702

PB-032 - Metal Deck

| Subject                              |            | Status                    |
|--------------------------------------|------------|---------------------------|
| Metal Deck                           |            | Closed ●                  |
| Discipline                           | Importance | Location                  |
| Created On                           |            | Date Resolved             |
| 04/14/2020                           |            | 04/16/2020                |
| Author                               |            | Resolved By               |
| Kerrigan Toth<br>Oak Contracting LLC |            | Jason Hearn<br>GWWO, Inc. |

**QUESTION** Kerrigan Toth on 4/14/2020 05:34 PM

See question below from Canyon Contracting:

03A Package – Please clarify if the slab on metal decks are designed to be shored or not.

**ANSWER** Jason Hearn on 4/16/2020 04:08 PM

Slab on metal decks are designed to be unshored.

## ASSIGNMENTS

Jason Hearn (GWWO, Inc.) Done On 4/22/2020



Request for Information  
Detailed with Comments and Links  
**PB-036**

Waverley Elementary School Replacement (1901)

201 Waverley Drive  
Frederick, Maryland 21702

PB-036 - Piping

| Subject   |            | Status  |
|---|------------|---|
| Piping  |            | Closed ●  |
| Discipline  | Importance | Location  |
| <b>Created On</b><br>04/14/2020                       |            | <b>Date Resolved</b><br>04/16/2020              |
| <b>Author</b><br>Kerrigan Toth<br>Oak Contracting LLC |            | <b>Resolved By</b><br>Jason Hearn<br>GWWO, Inc. |

**QUESTION** Kerrigan Toth on 4/14/2020 05:58 PM

See below from TMI and advise if acceptable:

We understand that the pen pipe products do not offer Union in the 2" size and smaller. We intend to use a sweat union with pex pipe adaptors soldered into each side of the Union. The same method would be used for valves of the size 2" and smaller.

**ANSWER** Jason Hearn on 4/16/2020 01:05 PM

Acceptable; no exceptions.

### ASSIGNMENTS

Jason Hearn (GWWO, Inc.) Done On 4/22/2020



Request for Information  
Detailed with Comments and Links  
**PB-037**

Waverley Elementary School Replacement (1901)

201 Waverley Drive  
Frederick, Maryland 21702

PB-037 - 6A Clarifications

**Subject**

6A Clarifications

**Status**

Closed ●

**Discipline**

**Importance**

**Location**

**Created On**

04/14/2020

**Due Date**

04/21/2020

**Date Resolved**

04/19/2020

**Author**

Kerrigan Toth  
Oak Contracting LLC

**Resolved By**

Jason Hearn  
GWWO, Inc.

**QUESTION** Kerrigan Toth on 4/14/2020 07:35 PM

See attached questions from Callas Contractors for your review and response.



File  
RFI #1.doc  
Kerrigan Toth

**COMMENT** Kerrigan Toth on 4/14/2020 07:36 PM

Question 1. Per Oak Contracting, see response to PB RFI -022 issued in addendum #5. 6A will be responsible for plywood.

Question 2. Per Oak Contracting, see response to PB RFI -022 issued in addendum #5. Wood Framing will be added to the detail. Wood framing will be by 6A Contractor.

GWWO to provide response to question 3 thru 7.

**ANSWER** Jason Hearn on 4/19/2020 09:05 PM (Edited by Jason Hearn on 4/21/2020 09:00 AM)

3. Door A103 is the same function and types as door F117; additional information will be provided as part of a future addendum.

4. No.

5. Door 015 is an overhead coiling door as noted in the schedule. Details 6 and 8/A8.2 show the head and jamb conditions augmented in Addendum #3. See specification Section 08 3323 for more information.

6. All items are keynoted in the detail or in the wall type for C.02 on sheet AC.1.

7. All items in the drawings are in the contract unless they are listed in the "N.I.C." schedule on A7.0A or noted as "N.I.C."

## **ASSIGNMENTS**

Jason Hearn (GWWO, Inc.) Done On 4/22/2020



**CALLAS CONTRACTORS, LLC**

10549 Downsville Pike, P.O. Box 888  
Hagerstown, MD 21741-0888  
Tel: (301) 739-8400 / Fax: (301) 739-7065

**RFI #1**

|  |                       |
|--|-----------------------|
| To: FCPS                                     | From: Andrew Campbell |
| Attn: Kim Miskell, Brian Staiger & Dave Toth | Pages: 1              |
| Re: Bid 20C6, Waverley Elementary School     | Date: April 22, 2020  |

**Request for Information:**

1. Per Details 6, 7 & 10 on Sheet A6.11, which package is to include the ½" FRT Plywood?
2. Detail 3/A6.13, what is the framing structure that the 61000-E ¾" Plywood attaches to? Is the intent to fasten through the 3" insulation and attach to the masonry CMU?  
Same detail 3/A6.13: Is this 3" insulation (072100-E) wool or rigid?
3. A801 - Door Schedule Is Incomplete, please revise to include door/frame materials, finishes, header details etc. for doors: A103, B101, C100B, C101A, C101B, C102A, C102B, C102C, C102D, E102A, E102B, E102C, E112A, E116, E118, A200, A218, B208, B209, F200, F204 and F217.
4. Will FCPS consider waiving the AWI quality certification requirement?
5. Are there any more details on the counter shutter 015/C109 or counter shutter C101? I went through the door schedule and searched the other documents but do not see any basis for design or details as to what type of door they want or options.
6. Per Addendum 3 detail 8/A8.2: I saw there was an addendum to the jamb detail for the OH Door; can you tell me what material is being used behind the 06100-E Plywood?
7. Drawing A 7.8 Please verify if the tables and chairs in Classroom B109 that are shown with dotted lines are in the bid. These are similar the tables and chairs in the Blue Heron Elementary School bid but on that bid, they were drawn with solid lines. They are on drawing A 7.8 in that bid – STEM LAB 021.

Thank you,

Andrew R. Campbell  
Project Estimator  
Callas Contractors, LLC  
10549 Downsville Pike  
Hagerstown, Maryland 21740  
Cell: 240-291-8628  
Office: 301-739-8400 x 156  
Facsimile: 301-739-7065  
[acampbell@callascontractors.com](mailto:acampbell@callascontractors.com)



Request for Information  
Detailed with Comments and Links  
**PB-038**

Waverley Elementary School Replacement (1901)

201 Waverley Drive  
Frederick, Maryland 21702

PB-038 - Site Clarifications

| Subject             |            | Status                                      |
|---------------------|------------|---|
| Site Clarifications |            | Closed <span style="color: green;">●</span> |
| Discipline          | Importance | Location                                    |
| Created On          |            | Date Resolved                               |
| 04/14/2020          |            | 04/19/2020                                  |
| Due Date            |            |   |
| 04/21/2020          |            |   |
| Author              |            | Resolved By                                 |
| Kerrigan Toth       |            | Jason Hearn                                 |
| Oak Contracting LLC |            | GWWO, Inc.                                  |

**QUESTION** Kerrigan Toth on 4/14/2020 07:37 PM (Edited by Kerrigan Toth on 4/14/2020 07:38 PM)

See questions below from Urban Zink:

1. Utility Demo: 1A. Is the water service for the Ex. Bldg. TBR in Ph 2 to remain in service? 1. B After the temp fire hydrant (installed in Ph 1) is removed in Ph 3, is the existing service to be abandoned in place? Please clarify.
2. Utility Demo: 2. The sewer and water services for the Ex. Bldg. TBR in Phase 3 are not shown to be removed on sheet C-1D. Are they to remain, or are they to be abandoned in place. Please clarify.
3. Missing SEWER Profiles: 3. S-1 to bldg. for 8"S; S-4 to bldg. for unknown diameter; S-6 to bldg. for 4"S.
4. Missing STORM Profiles: 4. I-6 to M-7; M-15 to M-4.

**COMMENT** Kerrigan Toth on 4/14/2020 07:39 PM

Questions 2 thru 4 to be answered by GWWO.

1. Per Oak Contracting, existing water service to the Rock Creek school will be taken out of service and removed during the demolition of Rock Creek school in phase 2. Water Service to existing Waverley will be taken out of service and removed in phase 3. Question 1B The temp fire hydrant stays in place. The water line will extend around the new Waverley school in phase 2. See drawing C-3A for clarification.

**ANSWER** Jason Hearn on 4/19/2020 09:01 PM

2. Sewer and Water are to be removed; plan will be updated as part of a future addendum.
3. Additional profiles will be provided as part of a future addendum.
4. Additional profiles will be provided as part of a future addendum.

## ASSIGNMENTS

Jason Hearn (GWWO, Inc.) Done On 4/22/2020



Request for Information  
Detailed with Comments and Links  
**PB-039**

Waverley Elementary School Replacement (1901)

201 Waverley Drive  
Frederick, Maryland 21702

PB-039 - Site Furnishings

| Subject             |            | Status                                      |
|---------------------|------------|---|
| Site Furnishings    |            | Closed <span style="color: green;">●</span> |
| Discipline          | Importance | Location                                    |
| Created On          |            | Date Resolved                               |
| 04/15/2020          |            | 04/21/2020                                  |
| Due Date            |            |   |
| 04/22/2020          |            |   |
| Author              |            | Resolved By                                 |
| Kerrigan Toth       |            | Jason Hearn                                 |
| Oak Contracting LLC |            | GWWO, Inc.                                  |

**QUESTION** Kerrigan Toth on 4/15/2020 12:19 PM (Edited by Kerrigan Toth on 4/15/2020 12:21 PM)

See question below from Victor Stanley:

I see (10) bike racks on C-3B but cannot locate the receptacles or benches. Will you please clarify where these are located and confirm the takeoff for all?



File

PB-039\_Site Furni...  
Kerrigan Toth

**ANSWER** Jason Hearn on 4/21/2020 09:03 AM

In addition to the ten noted in the questions, provide ten (10) additional bike racks at the rear of the building near the bus drop-off. Benches and waste receptacles are not required, please omit.

## ASSIGNMENTS

Jason Hearn (GWWO, Inc.) Done On 4/22/2020

## PB-039\_Site Furnishings Highlighted Portion.png

1. Bike Racks: Victor Stanley, Inc; Model BRVWS-101 (in-ground mounted, with powder coat over a galvanized finish (color selected by architect))
2. Bench: Victor Stanley, Inc.; Homestead Series Model 32.
3. Trash Receptacles: Victor Stanley, Inc.; Model ES-242.



Waverley Elementary School Replacement (1901)

201 Waverley Drive  
Frederick, Maryland 21702

PB-040 - Casework

| Subject             |            | Status                                      |
|---------------------|------------|---|
| Casework            |            | Closed <span style="color: green;">●</span> |
| Discipline          | Importance | Location                                    |
| Created On          |            | Date Resolved                               |
| 04/15/2020          |            | 04/19/2020                                  |
| Due Date            |            |   |
| 04/22/2020          |            |   |
| Author              |            | Resolved By                                 |
| Kerrigan Toth       |            | Jason Hearn                                 |
| Oak Contracting LLC |            | GWWO, Inc.                                  |

**QUESTION** Kerrigan Toth on 4/15/2020 12:22 PM

See questions below from William F. Klingensmith:

1. Verify that rooms A202, A220, B202 and F220 will have casework as elevated on 7/A7.2. Overall plans do not show these.
2. Is there casework intended in rooms A105, E104, E105, E106, E107, E114A, E114B or A204? If so please schedule this work or elevate the casework.
3. Verify that Fire Retardant Plywood is not required for countertop core materials or window sill substrate.
4. Verify that all base bid solid surface sills and counters shall be Corian – Silver Birch.
5. Verify that all laminate counters shall be Wilsonart - Carbon EV.
6. Verify that Corian – Silver Birch counter is intended at 9/A7.9.
7. Advise what core material is intended for laminate casework. FCPS typically call for plywood core material.

**ANSWER** Jason Hearn on 4/19/2020 08:56 PM

1. Provide in A220 and B202, as well as F202 as already indicated; A202 and F220 are planning/work rooms. This will be added as part of a future addendum.
2. Elevation references and or accessory tags have been added to the A1 series and will be included as part of a future addendum. Casework for A204 is tagged in 12/A7.15.
3. Correct; IBC permits combustible materials in millwork/blocking conditions. Any drawings or details with fire-retardant plywood will be revised as part of a future addendum.
4. Base bid solid surface sills are to be Corian, Silver Birch. Base bid solid surface counters are to be Corian, Carbon Aggregate. "Add/Alternate" note in countertop will be removed.
5. Correct.
6. This should be a laminate countertop and will be revised as part of a future addendum.
7. Provide hardwood plywood as core material.

## **ASSIGNMENTS**

Jason Hearn (GWWO, Inc.) Done On 4/22/2020



Waverley Elementary School Replacement (1901)

201 Waverley Drive  
Frederick, Maryland 21702

PB-041 - Stamped Concrete

## Subject

Stamped Concrete

## Status

Closed ●

## Discipline

## Importance

## Location

## Created On

04/15/2020

## Due Date

04/22/2020

## Date Resolved

04/19/2020

## Author

Kerrigan Toth  
Oak Contracting LLC

## Resolved By

Jason Hearn  
GWWO, Inc.

## QUESTION

 Kerrigan Toth on 4/15/2020 12:38 PM

See question below from Locust Lane Farms:

There is some stamped concrete work indicated on the site plan. It calls for a pattern Sika Scofield, Lithotex Pavecrafters, Pattern S8900. One what is this pattern, unable to find S8900?  
The Arch. Site plans reference CS.2 for more information, there is no CS.2. Also need to know color Integral or surface hardener and what color release agent to be used?

## COMMENT

 Kerrigan Toth on 4/15/2020 12:40 PM

Please note that all of the Key Note boxes state "refer back to CS.2", however, it should read CS.3.

## ANSWER

 Jason Hearn on 4/19/2020 08:54 PM

The pattern name is "Nickel Plate Rail Spur" and number is as indicated, S8900. More information can be found here: <http://www.scofield.com/scofield-decorative-concrete-specialty-patterns.html>. The CS.2 reference is to direct the reader back to the master keynote list. This should be "CS.3" and will be revised in the final Conformance set. Refer to specification Section 32 1313 for information about integrally colored concrete paving.



URL

<http://www.scofield.com/scofield-decorative-concrete-specialty-patterns.html>  
Jason Hearn

## ASSIGNMENTS

Jason Hearn (GWWO, Inc.) Done On 4/22/2020



Request for Information  
Detailed with Comments and Links  
**PB-042**

Waverley Elementary School Replacement (1901)

201 Waverley Drive  
Frederick, Maryland 21702

PB-042 - Residential Appliances

| Subject                              |            | Status                    |
|--------------------------------------|------------|---------------------------|
| Residential Appliances               |            | Closed ●                  |
| Discipline                           | Importance | Location                  |
| Created On                           |            | Date Resolved             |
| 04/15/2020                           |            | 04/19/2020                |
| Author                               |            | Resolved By               |
| Kerrigan Toth<br>Oak Contracting LLC |            | Jason Hearn<br>GWWO, Inc. |

**QUESTION** Kerrigan Toth on 4/15/2020 02:16 PM

See question below from Keller:

1 Specification 113013 for residential appliances as well as drawing A7.0A does not list any model numbers for the appliances. Even with the descriptions given there is a large variety of options and pricing. Can you issue model numbers for the appliances?

**ANSWER** Jason Hearn on 4/19/2020 08:52 PM

Model numbers have been added to specification section 11 3013 and will be included in a future addendum.

## ASSIGNMENTS

Jason Hearn (GWWO, Inc.) Done On 4/22/2020



Waverley Elementary School Replacement (1901)

201 Waverley Drive  
Frederick, Maryland 21702

PB-044 - Finish Floor Clarifications

| Subject                     |            | Status        |
|-----------------------------|------------|---------------|
| Finish Floor Clarifications |            | Closed ●      |
| Discipline                  | Importance | Location      |
| Created On                  |            | Date Resolved |
| 04/15/2020                  |            | 04/19/2020    |
| Due Date                    |            |               |
| 04/22/2020                  |            |               |
| Author                      |            | Resolved By   |
| Kerrigan Toth               |            | Jason Hearn   |
| Oak Contracting LLC         |            | GWWO, Inc.    |

**QUESTION** Kerrigan Toth on 4/15/2020 02:40 PM

See attached questions from L&R Floors.



File

RFIs Waverley ES....  
Kerrigan Toth

**COMMENT** Kerrigan Toth on 4/15/2020 02:43 PM

Question #6. Scope item 1.19 of the 9C Contract package includes the flooring in the walk-ins. The 9C scope item is correct.

Question #7. See response to #8 above.

Question #8. GWWO to provide detail. 9D will be responsible for this transition.

Question #9. GWWO to provide detail. 9D will be responsible for this transition.

**ANSWER** Jason Hearn on 4/19/2020 08:51 PM (Edited by Jason Hearn on 4/21/2020 09:09 AM)

PB-044 - Finish Floor Clarifications

---

1. Terry Gorman (terry.gorman@daltile.com), representative for Daltile and Lungarno, has confirmed that 4" x 16" cove base is stocked in the color indicated.
  2. Provide 5% of each color and type; specification will be amended in a future addendum.
  3. Correct.
  4. Detail will be included as part of a future addendum. Stair B110 is to receive precast terrazzo treads.
  5. Transition is to occur where the common lavatory area meets the corridor. The plan on A9.7 shows a line just below the "Align" note that runs from the wing wall on the lavatory side to the side wall next to the drinking fountain. This is consistent with group restrooms A115A/A115B, F105A/F105B and F206A/F206B.
  8. Detail will be included as part of a future addendum.
  9. Detail will be included as part of a future addendum.
  10. The two walls outside of C113 (wall with door to C113 and wall with drinking fountain) are W-2. The walls in Corridor C100B are painted; reference elevations on A9.3 for more information.
  11. Sheet carpeting will be clarified as part of a future addendum.
  12. Provide as indicated on revised plan included as part of Addendum #6.
  13. Vestibule E112 is to receive same finishes as E112A except for walk-off mat where indicated.
  14. Provide accent walls (W3 tile) as indicated where indicated.
  15. This was addressed in Addendum #4; reference sketches in that document for more information.
- 

## ASSIGNMENTS

Jason Hearn (GWWO, Inc.) Done On 4/22/2020



# L&R Floors

a Division of L & R Enterprises, Inc.  
5011 Lawrence Place  
Hyattsville, MD 20781  
301-927-2030 Fax 301-864-1995

## Request for Information

**Date:** April 15, 2020

**Send To:**

Oak Contracting, LLC

**Job #:** \_\_\_\_\_

**RFI #:** \_\_\_\_\_

**Salesperson:** David Willard

**Attention:** Dave Toth

**Phone:** \_\_\_\_\_

**Fax:** \_\_\_\_\_

**Job Address:**

Waverley Elementary School

201 Waverley Drive

Frederick, MD 21702

**Reason for Request:**

- ☒ Document Conflict  
☐ Install Schedule  
☐ Document Interpretation  
☐ Other: \_\_\_\_\_

**Possible Cost Effect:**

- ☐ Decrease  
☐ Increase  
☐ No Change

**Possible Schedule Effect:**

- ☐ Delay  
☐ Improve  
☐ No Change

**Notes:**

1. Per the Lungarno website a 4" x 16" cove base is not available, only a 4" x 6" is available. Is this acceptable?
2. Per 096500 1.3.H no Owners Attic Stock is listed, please confirm no Attic Stock is required
3. Please confirm that Pre-Molded Base Corners are required per 096500 2.2.A.6
4. Please provide detail between Resinous and VCT at Platform Stairs and B210 Stair
5. Restrooms A216A & A216B (typical at others) please provide flooring transition location
6. Freezer/Cooler; 9B Scope calls for 9B to install flooring and base, Finish Drawings call for 9C. What flooring is required?
7. Who is responsible for "Mudbed" in Freezer/Cooler and what material is to be used?
8. Transition type between F-3 and F-6 (Terrazzo and Rubber Athletic) and who is responsible?
9. Transition type between F-6 and F-7 (Rubber Athletic and Concrete)?
10. C100A-C100B; Area shown as VCT outside of Room C113, does this area have painted walls with C100B or W-2 Ceramic walls with C100A?
11. Section 096816 is titled "Sheet Carpeting" but doesn't list carpet specs while A9.3 lists F-2 as modular, please clarify
12. Please provide Floor/Base/Wall Finishes for E103C
13. Please provide Floor/Base/Wall Finishes for Vestibule north of E112
14. Some Single Use Restrooms (E114-E115) have an accent wall while others do not, is this intended or do we need adjustments?
15. E112-E112A-E119; These three rooms are connected with different base/wall finishes, please provide locations for material changes

**Signed By:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Customer:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Copy to:** \_\_\_\_\_



Waverley Elementary School Replacement (1901)

201 Waverley Drive  
Frederick, Maryland 21702

PB-045 - Carpentry Clarifications

## Subject

Carpentry Clarifications

## Status

Closed ●

## Discipline

## Importance

## Location

## Created On

04/15/2020

## Due Date

04/22/2020

## Date Resolved

04/19/2020

## Author

Kerrigan Toth  
Oak Contracting LLC

## Resolved By

Jason Hearn  
GWWO, Inc.

## QUESTION

 Kerrigan Toth on 4/15/2020 05:02 PM

See attached questions from Callas Contractors.



File  
RFI #2.doc  
Kerrigan Toth

## COMMENT

 Kerrigan Toth on 4/15/2020 05:03 PM

Oak's response to questions 2 and 3:

Question #2. 06100 G is furnish and install by 9A. 06100 E is furnish and install by 6A

Question #3. Details with scope clarifications will be provided in addendum #6

## ANSWER

 Jason Hearn on 4/19/2020 08:46 PM

1. Aluminum trims are to be placed around perimeter of non-tactile, screen printed (Acrovyn) signage panels.

## ASSIGNMENTS

Jason Hearn (GWWO, Inc.) Done On 4/22/2020



**CALLAS CONTRACTORS, LLC**

10549 Downsville Pike, P.O. Box 888  
Hagerstown, MD 21741-0888  
Tel: (301) 739-8400 / Fax: (301) 739-7065

**RFI #2**

|  |                       |
|--|-----------------------|
| To: FCPS                                     | From: Andrew Campbell |
| Attn: Kim Miskell, Brian Staiger & Dave Toth | Pages: 1              |
| Re: Bid 20C6, Waverley Elementary School     | Date: April 22, 2020  |

**Request for Information:**

1. Per graphic panels on A9.15. The specs mention aluminum trims, but I don't see where they are on the drawing. Can you clarify?
2. Per Exterior Wall Types C.02 and D.02 on Drawing AC.1: Which items are the responsibility of the 6A Contractors? 061000-G and/or 061000-E?
3. Please clarify extent of each scope based on interior wall, roof and building sections and details, if possible.

Thank you,

Andrew R. Campbell  
Project Estimator  
Callas Contractors, LLC  
10549 Downsville Pike  
Hagerstown, Maryland 21740  
Cell: 240-291-8628  
Office: 301-739-8400 x 156  
Facsimile: 301-739-7065  
[acampbell@callascontractors.com](mailto:acampbell@callascontractors.com)



Waverley Elementary School Replacement (1901)

201 Waverley Drive  
Frederick, Maryland 21702

PB-046 - Sitework Package

| Subject             |            | Status                                      |
|---------------------|------------|---|
| Sitework Package    |            | Closed <span style="color: green;">●</span> |
| Discipline          | Importance | Location                                    |
| Created On          |            | Date Resolved                               |
| 04/15/2020          |            | 04/19/2020                                  |
| Due Date            |            |   |
| 04/22/2020          |            |   |
| Author              |            | Resolved By                                 |
| Kerrigan Toth       |            | Jason Hearn                                 |
| Oak Contracting LLC |            | GWWO, Inc.                                  |

**QUESTION** Kerrigan Toth on 4/15/2020 04:04 PM

See questions below from CJ Miller:

1. Paving section clarification – Is the Heavy Duty section for all drive lanes and parking bays and the Light Duty section for the (4) Hard Surface Playareas.
2. Per the Addendum #3 plan sheet C-3A it looks like the Poured Playarea on the northside of the building overlaps the Soccer Field shown on sheet C-4A by 5' to 10'. Can you clarify.
3. With the Building Demo & Abatement included in the 2A package it is going to be very hard to get 10% DBE participation. Especially with the Building Demo and Abatement being so specialized.
4. With the site walk through scheduled for tomorrow is it possible to extend questions until at least Friday. Just in case a question comes up while looking at the project.

**COMMENT** Kerrigan Toth on 4/15/2020 04:04 PM

Oak responses are as follows

Question #3. The 10% MBE goal for the 2A Contract Package will remain as written. Please review the MBE requirements provided in the bid documents with respect to outreach programs and documenting efforts required for MBE requirements.

Question #4. There will be no time extension for questions.

**ANSWER** Jason Hearn on 4/19/2020 08:45 PM

1. Correct.
2. The soccer field striping is a holdover from design and does not apply to the project. Lines associated with said soccer field depicted on C-4 series sheets will be removed for the Conformance Set.

**ASSIGNMENTS**

Jason Hearn (GWWO, Inc.) Done On 4/22/2020



Waverley Elementary School Replacement (1901)

201 Waverley Drive  
Frederick, Maryland 21702

PB-048 - 6A Clarifications

| Subject             |            | Status        |
|---------------------|------------|---------------|
| 6A Clarifications   |            | Closed ●      |
| Discipline          | Importance | Location      |
| Created On          |            | Date Resolved |
| 04/15/2020          |            | 04/19/2020    |
| Author              |            | Resolved By   |
| Kerrigan Toth       |            | Jason Hearn   |
| Oak Contracting LLC |            | GWWO, Inc.    |

**QUESTION** Kerrigan Toth on 4/15/2020 05:49 PM (Edited by Kerrigan Toth on 4/15/2020 05:58 PM)

PB-048 - 6A Clarifications

See questions below from Brawner Builders:

1. Please clarify 6A Scope #1.47. Is 6A responsible for cleaning the exterior and interior of all windows? Is 6A only responsible to clean only the material/surfaces provided under 6A scope of work? Will this cleaning be considered "final" cleaning for the project or will be there a separate final clean by others prior to occupancy?

2. Per 6A Scope Item #1.01.1 6A is responsible for video display system, Spec. Sec. 10 1500. This spec. sec. is not listed in 6A's cross reference. Who is responsible for this work?

QUESTION 3 TO BE ANSWERED IN PB-049 (SUBSTITUTION REQUEST)

4. Per spec section 14 2400/item 2.1, please confirm if Thyseen Krup or Schindler is the Basis of Design.

5. Residential appliances Specification Section 11 3013 are part of the 6A scope.  
please confirm if the 6A contractor will also be responsible for the foodservice equipment/spec section 11 4000.

6. Per spec section 123200-Manufactured Wood Casework, the specs only list TMI Systems as a manufacturer for the plastic laminate casework. Per Spec 016000 – Product Requirements, section 2.3, A & B, specifically states that if a manufacturer is listed there are to be no substitutions, no options. Diversified Educational Systems (DES) would like to propose the use of Case Systems for the plastic laminate work on this project. Would that be acceptable?

7. A6.11 detail 3/4 parapet- is the plywood sheathing in 3/A6.11 in the 6A scope?

8. The specified manufacturers for the entrance mats are out of office due to COVID-19. Please confirm if there are other acceptable manufacturers to contact.

9. Please confirm the model numbers for the residential appliances (kitchen and laundry appliances) in spec section 113013. The specs and the accessory schedule located on drawing A7.0A do not provide the model numbers.

10. Please provide a detail on how the operable partition is to be hung from the structure.

11. Per spec section 102239, Heading 2.2-G makes reference to doors and frames at the pocket enclosure but no pocket doors are indicated on the drawings. Please advise as to whether or not these doors are required.

12. Per spec section 102239, Heading 2.3-A & B refers to markerboards and tack boards which are not indicated on the operable partition elevations. Please indicate the location and quantity of these items, if required.

13. Per spec section 102239, There is reference to the panel finish in the specification but no indication of the panel substrate; e.g., gypsum, sheet steel, mdf, etc. Please advise.

14. Spec Section 12 5600 Specialized Storage Systems: The specs provide info for both Solid color (Cool Grey, Pastel Blue and Pastel Green) and Crystal Color (Crystal Clear and Tinted Blue) Tote Trays. Are they going to be choosing all solid or all crystal color trays or a mixture of both? The pricing for both Carts and Wall Unit are based off of tray material and color.

15. On Sheet A7.0A Accessory Schedule Casework- Item #C17 Mobile Bookcase –From the drawings and description, this item appears to be a VS America Shift+ Transfer Mobile Bookcase. But I cannot find the corresponding Spec Section 12 3513A? Can you provide info on this item?

PB-048 - 6A Clarifications

---

16. Per spec section 125600-specialized storage systems/Products- Item 2.1/  
Manufacturers- the following companies are provided: StorSystem™ line of products as manufactured by Certwood,  
Limited, Luton, England. Could you  
please provide the contact information for Limited, Luton, England?

17. During the pre-bid, it was discussed that the General Contractor will be  
responsible for permits. Please confirm which permits we will be responsible for.

18. Please confirm that 6A Trade Contractor is responsible for all exterior plywood sheathing shown (ie. vertical  
plywood attached to the metal stud at parapet walls, exterior walls behind brick veneer, etc.)

19. Please clarify which trade contractor is responsible for the mineral insulation at the exterior wall behind the brick  
veneer, roof side of the parapet walls, and at top of the parapet walls.

---

**COMMENT** Kerrigan Toth on 4/15/2020 05:58 PM

Oak responses are as follows:

Question #1. No (reference to glass and trim is limited to items installed under the 6A package). Yes. This is not the  
final clean. Final cleaning is performed under the CM.

Question #2. 10 1500 will be added to the 6A cross reference.

Question #5. Food Service Equipment is under 11A Contract Package.

Question #7. 6A

Question #9. This question was asked in pre-bid RFI 042. Response will be issued in future addendum

Question #17. Any permit that is required to perform work of this package. The Building permit is provided by the  
Owner. For 6A this includes but is not limited to; Site sign permit, electrical permit for card access system, individual  
office trailer permits etc.

Question #18. Confirmed

Question #19. 4A

---

**ANSWER** Jason Hearn on 4/19/2020 08:43 PM (Edited by Jason Hearn on 4/19/2020 08:44 PM)

4. Schindler was used as the basis-of-design but both manufacturers listed are acceptable; the shafts have been designed to accommodate the products listed for each.
  6. Specification Section 12 3200 was amended with Addendum #3; additional manufacturers were added including Case Systems.
  8. Substitutions for other manufacturers are no longer being accepted. At least one of the manufacturers listed has a confirmation letter on their website confirming on-going sales operations.
  10. Detail will be provided as part of a future addendum.
  11. Yes, pocket doors are required.
  12. There will be no tackboard finish to the operable partition panels in this project. The note for markerboard finish was placed on A1.3; reference 1/A1.3 for extents of application. The note will be relocated to A9.3 finish plan for the Conformed set.
  13. The panel substrate should be steel sheet of manufacturer's standard thickness.
  14. Provide Crystals (Tinted Blue) for all accessories covered under this section.
  15. This accessory is the mobile bookcase. The associated keynote should be 123600-A5 for "Education Special Units." Refer to specification 12 3600 for additional information.
  16. The US Office can be reached at: Certwood Limited ODC, 11 Technology Way, Wintersville, Ohio 43953; Telephone: 740 314 5874; Fax: 740 314 5314; Cellular: 740 317 8247; [www.certwood.com](http://www.certwood.com).
- 

## **ASSIGNMENTS**

Jason Hearn (GWWO, Inc.) Done On 4/22/2020



Waverley Elementary School Replacement (1901)

201 Waverley Drive  
Frederick, Maryland 21702

PB-049 - Casework Substitution Request

## Subject

Casework Substitution Request

## Status

Closed ●

## Discipline

## Importance

## Location

## Created On

04/15/2020

## Due Date

04/22/2020

## Date Resolved

04/21/2020

## Author

Kerrigan Toth  
Oak Contracting LLC

## Resolved By

Jason Hearn  
GWWO, Inc.

## QUESTION

 Kerrigan Toth on 4/15/2020 06:00 PM

See attached substitution request from Brawner Builders for your review.



File

Mastercraft Woodw...  
Kerrigan Toth

## ANSWER

 Jason Hearn on 4/21/2020 09:22 AM

No exceptions; manufacturer will be added to specification as part of future addendum.

## ASSIGNMENTS

Jason Hearn (GWWO, Inc.) Done On 4/22/2020



# Mastercraft

Woodworking Company, Inc.

681 Mohrsville Road  
Shoemakersville, PA 19555  
Phone: 610-926-1500  
Fax: 610-926-0727

## Mastercraft

### Models/Line:

Regional Series

### Construction

32mm Dowel Method-10mm dowels used

### Concealed surfaces

Thermofused melamine in white (optional colors  
dove gray or light beige melamine)

### Exposed Vertical Surfaces

GP32 laminate with, heavy gauge balancing  
sheet on the interior or exposed sides. Colors  
available from Standard lines of Formica,  
Wilson Art, and or Pionite (over 300 colors)

### Shelves

3/4" thermofused melamine panels to 36" wide;  
1" thermofused melamine panels over 36" wide

### Partitions

Fixed intermediates are 3/4" thermofused  
melamine panels

### Door and Drawer Faces

3/4" particleboard core with GP28 exterior, heavy  
gauge white colored balancing sheet to match the  
interior.

### Bases

3 types available:  
Sep. ladder style plywood  
Integral toe (continuous top to floor  
particleboard)  
Plywood footprint hybrid

### Plywood

5 Ply A.C. 3/4" Plywood

## TMI

Fixed modular laminate clad casework

32mm Dowel Method-10mm dowels used

Thermofused melamine in white only

GP32 laminate with, heavy gauge balancing  
sheet on the interior or exposed sides. 54 colors  
only. Maximum 1 color per unit face and 5  
colors per project.

3/4" thermofused melamine panels to 36" wide;  
1" thermofused melamine panels over 36" wide

Fixed intermediates are 3/4" thermofused  
melamine panels

3/4" particleboard core with GP28 exterior, heavy  
gauge white colored balancing sheet on the  
interior.

Separate Ladder Style plywood only

5 Ply A.C. 3/4" Plywood

**Hardboard**

1/4" smooth both sides meeting or exceeding commercial standards CS-251.

**Edges**

PVC selections from full line of Doelken-Woodtape spec line (approximately 80 colors)

**Backs**

1/4" Prefinished Inset/Housed into cabinet sides top and bottom with 3/4" mounting rails behind, Doweled into cabinet sides with continuous bead hot melt glue.

**Drawers**

Sides, front and back of drawer box 3/4" thick particle board joined with wood dowels. With 1/4" bottom fully dadoed and hotmelt Glue.

**Wall Cabinet Bottoms**

1" particleboard core laminated both sides with melamine in white, light beige dove gray

**Hinges:**

3 options:

A. 5 Knuckle, .095 thick, 2 3/4" overlay type, nine attachment screws, 12 colors and dull chrome.

B. European Style Concealed: Salice Model #CREG233

C. 3-Knuckle-Grass

**Particle Board**

47 pound industrial grade (all particleboard meeting 1-M-3 requirements, has a range of 45-48 pounds density)

**Warranty**

8 years

**Location Manufacturing Facility:**

Pennsylvania

**Countertops**

1.25" Particle board core. Laminate with GP-50 and phenolic liner backer sheet.

1/4" smooth both sides meeting or exceeding commercial standards CS-251.

PVC selections in 12 factory standard colors

1/4" Prefinished Inset/Housed into cabinet sides top and bottom with 3/4" mounting rails behind, Doweled into cabinet sides with continuous bead hot melt glue.

Sides, front and back of drawer box 1/2" thick particle board joined with wood dowels. With 1/2" bottom fully dadoed and hotmelt Glue.

1" particleboard core laminated both sides with melamine in white only.

5-Knuckle5 Knuckle, .095 thick, 2 3/4" overlay type, nine attachment screws, 12 colors and dull chrome.

47 pound industrial grade (all particleboard meeting 1-M-3 requirements, has a range of 45-48 pounds density)

5 years

Minnesota

1.25" Particle board core. Laminate with GP-50 and phenolic liner backer sheet.



# Mastercraft

Woodworking Company, Inc.

681 Mohrsville Road  
Shoemakersville, PA 19555  
Phone: 610-926-1500  
Fax: 610-926-0727

## Mastercraft

### Models/Line:

Regional Series

### Construction

32mm Dowel Method-10mm dowels used

### Concealed surfaces

Thermofused melamine in white (optional colors  
dove gray or light beige melamine)

### Exposed Vertical Surfaces

GP32 laminate with, heavy gauge balancing  
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### Door and Drawer Faces

3/4" particleboard core with GP28 exterior, heavy  
gauge white colored balancing sheet to match the  
interior.

### Bases

3 types available:  
Sep. ladder style plywood  
Integral toe (continuous top to floor  
particleboard)  
Plywood footprint hybrid

### Plywood

5 Ply A.C. 3/4" Plywood

## LSI

L-44

32mm Dowel Method-10mm dowels used

Thermofused melamine in white only

GP32 laminate with, heavy gauge balancing  
sheet on the interior or exposed sides. 54 colors  
only.

3/4" thermofused melamine panels to 36" wide;  
1" thermofused melamine panels over 36" wide

Fixed intermediates are 3/4" thermofused  
melamine panels

3/4" particleboard core with GP28 exterior, heavy  
gauge white colored balancing sheet on the  
interior.

Separate Ladder Style plywood only

5 Ply A.C. 3/4" Plywood

**Hardboard**

1/4" smooth both sides meeting or exceeding commercial standards CS-251.

**Edges**

PVC selections from full line of Doelken-Woodtape spec line (approximately 80 colors)

**Backs**

1/4" Prefinished Inset/Housed into cabinet sides top and bottom with 3/4" mounting rails behind, Doweled into cabinet sides with continuous bead hot melt glue.

**Drawers**

Sides, front and back of drawer box 3/4" thick particle board joined with wood dowels. With 1/4" bottom fully dadoed and hotmelt Glue.

**Wall Cabinet Bottoms**

1" particleboard core laminated both sides with melamine in white, light beige dove gray

**Hinges:**

3 options:

A. 5 Knuckle, .095 thick, 2 3/4" overlay type, nine attachment screws, 12 colors and dull chrome.

B. European Style Concealed: Salice Model #CREG233

C. 3-Knuckle-Grass

**Particle Board**

47 pound industrial grade (all particleboard meeting 1-M-3 requirements, has a range of 45-48 pounds density)

**Warranty**

8 years

**Location Manufacturing Facility:**

Pennsylvania

**Countertops**

1.25" Particle board core. Laminate with GP-50 and phenolic liner backer sheet.

1/4" smooth both sides meeting or exceeding commercial standards CS-251.

PVC selections in 12 factory standard colors

1/2" Prefinished Inset/Housed into cabinet sides top and bottom with 3/4" mounting rails behind, Doweled into cabinet sides with continuous bead hot melt glue.

Sides, front and back of drawer box 1/2" thick particle board joined with wood dowels. With 1/2" bottom fully dadoed and hotmelt Glue.

1" particleboard core laminated both sides with melamine in white only.

5-Knuckle 5 Knuckle, .095 thick, 2 3/4" overlay type, nine attachment screws, 12 colors and dull chrome.

47 pound industrial grade (all particleboard meeting 1-M-3 requirements, has a range of 45-48 pounds density)

5 years

Minnesota

1.25" Particle board core. Laminate with GP-50 and phenolic liner backer sheet.



Brigitte Keimig &lt;brigittekeimig@brawnerbuilders.com&gt;

---

**Waverly ES - Approval to bid request**

1 message

---

**Robert D'Angelo** <bobmastercraft@gmail.com>  
To: Brigitte Keimig <brigittekeimig@brawnerbuilders.com>

Tue, Mar 31, 2020 at 11:20 AM

---

# Mastercraft

Woodworking Co., Inc.

681 Mohrsville Road, Shoemakersville, PA 19555

Phone 610-223-7835 Fax 866-854-9208

Email [bobmastercraft@gmail.com](mailto:bobmastercraft@gmail.com)

---

ATTENTION: Brifitte Keimig

RE: Waverly ES, Frederick, MD

We received your invitation to bid and would like to submit a proposal. This project includes a list of acceptable bidders and therefor requires approval to bid. We request you pass this request on to the Architect for consideration, request you send a copy of the request to us. Thank you.

---

To: Architect

We are interested in submitting a bid as a sub-contractor for this project. We request that you add our name to your list of acceptable bidders in Section 123200 Manufactured Wood Casework . Attached please find copies of our current specification, list of references and a comparison sheet of one of the approved manufacturers.

In addition to the enclosed information we would also like to point out the following.

- You may be interested in knowing that our firm is Woman owned and we would be happy to send you our registration number.
- The mileage from our factory is within the 500 mile Leeds requirement.

We ask that if you approve us please respond to this email to enable us to obtain the proper bid documents in a timely manner. Thank you.

Bob D'Angelo

---

**5 attachments****LSI Comparison.pdf**  
112K**References & Architect listing.pdf**  
111K**current cabspecs.pdf**  
138K



**TMI Comparison.pdf**  
155K



**Mastercraft Casework Performance Testing Data.pdf**  
1975K

[Download pictures of your photos](#)

### **Mastercraft Woodworking - References**

**1. University of Maryland Eastern Shore**

- a. Customer: Bovis Lend Lease, Inc. (Construction Manager)
- b. Contract amount: \$ 131,500.00
- c. Location: Salisbury, MD
- d. Phone #: 410-651-8424
- e. Architect: Ellerbe Beckett, Inc.

**2. John Beck Elementary School**

- a. Customer: Lobar, Inc. (General Contractor)
- b. Contract amount: \$ 305,150.00
- c. Location: Lancaster, PA
- d. Phone #: 717-432-9728
- e. Architect: Reese, Lower, Patrick and Scott

**3. Central Dauphin New E.S.**

- a. Customer: Miller Brothers Construction Co. (General Contractor)
- b. Contract amount: \$ 391,740.00
- c. Location: Harrisburg, PA
- d. Phone #: 570-385-1662
- e. Architect: E.I. Assoc.

**4. Nye E.S.**

- a. Customer: Eichelberger Construction, Inc. (General Contractor)
- b. Contract amount: \$ 252,600.00
- c. Location: Hummelstown, PA
- d. Phone #: 717-638- 3000
- e. Architect: E.I. Assoc.

**MASTERCRAFT INSTALLATIONS**

**ARCHITECT**

**PROJECT**

|                             |                                    |
|-----------------------------|------------------------------------|
| ADAMS EISENHOWER & MECKLEY  | GOVERNOR MIFFLIN S.D.              |
| ADAMS EISENHOWER & MECKLEY  | ST. IGNATIUS RCC, EDUCATION CENTER |
| ADAMS EISENHOWER & MECKLEY  | BRECKNOCK ELEM SHILLINGTON         |
| ADAMS EISENHOWER & MECKLEY  | CUMRU ELEM SCHOOL                  |
| ADAMS EISENHOWER & MECKLEY  | GOV. MIFFLIN SR HIGH               |
| ADAMS EISENHOWER & MECKLEY  | SCHUYLKILL HAVEN MIDDLE SCHOOL     |
| ADAMS EISENHOWER & MECKLEY  | GUARDIAN ANGEL EDU CENTER          |
| ANDERSON BROWN HIGLEY ASSOC | GRACE COTTAGE                      |
| ANDERSON BROWN HIGLEY ASSOC | NEW CASTLE PUBLIC LIBRARY DELA.    |
| ARTHUR ALTEMOSE             | OAKS ELEM                          |
| BALLINGER                   | MILFORD MEMORIAL HOSPITAL REHAB    |
| BASCO ASSOC                 | CANFIELD AVENUE SCHOOL             |
| BASKERVILL & SON            | CULPEPPER MEMORIAL HOSPITAL        |
| BOSAK, ROBERT & ASSOCIATES  | PENN ARGYL HIGH SCHOOL             |
| BOYKEN & HARKNESS           | W.R. SATZ HIGH SCHOOL HOLMDALE, NJ |
| BRADLEY ASSOC               | PERRY TWP ELEM SCHOOL              |
| BRESLIN RIDYARD FADERO      | CENTRAL BUCKS ELEM                 |
| BRESLIN RIDYARD FEDERO      | FIVE POINTS ELEM BANGOR S.D.       |
| BRESLIN RIDYARD FEDERO      | MIDDLE PAXTON SCHOOL               |
| BRESLIN RIDYARD FEDERO      | PALISADES MIDDLE SCHOOL            |
| BRESLIN RIDYARD FEDERO      | SOUTH ELEM WALLENPUPACK            |
| BRESLIN RIDYARD FEDERO      | SWARTA JR HIGH HARRISBURG, PA      |
| BRESLIN RIDYARD FEDERO      | UPPER PERKIOMEN ELEM SCHOOL        |

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| BROWN & HALE                | NEW NORTH WARD ELEM SCHOOL        |
| BROWN ZAJACK ASSOC          | DELAWARE VALLEY HIGH SCHOOL       |
| BROWN ZAJACK ASSOC          | DINGMAN DELAWARE ELEM             |
| BROWN ZAJACK ASSOC          | WALLENPAUPACK HIGH SCHOOL         |
| BROWN ZAJACK ASSOC          | WALLENPAUPACK MIDDLE SCHOOL       |
| BUCK SIMPERS AIA            | DREW SCHOOL CHRISTANA S.D.        |
| BURKAVAGE DESIGN ASSOC      | WAYNE MEMORIAL HOSPITAL           |
| CANNON/FAULKNER             | WILMINGTON ACADEMY                |
| CHARLES SURMANTE AIA        | ST. ALOYSIUS SCHOOL               |
| COCHRAN STEPHENSON & ASSOC  | AMERICAN RED CROSS BALTIMORE      |
| COMPRESHIVE DESIGN          | PARK FORREST MIDDLE SCHOOL        |
| CORPORATE PLANNING & DESIGN | MORGAN BANK DELA. TRUST BLDG      |
| CRABTREE ROHRBAUGH & ASSOC  | CARBON COUNTY PRISON              |
| CRABTREE ROHRBAUGH & ASSOC  | IRON FORGE EDUCATIONAL CENTER     |
| CRABTREE ROHRBAUGH & ASSOC  | SCHUYLKILL CORRECTIONAL INSTITUTE |
| CRABTREE ROHRBAUGH & ASSOC  | 19 <sup>TH</sup> STREET SCHOOL    |
| D. ROTH PARTNERSHIP         | NORTHWESTERN LEHIGH MIDDLE SCH.   |
| D. ROTH PARTNERSHIP         | SAM MILLER MEMORIAL BLOOD CTR     |
| D. ROTH PARTNERSHIP         | MONROE COUNTY VO-TECH             |
| D. ROTH PARTNERSHIP         | STROUDSBURG JR HIGH               |
| DAGIT-SAYLOR                | SARAH DYMOND E.S.                 |
| DISEROAD WOLFE              | ST PETER & PAUL ELEM              |
| DAVID LYNCH & ASSOC         | AMITY ELEM SCHOOL                 |
| DAVID LYNCH & ASSOC         | AVON GROVE AREA HIGH              |
| DAVID LYNCH & ASSOC         | GARNET VALLEY ELEM SCHOOL         |

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| DAVID LYNCH & ASSOC     | GARNET VALLEY HIGH SCHOOL        |
| DAVID LYNCH & ASSOC     | MARPLE-NEWTOWN HIGH              |
| DAVID LYNCH & ASSOC     | MARPLE-NEWTOWN ELEMS(4)          |
| SCHOOL DESIGN SERVICES  | MCD RADIATION ONCOLOGY PH        |
| DISEROAD & WOLFF        | WEST ROCKHILL E.S. BUCKS CO.     |
| DOLAN CONSTRUCTION      | ST. JOSEPH'S DIAGNOSTICS         |
| EI ASSOC                | APPLEMAN E.S.                    |
| EI ASSOC                | EGG HARBOR MIDDLE SCHOOL         |
| EI ASSOC                | GETTYSBURG HIGH SCHOOL           |
| EI ASSOC                | MULBERRY STREET E.S.             |
| EI ASSOC                | SALEM E.S.                       |
| ENTECH ENGINEERING      | COMMUNITY GENERAL HOSPITAL       |
| EWING COLE CHERRY BROTT | FRITZGERALD MERCY HOSPITAL       |
| F.E.&S. DESIGN          | WILMINGTON HOSPITAL 3W & 3 CENT. |
| FARIDAY THORNE FRAYTAK  | LAFAYETTE ELEM SCHOOL            |
| FARIDAY THORNE MADDUSH  | MERCY CO. SPECIAL SERV. SCH.     |
| FARIDAY THORNE MADDUSH  | WEST WINDSOR PLAINSBORO ELEM     |
| FRENCH & RYAN           | DEPART OF AGRICULTURE CAMDEN,NJ  |
| GANNET FLEMING          | BIDDLES CORNER TOLL FACILITY     |
| GANNET FLEMING          | DENNY'S ROAD TOLL FACILITY       |
| GANNET FLEMING          | DOVER TOLL FACILITY              |
| GARRISON ARCHTS         | WASHINGTON TWP SCHOOLS (3)       |
| GEORGE LONGENECKER      | THE FARMS                        |
| GILBERT ARCHITECTS      | EBENEZER ELEM. SCHOOL            |

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| GILBERT ARCHITECTS          | GLENDAL ELEM & HIGH SCHOOLS  |
| GILBERT ARCHITECTS          | LEWISBURG MIDDLE SCHOOL      |
| GILBERT ARCHITECTS          | MCCASKEY HIGH LANCASTER      |
| GILBERT ARCHITECTS          | PALMYRA HIGH SCHOOL          |
| GILBERT ARCHITECTS          | RADNOR HIGH SCHOOL           |
| GILBERT ARCHITECTS          | RADNOR ELEM SCHOOL           |
| GILBERT ARCHITECTS          | KENNARD DALE HIGH SCHOOL     |
| GILBERT ARCHITECTS          | ALBANY ELEM SCHOOL           |
| GILBERT ARCHITECTS          | GREENWICH ELEM SCHOOL        |
| GILBERT ARCHITECTS          | MAXATAWNY ELEM SCHOOL        |
| GILBERT ARCHITECTS          | RED LION AREA SR HIGH        |
| GILBERT ARCHITECTS          | RED LION MIDDLE SCHOOL       |
| GILBERT ARCHITECTS          | VALLEY VIEW MIDDLE SCHOOL    |
| GRIMM & PARKER ARCHITECTS   | FRANKLIN SHERMAN ELEM SCHOOL |
| HAYES LARGE                 | POTTSVILLE HOSPITAL          |
| HAYES LARGE                 | LENKERVILLE ELEM SCHOOL      |
| HAYES LARGE                 | LYTER ELEM SCHOOL            |
| HAZZARD & WARMKESSEL        | NORTH WALES ELEM SCHOOL      |
| HERMAN HASSINGER ARCHITECTS | MAIN STREET MANOR            |
| HOMSEY INC.                 | ST. MARK'S HIGH SCHOOL       |
| HOUGHTON QUARTY WARR AIA    | WARREN COUNTY COMMUNICATIONS |
| HOWARD KULP                 | FREEMANSBURG ELEM BETHLEHEM  |
| KAEYER GARMENT & DAVIDSON   | JOHN JAY HIGH SCHOOL         |
| KAEYER GARMENT & DAVIDSON   | JOHN JAY MIDDLE SCHOOL       |
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| KUTCH BROCAVICH & ASSOC          | CARBONDALE ELEM SCHOOL              |
| LAN ASSOC                        | HUBBARD ELEM SCHOOL                 |
| LOTZ ARCHT.                      | PAOLI MEMORIAL HOSPITAL             |
| LOUIS MASCIOTTI ARCHT.           | 10 <sup>TH</sup> & PENN ELEM SCHOOL |
| MBA & E ARCHITECTS               | HUDSON CO VO-TECH SCHOOL            |
| MEDICAL CENTER OF DE. PLAN DEPT. | MED CENTER OF DELA. CHRISTANA       |
| MEDIFAC ARCHITECTS               | AMERICAN HOUSE FIT-OUT              |
| MEDIFAC ARCHITECTS               | ST. JOSEPH'S HOSPITAL ICU & CCU     |
| MICHAEL ROSENFELD ARCHITECT      | BRIMMER & MAY SCHOOLS               |
| MILLER BROS                      | MEDOFF MB MED OFFICES               |
| MITCHELL ASSOC                   | BENEFICIAL WILMINGTON, DELA         |
| MITCHELL ASSOC                   | GEORGETOWN STATE SERVICE CTR (3)    |
| MITCHELL ASSOC                   | MANUFACTURER'S PLAZA WILMINGTON     |
| MOECKEL CARBONELLI ASSOC         | GEORGE KIRK MIDDLE SCHOOL           |
| MOECKEL CARBONELLI ASSOC         | MED CENTER OF DELA. CHRISTANA MAG   |
| NAZARETH S.D.                    | NEWBURG ELEM SCHOOL                 |
| NAM KIM PARK P.C.                | COMMERCE CLEARING HOUSE             |
| NAM KIM PARK P.C.                | HILLSBOROUGH ELEM SCHOOL            |
| NOELKER & HULL                   | MENNO HAVEN SOUTH WING              |
| OLIVER & BECICA                  | CARSON & FRANKLIN SCHOOLS           |
| OLIVER & BECICA                  | DELSEA REGIONAL HIGH SCHOOL         |
| QUAD THREE                       | WILKES BARRE ELEM SCHOOL            |
| QUAD THREE                       | WYCALIS ELEM SCHOOL WB              |

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| PLAN DEPT MED CTR OF DELA. | MEDICAL CENTERS 5 PROJECTS       |
| PRAVIN PATEL ASSOC         | TOMS RIVER INTERMEDIATE WEST     |
| PRAVIN PATEL ASSOC         | NORTH DOVER ELEM SCHOOL          |
| PRAVIN PATEL ASSOC         | WEST DOVER ELEM                  |
| RADEY & FULLER ASSOC       | CLEMENTON ELEM                   |
| RADEY & FULLER ASSOC       | HUGH BOYD ELEM SCHOOL            |
| RADEY & FULLER ASSOC       | SALEM COUNTY VO-TECH             |
| RADEY & FULLER ASSOC       | STEINHAUER SCHOOL                |
| RADEY & FULLER ASSOC       | YOCUM ELEM SCHOOL                |
| RANCORN & WILDMAN          | BATTLEFIELD PARK ELEM            |
| RETAIL DESIGN CONCEPTS     | PRETZEL GOURMET                  |
| RICHARD KAPUSTA & CO       | WESLEY METHODIST BETHLEHEM       |
| RIENZ ASSOC                | COLD SPRING & ROUND MEADOW E.S.s |
| RKR HESS ASSOC             | RKR HESS OFFICES & LAB           |
| ROBERT LYNN ASSOC          | SSMED CENTER OF DELA.            |
| ROSS J. RANERI             | MEMORIAL HOSPITAL SALEM CO. NJ   |
| RTKL ASSOC                 | CROZER-CHESTER MC EAST WING      |
| SCHAMU MACHOWSKI DOO       | JOHN HOPKINS UNIVERSITY HOSPITAL |
| SHERETZ FRANKLIN CRAWFORD  | COMMUN.CENTER BANK HERON PT.     |
| SHERETZ FRANKLIN CRAWFORD  | HERON POINT OF CHESTERTOWN       |
| SHIVE/SPINELLE/PERANTONI   | SOUTH MOUNTAIN ELEM SCHOOL       |
| SHIVE/SPINELLE/PERANTONI   | CEDAR HILL SCHOOL                |
| SHIVE/SPINELLE/PERANTONI   | DEERFIELD HIGH SCHOOL            |

SHIVE/SPINELLE/PERANTONI

HARTSHORN SCHOOL

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SHIVE/SPINELLE/PERANTONI

MILBURN HIGH SCHOOL

SHIVE/SPINELLE/PERANTONI

OAK STREET SCHOOL

SHIVE/SPINELL/PERANTONI

WYOMING SCHOOL

SPILLMAN FARMER

WILEY HOUSE CAMPUS

SPILLMAN FARMER

DONEGAN ELEM SCHOOL

ST FRANCIS HOSPITAL PLAN DEPT.

7<sup>TH</sup> FLOOR CLAYTON, 4<sup>TH</sup> & 5<sup>TH</sup>

STRACH ASSOC

K-8 ELEM WILKES-BARRE

THE ARCHITECTURAL STUDIO

TERRY'S CHILD'S PSYCHIATRIC

THE ARCHITECTURAL STUDIO

POTTSGROVE INTERMEDIATE

THE HILLER GROUP

ASTRA MERCK

THOMAS ASSOC

JANET MEMORIAL SCHOOL

THOMAS ASSOC

BRIDGETON S.D. 2 ELEMS

THOMAS ASSOC

TEANECK PUBLIC SCHOOLS

TYLMAN R. MOON & ASSOC

KEAN COLLEGE OF NJ

VITABILE ARCHITECTS

FRANKFORD HOSPITAL TORRESDALE

VITETTA GROUP

FLORENCE TWP SCHOOLS (3)

VITETTA GROUP

FLYNN ELEM SCHOOL

VITETTA GROUP

HOSPITAL U OF PA DULLES BLDG

VITETTA GROUP

HOSPITAL U OF PA HAL MALONEY

VITETTA GROUP

KEITH VALLEY MIDDLE SCHOL

VITETTA GROUP

LUMBERTON JR/SR HIGH

VITETTA GROUP

MARLTON MIDDLE SCHOOL

WALLACE & WATSON

NORTHAMPTON COMMUNITY COLLEGE

WALLACE & WATSON

ST. JOSEPH THE WORKER LEARNING CTR

ER MELLUSI WARSHAUER

TAPPENZEE MANOR

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WHEELER GOODMAN MASEK

BELMONT HALL

WILLIAM TRULIO  
WIRT VITABLE ARCHITECTS

SOUTHERN MARYLAND HOSPITA  
FRANKFORD HOSPITAL CANCER CTR

WIRT VITABLE ARCHITECTS

SCHUYLKILL MANOR NURSING HOME

ZAJACK HARTER ARCHITECTS

WALLENPAUPACK MIDDLE SCHOOL

READING HOSPITAL

READING HOSPITAL

TABARRIO ARCHITECTS

LAKE WYNONAH



Rev. October 2007

## **SPECIFICATIONS: PLASTIC LAMINATE CASEWORK**

As manufactured by  
Mastercraft Woodworking Co., Inc.

These specifications contain certain optional selections which must be made by the specification developer. These selections are identified with an asterisk [\*].

### **1.00 GENERAL**

#### **1.01 SCOPE OF WORK**

- A. Provide all plastic laminate casework and accessory items as specified herein. Refer to the project plans for specific details and requirements.
- B. General Conditions: The General Conditions, Supplementary General Conditions, Special Conditions and General Requirements apply to all work in this Division. Refer to other Sections, Divisions, and Schedules for work connected to this Section.

#### **1.02 RELATED WORK SPECIFIED ELSEWHERE**

- A. General millwork and custom cabinetry unless specified herein or so noted on the project plans.
- B. Rubber, vinyl or other material for finishing cabinet toekicks.
- C. Locks Masterkeyed to room doors and other special locks.
- D. Blocking within walls.
- E. Sinks, plumbing fixtures, electrical and mechanical equipment of all types, and the related installation and service connections thereof.

#### **1.03 SUBMITTALS**

- A. Submit in accordance with the General, Supplementary, and Special Conditions of the Specifications.
- B. Submit Shop Drawings for approval showing materials, dimensions, details, and sink locations.
- C. Submit samples of colors and hardware cuts as requested by the architect/owner.

#### **1.04 QUALIFICATIONS**

- A. Drawings and specifications are based upon casework as manufactured by Mastercraft Woodworking Co., Inc., 681 Mohrsville Road, Shoemakersville, PA. 19555.
- B. Casework of other recognized institutional casework manufacturers may be considered for approval provided a written request is received within ten (10) days prior to the opening of bids. Casework must conform to design, quality

of materials, design intent, workmanship, and exact performance function of casework components and details specified and implied by manufacturer's reference, and as shown on plans.

- C. Manufacturers requesting approval shall submit evidence of at least 5 years experience in the manufacturing of institutional casework for similar projects. Manufacturers shall also show evidence of financial stability, adequate plant capacity to meet schedules, and complete design capability in the form of a comprehensive product catalog and specifications. Sample cabinets, catalogs, and specifications shall be submitted with the written request as well as a list detailing those areas in which their product deviates from this specification. Samples may be retained by the architect until completion of the project for verification of compliance with these specifications.
- D. The opinion and decision of the architect/owner shall be final in the evaluation of the manufacturer's request for permission to bid the project.

## 2.00 PRODUCTS

### 2.01 MATERIALS

- A. Laminated Plastics/Finishes:
  - 1. High pressure decorative plastic laminate (HPL) and vertical grade (.032) for exterior cabinet surfaces shall meet NEMA standards for vertical grade. HPL for countertops shall be general purpose grade (.050).
  - 2. Color Selections Available:
    - A. Standard Colors of solid colors, patterns, and woodgrains from Formica, Wilsonart, Pionite, and Nevamar.
    - B. Allow for up to ten (10) different colors per project.
    - C. Woodgrain selections will run grain vertically on cabinet doors, sides, and finished backs and horizontally on drawer fronts, aprons, and top rails.
    - D. Select only one (1) color per cabinet.
  - 3. Plastic laminate balancing sheet for countertops shall be heavy gauge phenolic paper type, brown in color.
  - 4. Thermally-fused Saturated Melamine Component Panel (MCP)
    - A. Thermoset acid resistant melamine impregnated paper permanently bonded to particleboard substrate.
    - B. Color to be white both faces.
    - C. Applicable standards:
 

|                        |             |
|------------------------|-------------|
| Federal standards..... | ..FSL-P508H |
| ASTM.....              | FSL-P508H   |
| USFDA.....             | D-1300-53T  |
| ANSI/NEMA.....         | LD3-1991    |

B. Substrate (Core) Material:

1. Particleboard Substrate shall be of 47 lb. Density and balanced construction with moisture content not to exceed 8%. Three-ply construction shall exceed the requirements for its type and classification under Commercial Standard CS-236-66, Federal Specifications LLL-B-800A, and ASTM D 1037-78.
2. Medium Density Fiberboard shall conform to ANSI A208.2 and shall meet the following minimum standards:

|                        |              |
|------------------------|--------------|
| Screw holding, face:   | 355 lbs.     |
| Screw holding, edge:   | 300 lbs.     |
| Modulus of rupture:    | 4,500 psi.   |
| Modulus of elasticity: | 500,000 psi. |
| Internal bonds:        | 100 psi.     |

C. Hardboard: shall meet or exceed Commercial Standard CS-251 and Federal Specification LLL-B-00810; board shall be 1/4" thick, tempered, and smooth both faces.

D. Edging:

1. Solid, high impact, homogeneous color polyvinyl chloride (PVC), applied by high speed edgebander with hot melt adhesive and automatically trimmed all edges for consistent, uniform appearance.

**\*SELECT ONE**

2. Selfedge design for cabinet body edges in white, almond, black, or gray PVC.
2. Selfedge design for cabinet body edges in PVC, color to be selected from Doellken-Woodtape Spec Line

**\*SELECT ONE**

3. Selfedge design for cabinet doors/drawer fronts in white, almond, black, or gray PVC
3. Selfedge design for cabinet doors/drawer fronts in PVC, color to be selected from Doellken-Woodtape Spec Line
3. Selfedge design in 3-mm thick PVC; solid, high impact, homogeneous color; all edges, including vertical corner edge, receive uniform radius equal to thickness of the edging. Color to be selected from Doellken-Woodtape Spec Line.

E. Hardware:

**\*SELECT ONE**

1. Hinges: Heavy duty, 5-knuckle institutional hinge; mill ground, hospital tip; fixed pin with all edges eased. Steel is .095" thick; full wrap

around design with minimum of nine screw attachment holes. One pair per door to 48" height, one and one half pairs over 48" height. Hinge to accommodate 3/4" thick door and allow 270 degree swing opening. Finish to be epoxy powder coat (gray or black) or plated finish in dull chrome.

1. Hinges: Fully concealed, heavy gauge metal hinge featuring 170 degree swing opening; full 6-way adjustment; demountable for ease of door removal from separate base plates. Hinge to be self-latching to eliminate need for separate catch.

**\*SELECT ONE**

2. Pulls: Wire type on 4" centers. Finish to be epoxy powder coat (gray or black) or plated finish in dull chrome.
2. Pulls: Semi-recessed [mortised] ABS plastic in almond, black, or gray finish.
3. Drawer Slides:
  - A. Standard Drawers: white color, epoxy coated, wrap around type with positive in-stop, out-stop, and stay-open features. Minimum 100 lb. Dynamic load rating.
  - B. File Drawers: white color, epoxy coated, wrap around full extension type with three member design. Minimum 100 lb. Dynamic load rating.
  - C. Heavy Duty Drawers: 250-lb. Load rating. To be utilized in all paper storage drawers and all drawers designated as heavy duty.
4. Catches: magnetic type with dual dowel attachment and adjustable in-out magnet. Provide two catches at each tall cabinet door. Catch not required with concealed hinges.
5. Adjustable Shelf Rest: high-strength plastic rest with anti-tip feature and dual projecting dowels for insertion into drilled holes on cabinet sides. Color to be clear.
6. Wardrobe Rod: chrome plated oval heavy-duty steel tube; supported with chrome plated steel flanges, fully captured type.
7. Coat Hooks: aluminum wall or undershelf types, in single or double hook styles as required by cabinet design.
8. Molded Tote Trays: high impact polyethylene with card holders, color tan; supported by ribbed polyethylene side rails on 1" centers, color tan.
9. Locks: disc tumbler with removable core, available keyed alike and Masterkeyed; chrome finish; from National Lock. [Remove-A-Core Series]
10. Wheel Casters: swivel casters for mobile cabinets are plate type with ball bearing swivel plate; 5" wheel diameter; minimum 135 lb. Load rating per caster.
11. Removable file holder extrusion for Pentaflex files to be provided on all file drawer sides; color black.

## F. Detailed Construction Requirements

### **\*SELECT ONE**

1. Toekick: Base and tall cabinet sides shall extend to floor and be notched to form an integral toekick space. A  $\frac{3}{4}$ " x  $\frac{3}{4}$ " exterior grade plywood strip shall be applied to the bottom edge of each side. The toekick board shall be made of exterior grade plywood and shall extend to the floor to complete the three-sided footprint which forms the bearing surface of the cabinet.

1. Toekick: Base and tall cabinets shall rest on and be secured to a separate and continuous water resistant exterior grade plywood base structure. The ladder-type construction shall allow for securing to and leveling with floor.

1. Toekick: Base and tall cabinets shall extend to floor and be notched to form an integral toekick space.

2. Cabinet Tops and Bottoms:

A. Tall and base cabinet tops and bottoms shall be MCP, white in color, and  $\frac{3}{4}$ " in thickness on semi-exposed parts and

### **\*SELECT ONE**

exposed parts.

exposed parts to be laminated with HPL, color to match HPL of exposed vertical cabinet surfaces

B. Wall cabinet and library stack tops and bottoms shall MCP, white in color, and 1" in thickness on semi-exposed parts and

### **\*SELECT ONE**

exposed parts.

exposed parts to be laminated with HPL, color to match HPL of exposed vertical cabinet surfaces.

C. Solid subtops shall be furnished on all base cabinets except sink base units.

### **\*SELECT ONE**

D. Exterior exposed wall cabinet bottoms shall be white MCP.

D. Exterior exposed wall cabinet bottoms shall be laminated with HPL, color to match HPL of exposed vertical cabinet surfaces.

3. Cabinet Sides:

A. Wall, tall, and base cabinet sides shall be MCP, white in color, and  $\frac{3}{4}$ " in thickness. on semi-exposed parts and

### **\*SELECT ONE**

exposed parts.

exposed parts to be laminated with HPL, color to match HPL of exposed vertical cabinet surfaces

B. Library stack sides shall be MCP, white in color, and 1" in thickness on semi-exposed parts and

### **\*SELECT ONE**

exposed parts.

exposed parts to be laminated with HPL, color to match HPL of exposed vertical cabinet surfaces.

C. Exposed faces of cabinet sides shall be laminated with high pressure laminate.

**\*SELECT ONE**

4. Fixed and Adjustable Shelves:

A. Cabinet shelves (fixed and adjustable) shall be MCP, white in color, on semi-exposed parts and

**\*SELECT ONE**

exposed parts.

exposed parts to be laminated with HPL, color to match HPL of exposed vertical cabinet surfaces.

C. Front leading edge shall be edged with PVC.

D. Shelves shall be  $\frac{3}{4}$ " thick up to 32" wide, 1" thick over 32" wide.

5. Cabinet Backs:

A. Standard cabinet backs shall be  $\frac{1}{4}$ " thick. Rear, unexposed face of back shall receive a continuous bead of hot melt adhesive at intersection of back with sides and hang rails.

B. Hang rails shall be  $\frac{3}{4}$ " in thickness and doweled into cabinet sides. Base, wall, and tall cabinets shall receive rails at top and bottom and tall cabinets shall receive an additional center rail.

C. Exposed exterior backs shall be  $\frac{3}{4}$ " thick panel with high pressure laminate on the exposed face.

6. Door and Drawer Fronts:

A. Door and drawer fronts shall be fabricated from an  $\frac{11}{16}$ " particleboard core laminated on both faces with high pressure laminate. Exposed face color as selected and semi-exposed face white in color. Doors and drawer fronts shall overlay the cabinet body and establish a  $\frac{1}{8}$ " reveal between pairs of doors, doors and drawer fronts, and multiple drawer fronts on the same cabinet.

B. Framed glass doors shall be  $\frac{3}{4}$ " thick, laminated both sides with high pressure laminate. Glass shall be  $\frac{1}{4}$ " float glass and shall be retained in openings with removable glazing. Doors shall be available for both sliding and hinged designs.

C. Frameless glass doors for sliding designs shall be  $\frac{1}{4}$ " thick float glass with seamed edges and machined finger pulls.

7. Drawers

A. Drawer fronts shall be applied to the front component of a separate drawer box.

B. Sides, front, and back of drawer box shall be  $\frac{3}{4}$ " thick MCP white in color. Drawer box shall be joined with wood dowels. Drawer box edges shall be edged with white PVC.

C. Drawer bottom shall be  $\frac{1}{4}$ " thick and shall be housed [dadoed] into front, back, and sides. A continuous hot melt glue bead shall be run

around perimeter on drawer underside. Stiffeners shall be applied at a minimum of 9" on center.

D. Heavy duty drawer bottoms shall be 1/2" plywood laminated with white HPL and shall be fastened to drawer box.

E. Paper drawers shall be fitted with a hood at the rear.

F. Drawers shall be fitted with slides as per Section 2.01.E.3c.

8. Vertical and Horizontal Dividers

A. As dictated by design, 1/4" dividers shall be tempered hardboard, smooth both faces, eased on leading edge, and shall be secured in cabinet with clear molded plastic clips.

B. As dictated by design, 3/4" dividers shall be secured in cabinet with either clear plastic clips or wood dowels. Leading edge shall be edged with PVC. Panels shall be MCP, white in color, on semi-exposed parts and

**\*SELECT ONE**

exposed parts.

exposed parts to be laminated with HPL, color to match HPL of exposed vertical cabinet surfaces.

9. Rails:

A. Rails shall be 3/4" x 6" x full width white MCP horizontal members behind all door/drawer and multi-drawer reveals so as to close off all reveals. Color of leading edge shall match color of cabinet body edge.

B. Rails shall be dowelled into cabinet body sides.

G. Countertops

1. Countertops shall be 1 1/4" thick solid particleboard core with general purpose HPL bonded to top surface and heavy gauge phenolic balancing sheet bonded to underside. Exposed edges shall be HPL to match top surface HPL. Splashes shall be butted against edge of countertop, sealed with continuous bead of caulking applied to countertop edge so as to produce a squeeze-out of caulking, and then screwed from concealed side into countertop deck edge. Splashes shall have heavy gauge phenolic balancing sheet on concealed side.
2. Factory applied tops on mobile cabinets and other specialty cabinets shall be 3/4" thick particleboard with general purpose HPL bonded to top surface and heavy gauge phenolic balancing sheet bonded to underside. Exposed edges shall be edged to match top surface HPL.

H. General Construction

1. All cabinet parts shall be accurately machined for quality joints utilizing automatic machinery.
2. Cabinet sides shall be bored to receive dowels for mating with cabinet tops and bottoms. 1/4" back panel shall be housed into cabinet sides, top, and bottom.
3. 3/4" thick hang rails shall be doweled into cabinet sides.
4. Rear of cabinet back shall receive a continuous bead of hotmelt adhesive to increase overall cabinet integrity and form a moisture and vermin seal.

5. Sink cabinets shall have removable backs to facilitate installation around plumbing rough-ins.

#### I. Mobile Cabinets

1. All mobile cabinets shall be designed with a separate angular steel frame base with casters welded at the four corners. The cabinet shall sit upon and be attached to this base so that the base acts as a dolly for moving the cabinet.
2. Tall mobile cabinets (66" high) shall have a steel framing system attached to the steel base so as to prevent racking of the cabinet and provide stability when fully loaded.
3. Tall mobile cabinets (66" high) shall have top surface laminated with HPL. All other mobile cabinets shall receive a factory applied top as per Section G.2.
4. All mobile cabinets shall be laminated with HPL on all faces including front, sides, and back.

## 2.02 CASEWORK SIZING

- A. General-use wall, base, and tall cabinets shall be available in width, height and depth increments of 1/16" so as to maximize the utilization of available space and accommodate special equipment requirements.
- B. Fillers and scribes at wall terminations shall be no greater in width than 1" unless field conditions necessitate the use of larger sizes.

## 3.00 EXECUTION

### 3.01 COORDINATION

- A. Coordinate work of this section with related work of other Sections as necessary to obtain proper installation of all items.
- B. Verify site dimensions of cabinet locations at jobsite prior to fabrication.

### 3.02 INSTALLATION

- A. Storage and Protection: protect casework in transit. Store at jobsite in ventilated area not exposed to extreme temperature and humidity changes. Do not store or install casework in building until all wet work is complete.
- B. Installers: install all casework using experienced installers as authorized by the manufacturer.
- C. Installation Workmanship
  1. Erect casework straight, level, and plumb. Scribe and closely fit to adjacent work, cutting and fitting around all obstructions.
  2. Install all items complete and adjust all moving parts to operate freely.
  3. Leave all exposed surfaces clean and free of defects at time of final acceptance.

- D. Guarantee: All materials shall be guaranteed for a period of 2 years from defects in material and manufacturing workmanship.
- E. Site Cleanup: remove all debris associated with casework installation including cartons, packing, scraps, sawdust, and packaging materials.



**MASTERCRAFT WOODWORKING**  
681 Mohrsville Road  
Shoemakersville, PA 19555  
Attn: Michael R. Peters

**Test Report No: 82231-1**

**Date: 26 April 2004**

**SAMPLE(S) SUBMITTED**

**BY THE CLIENT AS:** One Wall Cabinet, n.o.i.

**DATE OF RECEIPT:** 2 April 2004

**TEST PERIOD:** 8 – 23 April 2004

**TEST(S) REQUESTED:** ANSI/KCMA A-161.1 – 1995; "Performance and Construction Standard for Kitchen and Vanity Cabinets".

**TEST RESULTS:** The unit is in compliance with ANSI/KCMA A-161.1 – 1995, for the tests performed.

**TESTING PERFORMED BY:**

**N. KITOV**  
LABORATORY TECHNICIAN

**SIGNED FOR THE COMPANY BY:**

A handwritten signature in black ink, appearing to be 'C.R. Roberti', written over a horizontal line.

**C.R. ROBERTI, CPP**  
MANAGER, PRODUCTS EVALUATION

**PAGE 1 OF 2**

This report is issued by SGS U.S. Testing Company Inc. under its General Conditions for Testing Services, as printed on reverse side. SGS U.S. Testing's responsibility under this report is limited to proven negligence and will in no case be more than the amount of the testing fees. Except by special arrangement, samples are not retained by SGS U.S. Testing for more than 30 days. The results shown on this test report refer only to the sample(s) tested unless otherwise stated, under the conditions agreed upon. Anyone relying on this report should understand all of the details of the engagement. Neither the name, seals, marks nor insignia of SGS U.S. Testing may be used in any advertising or promotional materials without the prior written approval of SGS U.S. Testing. The test report cannot be reproduced, except in full, without prior written permission of SGS U.S. Testing Company Inc.



Report No.: 82231-1

## RESULTS OF TESTS

| <u>Test Number</u> | <u>Description</u>                               | <u>Results</u> |
|--------------------|--|----------------|
| 5.0                | <b>STRUCTURAL TESTS</b>                          |                |
| 5.1                | Static Loading on Shelves and Bottoms of Cabinet | Complies       |
| 5.3                | Static Loading for Wall Cabinet                  | Complies       |

## TEST PROCEDURES AND RESULTS

The following test program was conducted in a laboratory environment maintained at 70° F and 50% RH. Each sample was individually tested after conditioning in the test environment for at least 48 hours prior to conducting the test.

The complete detailed procedures may be found in the referenced specification and are only summarized herein. The results obtained for each of the applicable tests are presented in their respective section describing the procedure below:

### 5.0 STRUCTURAL TESTS

#### 5.1 Static Loading on Shelves and Bottoms of Cabinets

##### Procedure

The cabinets were mounted according to manufacturer's instructions. A deflection-measuring instrument was used to measure any support settlement. All shelves and cabinet bottoms were loaded uniformly at 15-lbs/sq. ft. The loads were maintained for seven (7) days.

##### Results

All shelves and cabinet bottoms of both the wall and base cabinets were capable of withstanding 27.45 lbs of uniform load for seven (7) days without any apparent damage. Any deflection measured was less than 1/4 inch.

#### 5.2 Static Loading for Wall Cabinet

##### Procedure

The wall cabinet was mounted according to manufacturer's instructions. A loading device was placed on center of front of cabinet. Load was applied slowly, taking four (4) minutes to reach 500 pounds of loading.

##### Results

The cabinet was capable of withstanding 500 lbs of static load without any visible sign of failure in the cabinet or the mounting system. The cabinet complied with the 500 lb loading requirements of ANSI/KCMA A-161.1-1995.

\*\*\*\*\*

END OF REPORT



MASTERCRAFT WOODWORKING  
681 Mohrsville Road  
Shoemakersville, PA 19555  
Attn: Michael R. Peters

Test Report No: 82231

Date: 26 April 2004

SAMPLE(S) SUBMITTED

BY THE CLIENT AS: One Base Cabinet, n.o.i.

DATE OF RECEIPT: 2 April 2004

TEST PERIOD: 8 – 23 April 2004

TEST(S) REQUESTED: ANSI/KCMA A-161.1 – 1995; "Performance and Construction Standard for Kitchen and Vanity Cabinets".

TEST RESULTS: The unit is in compliance with ANSI/KCMA A-161.1 – 1995, for the tests performed.

TESTING PERFORMED BY:

for

N. KITOV  
LABORATORY TECHNICIAN

SIGNED FOR THE COMPANY BY:

C.R. ROBERTI, CPP  
MANAGER, PRODUCTS EVALUATION

Page 1 of 3

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Report No.: 82231

## RESULTS OF TESTS

| <u>Test Number</u> | <u>Description</u>                               | <u>Results</u> |
|--------------------|--|----------------|
| 5.0                | <b>STRUCTURAL TESTS</b>                          |                |
| 5.1                | Static Loading on Shelves and Bottoms of Cabinet | Complies       |
| 5.3                | Base Front Joint Loading                         | Complies       |
| 6.0                | <b>DOOR OPERATION TESTS</b>                      |                |
| 6.1                | Door Racking and Hinge Set                       | Complies       |

## TEST PROCEDURES AND RESULTS

The following test program was conducted in a laboratory environment maintained at 70° F and 50% RH. Each sample was individually tested after conditioning in the test environment for at least 48 hours prior to conducting the test.

The complete detailed procedures may be found in the referenced specification and are only summarized herein. The results obtained for each of the applicable tests are presented in their respective section describing the procedure below:

### 5.0 STRUCTURAL TESTS

#### 5.1 Static Loading on Shelves and Bottoms of Cabinets

##### Procedure

The cabinets were mounted according to manufacturer's instructions. A deflection-measuring instrument was used to measure any support settlement. All shelves and cabinet bottoms were loaded uniformly at 15-lbs/sq. ft. The loads were maintained for seven (7) days.

##### Results

All shelves and cabinet bottoms of both the wall and base cabinets were capable of withstanding 50.4 lbs of uniform load for seven (7) days without any apparent damage. Any deflection measured was less than 1/4 inch.

#### 5.3 Base Front Joint Loading

##### Procedure

Drawer and drawer hardware were removed before starting the test. A loading device was placed 2 inches below the bottom of top rail or cabinet top. Load was applied slowly, taking four (4) minutes to reach 250 lbs for cabinets with drawer rail or 200 lbs for cabinets without drawer rail.

##### Results

The cabinet was capable of withstanding 250 lbs. No visible sign of joint failure on exposed face of the cabinet was evident.



Report No.: 82231

## **6.0 DOOR OPERATION TESTS**

---

### **6.1 Door Racking and Hinge Set**

#### **Procedure**

The base cabinet was mounted according to manufacturer's instructions. The shape of the door was recorded and the set of the door was measured before loading. The door was opened by 90° angle and 65 pounds of weight was slowly applied on the door at a distance of 10 inches from center of hinges. The door was then operated for ten (10) cycles from 90° open to 20° open and back. The door was weighted for an additional ten (10) minutes and re-measured after ten (10) minutes of removing the weight.

#### **Results**

The door retained its original shape and showed no visible signs of damage.  
The amount of set did not exceed 0.065 inch.  
Hinges showed no visible sign of damage.  
Connections between cabinet-and-hinge and door-and-hinge showed no sign of looseness.

\*\*\*\*\*

**END OF REPORT**



Request for Information  
Detailed with Comments and Links  
**PB-050**

Waverley Elementary School Replacement (1901)

201 Waverley Drive  
Frederick, Maryland 21702

PB-050 - Site Clarifications

| Subject             |            | Status                                      |
|---------------------|------------|---|
| Site Clarifications |            | Closed <span style="color: green;">●</span> |
| Discipline          | Importance | Location                                    |
| Created On          |            | Date Resolved                               |
| 04/15/2020          |            | 04/19/2020                                  |
| Due Date            |            |   |
| 04/22/2020          |            |   |
| Author              |            | Resolved By                                 |
| Kerrigan Toth       |            | Jason Hearn                                 |
| Oak Contracting LLC |            | GWWO, Inc.                                  |

**QUESTION** Kerrigan Toth on 4/15/2020 06:03 PM

See attached questions from Pleasants Construction for your review.



File

Waverley Elementa...  
Kerrigan Toth

**COMMENT** Kerrigan Toth on 4/15/2020 06:04 PM

GWWO to respond to question number 5.

Oak responses are as follows:

Question #1. Scope item has been revised. There is no requirement for pre-approved abatement contractors.

Question #2. Inside the limits of disturbance of each phase and all new lawn areas until they are accepted by FCPS.

Question #3. Correct

Question #4. The report for Rock Creek performed by Salut is included and located at the end of specification section 02 4100. The Waverley report was performed by Aero and is also included at the end of specification 02 4100.

Question #5 response by GWWO/Adtek

Question #6. Confirmed

**ANSWER** Jason Hearn on 4/19/2020 08:38 PM

5. The sewer and water services for the existing building on C-1D will be removed in Phase 3 along with the existing building as indicated. With this update, all utilities to be removed are addressed.

## **ASSIGNMENTS**

Kerrigan Toth (Oak Contracting LLC) Done On 4/15/2020

Jason Hearn (GWWO, Inc.) Done On 4/22/2020



Waverley Elementary School

REQUEST FOR INFORMATION/CLARIFICATION # 1

April 15, 2020

1. Please provide a list of the FCPS approved hazmat abatement contractors.
2. 2A Scope # 1.20, please clarify the area of maintenance, is it the entire site or is it within the L-O-D?
3. Please confirm we are to bid the quantities and locations shown in the AERO EH&S abatement survey as no site walk is available to verify quantities and locations identified.
4. Is there an asbestos survey available for Rock Creek Center?
5. Are we to assume that all utilities that are not X-ed out on the drawings are to remain? If not, please provide drawings to indicate otherwise.
6. The existing water meter vault is to remain and become the permanent source of water supply for the new school and that no other vaults will be required, please confirm.

Waverley Elementary School RFI #1 (5050-04-12).bql



Request for Information  
Detailed with Comments and Links  
**PB-051**

Waverley Elementary School Replacement (1901)

201 Waverley Drive  
Frederick, Maryland 21702

PB-051 - Site Furnishings Substitution Request

**Subject**

Site Furnishings Substitution Request

**Status**

Closed ●

**Discipline**

**Importance**

**Location**

**Created On**

04/15/2020

**Due Date**

04/22/2020

**Date Resolved**

04/21/2020

**Author**

Kerrigan Toth  
Oak Contracting LLC

**Resolved By**

Jason Hearn  
GWWO, Inc.

**QUESTION** Kerrigan Toth on 4/15/2020 06:16 PM

See attached substitution request from Wausau Tile for your review.



File

SubReq\_Site Furni...  
Kerrigan Toth

**ANSWER** Jason Hearn on 4/21/2020 09:49 AM

This substitution request is REJECTED. Tectura Designs is already listed as an acceptable manufacturer for precast terrazzo treads. Poured-in-place resinous matrix terrazzo is what is specified, not terrazzo tile. There does not appear to be a bike rack model that matches the basis-of-design. Benches and waste receptacles are not included on this project and have been removed from the specifications.

**ASSIGNMENTS**

Jason Hearn (GWWO, Inc.) Done On 4/22/2020

## SUBSTITUTION REQUEST

(During the Bidding/Negotiating Stage)

|   |  |  |
|---|--|--|
| Project: <u>Waverley Elementary School</u>            | Substitution Request Number: <u>Spec-0000115</u>     |  |
| <u>Frederick, MD</u>                                  | From: <u>LeadGen Wausau,</u>                         |  |
| To: <u>Dave Toth, Frederick County Public Schools</u> | Date: <u>04/15/2020</u>                              |  |
| <u>dtoth@oakcontracting.com, 410.332.1009</u>         | A/E Project Number: _____                            |  |
| Re: <u>Site Furnishings</u>                           | Contract For: <u>Frederick County Public Schools</u> |  |

|  |   |  |
|--|---|--|
| Specification Title: <u>Site Furnishings</u> | Description: <u>Site Furnishings</u>            |  |
| Section: <u>323000</u> Page: <u>2</u>        | Article/Paragraph: <u>Products-Manufactures</u> |  |

Proposed Substitution: Park Furnishings - Bike Racks

|  |   |                              |
|--|---|------------------------------|
| Manufacturer: <u>Wausau Tile</u>                 | Address: <u>PO Box 1520 Wausau, WI 54402-1520</u> | Phone: <u>(800) 388-8728</u> |
| Trade Name: <u>Park Furnishings - Bike Racks</u> | Model No.: <u>N/A</u>                             |                              |

Attached data includes product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.

Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation.

### The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.

Submitted by: LeadGen Wausau

Signed by: LeadGen Wausau

Firm: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: , rjucius@thehunleygroup.com

### A/E' s REVIEW AND ACTION

- ☐ Substitution approved - Make submittals in accordance with Specification Substitution Procedures.
- ☐ Substitution approved as noted - Make submittals in accordance with Specification Substitution Procedures.
- ☐ Substitution rejected - Use specified materials.
- ☐ Substitution Request received too late - Use specified materials.

Signed by: \_\_\_\_\_ Date: \_\_\_\_\_

Supporting Data Attached: ☐ Drawings ☐ Product Data ☐ Samples ☐ Tests ☐ Reports ☐ \_\_\_\_\_

## SUBSTITUTION REQUEST

(During the Bidding/Negotiating Stage)

|   |  |
|---|--|
| Project: <u>Waverley Elementary School</u>            | Substitution Request Number: <u>Spec-0000116</u>     |
| <u>Frederick, MD</u>                                  | From: <u>LeadGen Wausau,</u>                         |
| To: <u>Dave Toth, Frederick County Public Schools</u> | Date: <u>04/15/2020</u>                              |
| <u>dtoth@oakcontracting.com, 410.332.1009</u>         | A/E Project Number: _____                            |
| Re: <u>Site Furnishings</u>                           | Contract For: <u>Frederick County Public Schools</u> |

|  |   |
|--|---|
| Specification Title: <u>Site Furnishings</u> | Description: <u>Site Furnishings</u>            |
| Section: <u>323000</u> Page: <u>2</u>        | Article/Paragraph: <u>Products-Manufactures</u> |

Proposed Substitution: Benches - MF Series

|  |   |                              |
|--|---|------------------------------|
| Manufacturer: <u>Wausau Tile</u>       | Address: <u>PO Box 1520<br/>Wausau, WI 54402-1520</u> | Phone: <u>(800) 388-8728</u> |
| Trade Name: <u>Benches - MF Series</u> | Model No.: <u>N/A</u>                                 |                              |

Attached data includes product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.

Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation.

### The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.

Submitted by: LeadGen Wausau

Signed by: LeadGen Wausau

Firm: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_,

Telephone: , rjucius@thehunleygroup.com

### A/E' s REVIEW AND ACTION

- ☐ Substitution approved - Make submittals in accordance with Specification Substitution Procedures.
- ☐ Substitution approved as noted - Make submittals in accordance with Specification Substitution Procedures.
- ☐ Substitution rejected - Use specified materials.
- ☐ Substitution Request received too late - Use specified materials.

**Signed by:** \_\_\_\_\_ **Date:** \_\_\_\_\_

Supporting Data Attached: ☐ Drawings ☐ Product Data ☐ Samples ☐ Tests ☐ Reports ☐ \_\_\_\_\_

## SUBSTITUTION REQUEST

(During the Bidding/Negotiating Stage)

|   |  |
|---|--|
| Project: <u>Waverley Elementary School</u>            | Substitution Request Number: <u>Spec-0000117</u>     |
| <u>Frederick, MD</u>                                  | From: <u>LeadGen Wausau,</u>                         |
| To: <u>Dave Toth, Frederick County Public Schools</u> | Date: <u>04/15/2020</u>                              |
| <u>dtoth@oakcontracting.com, 410.332.1009</u>         | A/E Project Number: _____                            |
| Re: <u>Site Furnishings</u>                           | Contract For: <u>Frederick County Public Schools</u> |

|  |   |
|--|---|
| Specification Title: <u>Site Furnishings</u> | Description: <u>Site Furnishings</u>            |
| Section: <u>323000</u> Page: <u>2</u>        | Article/Paragraph: <u>Products-Manufactures</u> |

Proposed Substitution: Waste Receptacles - MF Series

|  |   |                              |
|--|---|------------------------------|
| Manufacturer: <u>Wausau Tile</u>                 | Address: <u>PO Box 1520<br/>Wausau, WI 54402-1520</u> | Phone: <u>(800) 388-8728</u> |
| Trade Name: <u>Waste Receptacles - MF Series</u> | Model No.: <u>N/A</u>                                 |                              |

Attached data includes product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.

Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation.

### The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.

Submitted by: LeadGen Wausau

Signed by: LeadGen Wausau

Firm: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_,

Telephone: , rjucius@thehunleygroup.com

### A/E' s REVIEW AND ACTION

- ☐ Substitution approved - Make submittals in accordance with Specification Substitution Procedures.
- ☐ Substitution approved as noted - Make submittals in accordance with Specification Substitution Procedures.
- ☐ Substitution rejected - Use specified materials.
- ☐ Substitution Request received too late - Use specified materials.

**Signed by:** \_\_\_\_\_ **Date:** \_\_\_\_\_

Supporting Data Attached: ☐ Drawings ☐ Product Data ☐ Samples ☐ Tests ☐ Reports ☐ \_\_\_\_\_

## SUBSTITUTION REQUEST

(During the Bidding/Negotiating Stage)

|   |  |
|---|--|
| Project: <u>Waverley Elementary School</u>            | Substitution Request Number: <u>Spec-0000122</u>     |
| <u>Frederick, MD</u>                                  | From: <u>LeadGen Wausau,</u>                         |
| To: <u>Dave Toth, Frederick County Public Schools</u> | Date: <u>04/15/2020</u>                              |
| <u>dtoth@oakcontracting.com, 410.332.1009</u>         | A/E Project Number: _____                            |
| Re: <u>Resinous Matrix Terrazzo Flooring</u>          | Contract For: <u>Frederick County Public Schools</u> |

---

|   |   |
|---|---|
| Specification Title: <u>Resinous Matrix Terrazzo Flooring</u> | Description: <u>Resinous Matrix Terrazzo Flooring</u> |
| Section: <u>096623</u> Page: <u>3</u>                         | Article/Paragraph: <u>Products- Terrazzo Floors</u>   |

Proposed Substitution: Terrazzo Tile - Traditional Series

|   |   |                              |
|---|---|------------------------------|
| Manufacturer: <u>Wausau Tile</u>                      | Address: <u>PO Box 1520<br/>Wausau, WI 54402-1520</u> | Phone: <u>(800) 388-8728</u> |
| Trade Name: <u>Terrazzo Tile - Traditional Series</u> | Model No.: <u>N/A</u>                                 |                              |

Attached data includes product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.

Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation.

### The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.

Submitted by: LeadGen Wausau

Signed by: LeadGen Wausau

Firm: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: , rjucius@thehunleygroup.com

### A/E' s REVIEW AND ACTION

- ☐ Substitution approved - Make submittals in accordance with Specification Substitution Procedures.
- ☐ Substitution approved as noted - Make submittals in accordance with Specification Substitution Procedures.
- ☐ Substitution rejected - Use specified materials.
- ☐ Substitution Request received too late - Use specified materials.

**Signed by:** \_\_\_\_\_ **Date:** \_\_\_\_\_

Supporting Data Attached: ☐ Drawings ☐ Product Data ☐ Samples ☐ Tests ☐ Reports ☐ \_\_\_\_\_

## **Terrazzo Tile Specification**

### **Section 09 66 16**

#### **Part 1 – General**

##### **1.01 SUMMARY**

- A. Types of Terrazzo Tile work included:
  - 1. Terrazzo Tile Floor and Wall Tile
  - 2. Precast Terrazzo Accessories
- B. Setting material, grouts, sealants and caulks
- C. Installation of terrazzo tiles
- D. Related work not specified under this section
  - 1. Sustainable Design Requirement: Section 01 81 13
  - 2. Concrete Floors: Section: 03 30 00
  - 3. Color, size, thickness, finish and type: Section 06 06 00 Schedule for finishes.
  - 4. Subfloor testing and preparation: Section 09 05 16

##### **1.02 REFERENCES**

- A. American Society for Testing and Materials (ASTM)
  - 1. ASTM C-140, C-150, C-293, C-373, C-482, C-485, C-499, C-502, C-609, C-648, C-650, C-674, C-1243, C-1378, C-1523
  - 2. ANSI A137.1 9.6 section
- B. Tile Council of America (TCNA)
  - 1. Tile Council of North America (TCNA) Handbook – latest edition
- C. American National Standards Institute (ANSI)
  - 1. ANSI A108.1 thru A108.17
  - 2. ANSI A118.1 thru A118.15

##### **1.03 QUALITY ASSURANCE**

- A. Setting and Grouting Materials: Provide materials obtained from one source for each type and color of grout and setting materials.
- B. TCNA Standards: Comply with specifications under the current Handbook for Tile Installation
- C. Manufacturer to supply written Terrazzo Tile Protocol upon request.

##### **1.04 DELIVERY, STORAGE AND HANDLING**

- A. Packaging and Shipping: Terrazzo Tile to be delivered in original unopened packaging with legible manufacturer identification including size, color, manufacture date and job number.
- B. Nominal 12" x 12", 16" x 16" and 12" x 24" tiles are boxed, banded and palletized. Our 24" x 24" are unboxed, banded and palletized.
- C. Storage and Protection: Terrazzo Tile is to be stored indoors, in a climate-controlled environment, sheltered from moisture in original packaging. Protect from damage by other trades.
- D. Report all damage due to shipment immediately. Customer is required to sign the Bill of Lading slip noting damaged product. Picture proof is required.

FEBRUARY 2020

#### 1.05 PROJECT CONDITIONS

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

#### 1.06 WARRANTY

- A. Manufacturer/Installer shall warrant installed terrazzo tile and accessories for a period of 1 year from date of substantial completion against product defects.
- B. Maintenance related matters are not considered a product defect and are not warrantable.

### Part 2 – Products

#### 2.01 MANUFACTURERS

- A. Acceptable Manufacturer:
  - a. Wausau Tile, Inc.
- B. Clarification Note: Drawings and specifications are based on manufacturer's proprietary literature from Wausau Tile, Inc. Other manufacturers shall comply with minimum levels of material specifications and detailing indicated on the drawings of specified herein.

#### 2.02 MATERIALS

- A. Portland Cement: ASTM C-150 Specifications for Portland Cement.
- B. Aggregates: All aggregates to meet ASTM C-33 specifications, cleaned and properly graded to size. Aggregate shall be blended to meet individual project requirements.
  - a. The aggregates used have a natural color range and come in a variety of sizes and colors. Therefore, the aesthetic class/shade range as per ASTM test C609 will vary from a V1 rating to a V2 rating.
  - b. The aggregates used have a natural color range. This can cause slight variances in overall color. Tiles should be blended at the job site from several cartons/pallets during installation
- C. Marble chips, size to conform with NTMA gradation standards.
- D. Coloring: Pigments used shall be inorganic, resistant to alkalinity and used per manufacturer's recommendations.
- E. Caulks & Sealants:
  - a. Urethane or Polyurethane Sealant
  - b. Color to be selected by Architect from standard color pallet.
- F. Cleaner: Liquid neutral chemical cleaner, with pH factor between 7 and 8, of
  - a. formulation recommended by sealer manufacture for type of precast terrazzo
  - b. used and complying with NTMA requirements.
- G. Sealer: Scotchgard™ Stone Floor Protector applied to the terrazzo tile prior to packaging.

## 2.03 MANUFACTURED UNITS

- A. Precast Surfaces and Edges:
  - a. Chamfered face edges
  - b. Surfaces to be uniform in appearance and free of blemishes
- B. Color to be selected from Wausau Tile, Inc. Terrazzo Tile color palette.
- C. Custom Colors and Blends
  - a. Custom Colors or Color Matching prepared by request. It is the responsibility of the Architect, Designer or Owner to approve tile samples and corresponding precast samples prior to manufacture.
- D. Finish/Texture:
  - a. Factory Polish or Honed.
  - b. Back of tile will be ground flat and free from protrusions

## 2.03 FABRICATION

- A. Mechanically vibrated in molds.
- B. Hydraulically pressed by 900-ton/3250 psi press
- C. Steam-cured with 100 percent humidity for 18 hours at 140 degrees F
- D. Factory finish: In-line back and face grinding
- E. Factory applied initial protectant
- F. Packaged and palletized

## Part 3 - Execution

### 3.01 SOURCE QUALITY CONTROL

- A. Inspections: Documented inspection of Terrazzo Tile quality control tests.
- B. In house testing is completed on the first day's production and every 5,000 square feet after for all projects. Testing is performed on the 7th day and the 28th day after the tile has been pressed.
  - a. Compression - ASTM C140 > 8,000 psi average
  - b. Absorption - ASTM C140 < 5% average
  - c. Flexural - ASTM C293 > 1000 psi average
  - d. Specular Gloss Testing at 60 degrees - ASTM D523
  - e. Stain testing/initial protection testing
- C. All projects over 10,000 square feet will have one set of tests sent to a third-party test lab.
- D. All records are kept at Wausau Tile, Inc. for a period of 5 years.

### 3.02 TEST RESULTS

- A. Independent Test Lab completed and verified the following data:
  - a. 11 13/16" x 11 13/16" x 1/2" thick Traditional Series Cement Terrazzo Tile
    - i. C373 Water Absorption – Passes (Semi-Vitreous)
    - ii. C482 Bond Strength - > 300 psi.
    - iii. C485 Warpage Edge +/- .001% or .002 in.
    - iv. C485 Warpage Diagonal +/- .003% or .010 in.
    - v. C499 Nominal Size - range of .029 in.
    - vi. C499 Thickness - range of .029 in.
    - vii. C502 Wedging +/- .023% or .028 in.

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- viii. C609 Color Uniformity - V1 – V2
- ix. C648 Breaking Strength - > 500 lbs.
- x. C650 Resistance to Chemical Substance- not affected
- xi. C674 Flexural properties - > 1000 psi. average
- xii. Dynamic DCOF – Passes at factory
- xiii. ANSI A137.1 Section 9.6.1 “Wet Dynamic Coefficient of Friction (DCOF)”
- xiv. Average Polished Finish = .46 / Average Honed Finish = .54
- xv. C1243 Deep Abrasion Wear – passes (meets p3 standards)
- xvi. C1378 Resistance to staining - not affected.

### 3.03 INSTALLATION

- A. All installations of Terrazzo Tile shall comply with the appropriate Installation method as depicted in the current edition of the Tile Council of North America Handbook for Ceramic, Glass, and Stone Installation.
- B. The Architect or other design professional shall select which methods to be specified. All Specifications must also conform to local codes, ordinances, trade practices, and climate conditions.
- C. When setting Wausau Tile, Inc. Cementitious Terrazzo Tile an ANSI A118.4 mortar is required. The setting materials manufacturer’s printed installation instructions are to be followed in every instance.
- D. When setting Wausau Tile, Inc. Epoxy Terrazzo Tile an ANSI A118.3 epoxy adhesive is required. The setting materials manufacturer’s printed installation instructions are to be followed in every instance.
- E. A minimum of 95 percent thin-set coverage is recommended on the back of the tile with no voids exceeding two square inches and no voids with 2” of the edges. All corners and edges must be fully supported and back buttering is required on tiles larger than 12” to reach these requirements.
- F. ANSI A-108.5 installation specifications that correspond with the selected TCNA Installation Method are required. This includes substrate and surfaces inspections, location and frequency of EJ171 Movement Joint Guidelines, Placement Techniques, and grouting procedures.
  - a. Minimum recommended grout joint width is 1/8”
  - b. Deflection requirement of L/360
  - c. The maximum allowable substrate variation can be no more the 1/8” in 10' and 1/16” in 24”.
- G. Applied Initial Protectant - 3M Scotchgard™ Stone Floor Protector:
  - a. When using a heavy pigmented grout, it’s recommended to use a grout release prior to grouting. A test area is recommended to ensure the grout release was adequately applied.
  - b. If a slight grout haze occurs, it can be effectively removed from the tile by using a 3M™ Eraser Pad 3600 Pink pad with water and or 3M™ Neutral Cleaner. A floor buffer might be recommended to assist in cleaning
  - c. If a more difficult stain occurs, use a Scotch-Brite™ Doodlebug™ Easy Erasing Pad 4610 along with water and or 3M™ Neutral Cleaner. A floor buffer might be recommended to assist in cleaning.

- d. For additional protectant information and long-term care guidelines, please contact 3M via 1-800-852-9722 or [www.3m.com/facility](http://www.3m.com/facility)

### 3.04 CARE & MAINTENANCE

#### A. Cleaning

- a. Dust mop or vacuum to remove sand, dust and other contaminants off the surface
- b. Clean up spills immediately and damp mop lightly soiled floors with a neutral cleaner per 3M™
- c. For more aggressive cleaning use a mechanical buffer or auto scrubber along with a 3M™ Red Buffer Pad 5100 and Neutral Cleaner per the manufacturer's recommendations.
- d. For cleaning combined with light polishing, the Scotch-Brite™ Purple Diamond Pad Plus may be used on an auto scrubber.
- e. If a stain occurs, see 3M's technical bulletin titled Repair of Etch or Stained Terrazzo Tiles to assist with the repair.
- f. DO NOT use acidic cleaners, cleaners that contain citrus (d-limonene), 2-butoxyethanol (butyl cellulose), amine-based cleaners, isopropyl alcohol, solvent based cleaners, degreasers, or non-neutral cleaners
- g. DO NOT use spray buff products or chemical dust mop treatments.
- h. RESTROOM APPLICATION – If the product is installed in a residential or commercial restroom additional coat of a topical seal will be required to protect the floor. Restroom applications will also require a more stringent care and maintenance program.

#### B. Extended Care and Maintenance

- a. Terrazzo Tile may be periodically burnished using Scotch-Brite™ Purple Diamond Pad Plus to maintain gloss. No additional Scotchgard™ Stone Floor Protector needs to be applied to restore gloss.
- b. When the terrazzo tile no longer returns to gloss by burnishing, an additional application of Scotchgard™ Stone Floor Protector should be applied.
- c. Scotchgard™ Stone Floor Protector will wear down over time due to floor traffic. On average, high traffic areas should be recoated as needed. Light to moderate traffic areas should be recoated as needed.
- d. Please contact 3M via 1-800-852-9722 or [www.3m.com/facility](http://www.3m.com/facility) and follow their procedures for reapplication of Scotchgard™ Stone Floor Protector.
- e. Acceptable Alternates:
  - i. Aqua Mix Sealers Choice Gold
  - ii. Premium no-sheen, natural-look, low VOC, water-based penetrating sealer. Apply product per manufacturer's published instructions. To ensure maximum performance and expected wear of the sealer, use Aqua Mix cleaners.



**WAUSAU TILE**

## **Site Furnishings & Precast Concrete Warranty, Care & Maintenance, and Precast Concrete Installation & Specification**

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## **Precast Concrete & Site Furnishings Limited Warranty**

### **Precast Concrete Products:**

For a period of two (2) years when the customer has received their product, Wausau Tile, Inc. warrants its concrete products against defects in workmanship and materials per industry standards. This warranty does not cover the above products for cracking and faulting caused by settling due to an improper base; nor does it cover damage caused by impact, vandalism or natural disaster.

### **Plastic Products:**

For a period of one (1) year when the customer has received their product, Wausau Tile, Inc. warrants its plastic products against defects in workmanship and materials per industry standards.

### **Metal Products:**

For a period of five (5) years when the customer has received their product, seller warrants the under-support to be free from defects in material and workmanship.

### **Corian® / Hardwood Products:**

No warranty offered for exterior usage.

All warranty periods shall begin when the customer has received their product. The warranty does not cover any damage in transit, product misuse, intentional acts, vandalism, acts of God or improper installation. No person, except seller's president, may alter this warranty.

This warranty is in lieu of all other warranties, express or implied including, but not limited to, warranties of merchantability or fitness for particular purpose. Upon proper presentation and verification of a valid claim within the applicable warranty period seller, at its option, shall repair or replace the defective part or parts F.O.B. Wausau, Wisconsin, excluding site labor costs. This remedy is the buyer's sole and exclusive remedy. In no event shall seller be liable for any indirect, special, incidental or consequential damages.

The product(s) must be maintained as directed on the following pages, and all invoices must be paid in full or the warranty will be considered void.

Wausau Tile, Inc. will warrant any defects in surface, color and/or texture caused by poor workmanship in manufacturing. Wausau Tile, Inc.'s obligation over the period of the warranty is limited to the owner's original purchase price of product only as manufactured by Wausau Tile, Inc. THERE ARE NO WARRANTIES THAT EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF.

This warranty is validated only when Wausau Tile, Inc. is furnished with a copy of the owner's original invoice or delivery receipt.

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## Concrete Site Furnishings and Precast Concrete Care & Maintenance Procedures

Wausau Tile's concrete site furnishings and precast concrete items can be easily maintained to preserve the attractive appearance and extend the life of the product. If you have any further questions regarding maintenance or any other subject, please contact us at 800-388- 8728. When using these procedures, please follow the product manufacturer's instructions regarding the use of any equipment or cleaning materials described here.

### **Annual Maintenance**

Power sweep, then pressure wash total precast surface. Spot clean any stained areas using procedures described below.

To clean marks from concrete products, a simple off-the-shelf cleaner will handle most cases. These types of cleaners are often classified as neutral, non-aggressive cleaners, and may require effort to remove some of the tougher marks.

Examples of off-the-shelf cleaners: Citrus cleaner, Simple Green

In extreme cases, paint thinner or other more aggressive types of cleaners can be used.

Note: Always start with the most neutral cleaner and work your way toward the more aggressive cleaners. The two provided examples are not recommendations of one product over another.

Remember, this is a concrete product and is built to withstand aggressive cleaning. However, the more aggressive the cleaner, the more risk is involved for the person doing the cleaning. Strict adherence to all product warnings is suggested.

Check the precast for broken and chipped pieces. Some pieces may be patched. Notify Wausau Tile of damaged piece. Wausau Tile will then assemble and send a patch kit with repair instructions. Please contact Wausau Tile before repairing, and review patching procedures.

In all cases after cleaning and patching, it is recommended that the item be sealed or restained and sealed. This will help protect the product from the environment. Contact Wausau Tile for additional instruction or to obtain sealer and stain.

Periodically, the sealer/stain must be reapplied. The frequency between applications is based on time and use. As specified in our warranty, an annual application is recommended. In cases of extreme use, the best time for application is when the appearance of the product is showing wear or is appearing dull.

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### **Weather Maintenance of Concrete**

Please be sure to use plastic, rubber or nylon tip equipment; this will help prevent scratches on the concrete.

Deicing salts can damage concrete, causing them to scale or break up. These chemicals should be used sparingly and with caution on our concrete products. No salt-based products should be used. Calcium magnesium acetate and calcium chloride cause the least damage to concrete.

Deicers should be used only when necessary to help loosen snow and ice, and make removal easier. Never over-apply deicing products, and remove slush before it has the opportunity to refreeze. Mix the deicers with sand to increase their effectiveness and reduce overall use. Always read and follow label directions when applying deicing materials.

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## **Plastic and Metal Site Furnishings Care & Maintenance Procedures**

Wausau Tile's plastic and metal site furnishing items can be easily maintained to preserve the attractive appearance and extend the life of the product. If you have any further questions regarding maintenance or any other subject, please contact us at 800-388-8728. When using these procedures, please follow the product manufacturer's instructions regarding the use of any equipment or cleaning materials described here.

### **Annual Maintenance – Plastic Products**

Clean as needed with a mild detergent and water. These products may be treated with over-the-counter plastic cleaners/conditioners such as "Armor-All" for added luster if desired. The frequency of applications is based on environment and personal preference. All Wausau Tile plastic parts are produced using the best UV-stabilized plastics available on the market, and the use of a spray-on protectant is a personal choice. All paste-type waxes are not recommended.

Do not use grit or bleach-based cleaners, as these types of products will damage the plastic.

### **Annual Maintenance – Metal Products**

For aluminum parts, again, soap and water is the most effective method. In instances of scratching, touch-up with matching enamel paint will guard against oxidation. In extreme cases, all aluminum parts can be re-powder coated.

Metal products may be cleaned with any standard-grade cleaning solution and a soft cloth. When finished, thoroughly rinse product to remove all cleaning solution. Do not use abrasive cleaners or scrubbing pads to clean these parts, as they may damage the surface of the product and cause it to lose its luster. Harsh, acidic cleaners may also damage the product and are not recommended.

Metal products used in the food service industry may be cleaned with standard degreasers and sanitizers.

In the case of severe damage to the finish, please contact Wausau Tile, Inc. We can offer touch-up advice or replacement parts.

If there are any questions on cleaning procedures or products, please contact Wausau Tile, Inc. at 800-388-8728.

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## **Corian® and Lumber Care & Maintenance Procedures**

Wausau Tile's Corian® and Lumber site furnishing items can be easily maintained to preserve the attractive appearance and extend the life of the product. If you have any further questions regarding maintenance or any other subject, please contact us at 800-388-8728. When using these procedures, please follow the product manufacturer's instructions regarding the use of any equipment or cleaning materials described here.

### **Corian® Annual Maintenance**

Soapy water, ammonia-based cleaners or commercially available solid surface cleaners will remove most dirt and residue. Stubborn residue will require a little stronger cleaner such as Comet®.

Do not use chemicals such as: chlorinated solvents, chloroform, ketones, methylene chloride (paint removers) or acids.

For routine care & maintenance or repairs, please visit the link below and review the technical bulletin:

[http://www2.dupont.com/Surfaces\\_Commercial/en\\_US/assets/downloads/pdfs/Maintenance/CORIAN\\_CARE\\_IN\\_USE.pdf](http://www2.dupont.com/Surfaces_Commercial/en_US/assets/downloads/pdfs/Maintenance/CORIAN_CARE_IN_USE.pdf)

### **Lumber Annual Maintenance**

Wausau Tile is not a reseller for any of the products listed below. If you want to purchase any of the items below please contact the manufacture for purchasing options.

Clean hardwood at least once a year with a proper wood cleaner. Keep the wood clean, free of debris and standing water for long periods of time.

Examples of off-the-shelf cleaners:

1. Messmer's Wood and Deck Part A Cleaner
2. Penofin Pro-Tech Cleaner

(Always follow the manufactures written instructions.)

Protectants / sealers are not required but will help keep the color of the lumber present for a longer period than unprotected / sealed. If a protectant is not reapplied annually, the hardwood will fade in color on the surface.

Examples of off-the-shelf protectants:

1. Messmer's Natural Wood Finishes
2. Penofin Hardwood Finish.

(Always follow the manufactures written instructions.)

The surface of all hardwoods will fade naturally overtime due to UV. Once the hardwood has faded, it can be rejuvenated. Below are a few examples of ways to rejuvenate your hardwood.

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Use an orbital sander with 120 grit sandpaper or use a pressure-washer with less than 3,000 psi, 12" to 16" from the surface and a fan-tipped nozzle.

Messmer's Contact Info:

1.800.731.3669

[www.messmers.com](http://www.messmers.com)

Penofin Contact Info:

1.800.736.6346

[www.penofin.com](http://www.penofin.com)

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## **GUIDELINES FOR PRECAST CONCRETE TREAD INSTALLATION**

1. SUBSTRATE INSPECTION
  - A. Surface inspection for cracking and defects.
  - B. Dimension verification of architectural, shop drawings and substrate.
  - C. Any corrections to substrate are to be completed before installation.
2. PRECAST TREAD LAYOUT
  - A. Finish heights at all floors and landings to be established.
  - B. Divide number of risers into the floor to landing height and determine the exact riser height.
  - C. Establish exact tread width.
  - D. Layout and mark all finished nosing locations on walls or stringers of stairway.
  - E. Check precast tread dimensions before setting.
3. INSTALLATION OF PRECAST TREADS - THINSET APPLICATION
  - A. Substrate of concrete or steel (steel at interior application only) must be within a tolerance of 1/8" in all dimensions.
  - B. Steel or concrete surface to receive precast is to be primed with a concrete bonding agent.
  - C. Latex modified thin set mortar is used in a full bed method over concrete substrate. Epoxy thin set is used over steel substrate.
  - D. Set treads level and plumb to meet finished nosing layout marks.
4. INSTALLATION OF PRECAST TREAD - MORTAR SET APPLICATION
  - A. Steel or concrete surface to receive precast is to be primed with a concrete bonding agent.
  - B. The height of the mortar bed is established based on tread nosing layout marks. The mortar bed is then placed or screeded over primed substrate.
  - C. Treads to be placed level and plumb to established nosing layout marks.
5. INSTALLATION OF PRECAST CONCRETE TREAD - TAB SET APPLICATION
  - A. Substrate of concrete or steel (steel at interior application only) must be within a tolerance of 1/8" in all dimensions.
  - B. Tabs to be set at front and back of tread every 18" to 24" maximum.
  - C. Set treads level and plumb to established nosing layout marks.
  - D. Shimming may be required if substructure is not true.
6. CAULKING OF PRECAST TREADS
  - A. Clean all joints thoroughly, removing all debris.
  - B. Wipe all joints with caulk manufacturer's recommended cleaner prior to application.
  - C. Use a urethane caulk. (Color match caulk to precast per architect selection.)
  - D. Clean up after caulking as per caulk manufacturer's recommendations.
7. FINAL CLEANING AND SEALING OF PRECAST TREADS
  - A. Clean treads with a pH balanced soap.
  - B. Check all surfaces and caulking, make repairs as necessary.
  - C. Apply a coat of concrete sealer as per manufacturer's recommendations. (Precast must be completely clean and dry before sealer is applied.)

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## Custom Precast Concrete

### Section 03 04 00

#### Part 1 – General

##### 1.01 SUMMARY

- A. Perform all work required to furnish and complete the proper installation of precast concrete.
- B. Types of Precast Concrete work include:
  - 1. Precast Concrete Stairs
  - 2. Precast Concrete Caps
  - 3. Precast Concrete Benches
  - 4. Precast Concrete Copings
  - 5. Precast Concrete Veneer
  - 6. Precast Concrete Planters
  - 7. Precast Concrete \_\_\_\_\_
- C. Setting material, grouts, sealants and caulks
- D. Installation of precast concrete
- E. Related work not specified under this section
  - 1. Installation of steel units to receive precast concrete
  - 2. Installation of Concrete substrate to receive precast

##### 1.02 REFERENCES

- A. American Society for Testing and Materials (ASTM)
  - 1. ASTM C-150
  - 2. ASTM C-128
  - 3. ASTM C-260
  - 4. ASTM C-31
  - 5. ASTM C-494
  - 6. ASTM C-39

##### 1.03 SUBMITTALS

- A. Shop Drawings
  - 1. Submit fabrication drawings of all precast concrete items showing detailed sections and profile for all precast items. Details shall show all reinforcing and cast in hardware.
- B. Samples
  - 1. Submit 1 sample for color and texture approval.
    - a. Color to be selected from manufacturer's standard offerings.
    - b. Match existing or architect's sample
    - c. Custom Sample Number \_\_\_\_\_
- C. Submit a copy of manufacturer's Quality Assurance and Procedure Manual
- D. Performance Requirements
  - 1. Compressive Strength 5,000 psi minimum
  - 2. Air Content 6-8%
  - 3. Water-Cement Ration .45

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- 4. Deflection MAX: L/720
- E. Test Results
  - 1. Manufacturer shall furnish test results attesting that materials meet specification requirements.

### 1.04 QUALITY ASSURANCE

- A. Qualifications: Precast Concrete Manufacturer and Trade Contractor must have a minimum of 5 years of successful experience on projects of similar magnitude and complexity to the indicated project.
- B. Manufacturer and contractor to be prequalified by Architect prior to bidding and failure to do so will void bid.

### 1.05 DELIVERY, STORAGE, AND HANDLING

- A. Packaging and Shipping: precast concrete to be palletized, shrink wrapped and marked with legible manufacturer identification, including piece number and quantities.
- B. Storage and Protection precast concrete to be stored in secure area in original packaging.
- C. Protect from damage by other trades.
- D. Report all damage due to shipment immediately. Customer is required to sign the Bill of Lading slip detailing the damaged product. Picture proof is required.

### 1.06 WARRANTY

- A. For a period of two (2) years from delivery of precast concrete, manufacturer warrants the precast concrete products against defects in workmanship and materials per industry standards. This warranty does not cover the above products for cracking and faulting caused by settling due to improper or faulty substrates or improper installation; nor does it cover damage caused by impact, vandalism or natural disaster.

## PART 2 – PRODUCTS

### 2.01 MANUFACTURERS

- A. Acceptable Manufacturer:
  - 1. Wausau Tile, Inc. | 1.800.388.8728 | info@wausautile.com | www.wausautile.com
- B. Clarification Note: Drawings and specifications are based on manufacturer's proprietary literature from Wausau Tile, Inc. Other manufacturers shall comply with minimum levels of material specifications and detailing indicated on the drawings of specified herein.

### 2.02 MATERIAL REQUIREMENTS

- A. Portland Cement: ASTM C-150 Specifications for Portland Cement.
- B. Aggregates: Aggregate shall be blended to meet individual project requirements.
- C. Coloring; Pigments used shall be inorganic, resistant to alkalinity and used per manufacturer's recommendations.
- D. Reinforcement and Hardware:
  - 1. Reinforce precast with deformed rods as recommended by precast concrete manufacturer.
- E. Abrasive Inserts: Shall consist of silica sand and epoxy.
  - 1. Abrasive Color: \_\_\_\_\_

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2. Specify one to three lines.
- F. Setting Materials, Caulks & Sealants
  1. Color(s) to be selected by Architect.
  2. Sealer: Colorless, pure acrylic water repellent sealer. Sealer to maintain natural look of concrete surface with no glaze or gloss, darkening or color change.
  3. Precast manufacturer is not a reseller for any of the above products. Please contact the following supplier for information and recommendations on job specific installation materials:
    - a. Acceptable Supplier:  
Custom Building Products/Aqua Mix, 800-272-878  
E-mail: [info@cbpmail.net](mailto:info@cbpmail.net) Website: [www.custombuildingproducts.com](http://www.custombuildingproducts.com)

## 2.03 MANUFACTURED UNITS

- A. Sizing Tolerances
  1. All units to conform to shop drawings with a (+/-) 1/8" tolerance in dimension.
- B. Precast Surfaces and Edges:
  1. All exposed edges to have minimum of 1/8" radius to prevent chipping.
  2. All finished surfaces to match approved control sample.
  3. All precast concrete finished surfaces to be factory sealed.

## PART 3 – EXECUTION

### 3.01 INSPECTION

- A. Examine substrates for the following:
  1. Defects or cracks in existing work or substrate.
  2. Deviations beyond allowable tolerances for the substrate.
- B. Continue with installation of precast units only when all defects have been corrected.

### 3.02 Project Conditions

- A. Do not install products under environmental conditions outside setting material manufacturer's absolute limits.

### 3.3 INSTALLATION

- A. Precast Tread setting methods include
  1. Thin Set Application
    - a. Substrate of concrete or steel (steel at interior application only). Must be within a tolerance of 1/8" in all dimensions.
    - b. Latex modified thin set mortar used over concrete substrate.
      1. Setting bed must be continuous under the entire length of the tread and behind the entire riser. Setting materials utilized per manufacture's recommended instruction.
    - c. Epoxy thin set is used over steel substrate.
      1. Setting bed must be continuous under the entire length of the tread and behind the entire riser. Setting materials utilized per manufacture's recommended instruction.
    - d. Set treads level and plumb to meet finished nosing layout.

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2. Mortar Set Application
  - a. Substrate of concrete or steel (steel at interior application only). Must be within a tolerance of 1/8" in all dimensions.
  - b. The height of the mortar bed is established based on tread nosing layout marks and precast thickness. The mortar bed is then placed or screeded over primed substrate.
    1. Setting bed must be continuous under the entire length of the tread and behind the entire riser. Setting materials utilized per manufacture's recommended instruction.
  - c. Set treads level and plumb to meet finished nosing layout.
3. Tab Set Application
  - a. Substrate of concrete or steel (steel at interior application only) must be within a tolerance of 1/8" in all dimensions.
  - b. Tabs to be set at front and back of tread every 12" O.C. minimum.
  - c. Set treads level and plumb to established nosing layout.
- B. Joints
  1. Joints between adjacent precast should be a minimum of 1/8"-1/4".
- C. Caulking of Precast
  1. Clean all joints thoroughly, removing all debris.
  2. Wipe all joints with caulk manufacturer's recommended cleaner prior to application.
  3. Use urethane caulk. (Color match caulk to precast per architect selection.)
  4. Clean up after caulking as per caulk manufacturer's recommendations.
- D. Precast Concrete products setting or installation methods are to be reviewed by the manufacturer and setting materials supplier.
- E. Final Cleaning of Precast Concrete
  1. Check all surfaces and caulking, make repairs as necessary.
  2. Clean treads with a pH balanced soap.
- F. Protection:
  1. Upon completion, the work shall be ready for final inspection and acceptance by owner or owner's agent.
  2. General Contractor shall protect the finished work from the time the installing contractor completes the work.
- G. Finish:
  1. Overall match to approved sample and per industry standards.
  2. All products to be factory sealed.

## PART 4 – CARE AND MAINTENANCE

### 4.1

- A. Cleaning
  1. To preserve the appearance and extend the life of the Precast Concrete cleaning and maintenance processes must be in place. When using the following procedures, please follow the product manufacturer's instructions regarding the use of any equipment or cleaning materials described here.
    - a. Power sweep, then pressure wash precast surface. Spot clean any stained areas.

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**WAUSAU TILE**

- b. Spot clean any stained areas by using a neutral, non-aggressive cleaner. This may require effort to remove some of the tougher marks or stains.
      1. Example of off-the-shelf cleaners: Citrus cleaner, Simple Green
    - c. Always start with the most neutral cleaner and work your way toward the more aggressive cleaners.
    - d. In extreme cases, contact Tectura Designs to discuss options
    - e. Be sure to use plastic, rubber or nylon tip equipment; this will help prevent scratches on the concrete.
  2. Precast Concrete is built to withstand aggressive cleaning; however, the more aggressive the cleaner, the more risk is involved. Strict adherence to all product warnings is suggested.
  3. In all cases after cleaning and/or patching, it is recommended that the Precast be sealed. This will help protect the product from environmental effects. Contact manufacturer to obtain sealer and stain information based on specific job.
- B. Maintenance
  1. Annual maintenance is recommended; however, in cases of extreme use, the best time for application is when the appearance of the product is showing wear or is appearing dull.
  2. Check the precast for broken and chipped pieces. If damaged, contact manufacturer before repairing to order a patch kit and obtain patching procedures.
  3. De-icing salts can damage concrete, causing them to scale or break apart. If necessary, these chemicals should be used sparingly and with caution on our concrete products.
    - a. Salt based products are not recommended
  4. Deicers should be used only when necessary to help loosen snow and ice, and make removal easier. Never over-apply de-icing products. Mix the deicers with sand to increase their effectiveness and reduce overall use.
    - a. Always read and follow label directions when applying de-icing materials.
    - b. Calcium magnesium acetate chloride tends to cause the least amount of damage to Precast Concrete
  5. Other manufacturer's products used in conjunction with the Precast Concrete may require additional maintenance. Including but not limited to: Wood, Metals, Plastics, etc. Contact product specific manufacturers for their maintenance requirements.

Updated: Feb2020

# **WAUSAU TILE** TERRAZZO TILE

## PRODUCT ADVANTAGES

- Manufactured in the USA
- Factory Finished
- Tile Set Installation
- Custom Color Creation Available

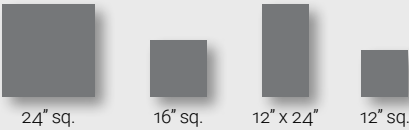


P.S. 340 Elementary School | New York, NY | Precast Cement Terrazzo Tread and Risers, Precast Cement Terrazzo Panels, Precast Cement Terrazzo Landings



Mel's Diner | Universal City, CA | Custom Colors - Cement Terrazzo Tile

STANDARD SIZES



| LENGTH      | WIDTH       | THICKNESS | WEIGHT             |
|-------------|-------------|-----------|--------------------|
| 11 13/16"   | 11 13/16"   | 1/2"      | 6.7 lbs. per sqft. |
| * 11 13/16" | * 11 13/16" | * 5/8"    | * 8 lbs. per sqft. |
| 15 13/16"   | 15 13/16"   | 5/8"      | 8 lbs. per sqft.   |
| 11 13/16"   | 23 13/16"   | 5/8"      | 8 lbs. per sqft.   |
| 23 13/16"   | 23 13/16"   | 5/8"      | 8 lbs. per sqft.   |

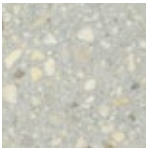
\*Series Sesto™

TECHNICAL INFORMATION

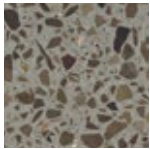
| PROPERTY                  | ADVANCED TESTING VALUE                       |
|---------------------------|--|
| Compression               | > 8,000 PSI avg. (ASTM C 140)                |
| Absorption                | < 5% avg. (ASTM C 140)                       |
| Flexural                  | > 1,000 PSI avg. (ASTM C 293)                |
| C373 Water Absorption     | Passes (Semi-Vitreous)                       |
| C482 Bond Strength        | > 300 PSI                                    |
| C485 Warpage Edge         | +/- .001% or .002 in.                        |
| C485 Warpage Diagonal     | +/- .003% or .010 in.                        |
| C499 Nominal Size         | Range of .029 in.                            |
| C499 Thickness            | Range of .029 in.                            |
| Dynamic DCOF              | Passes at factory                            |
| ANSI A137.1 Section 9.6.1 | "Wet Dynamic Coefficient of Friction (DCOF)" |
| Average Polished Finish   | .46  |
| Average Honed Finish      | .54  |

Testing based on 12" x 12" x 1/2" Traditional Series Cement Terrazzo Tile.

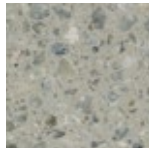
## RIVER RUN SERIES



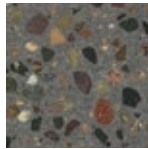
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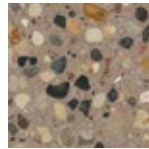
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OUTER BANKS



TZ03  
FOGGY DAY



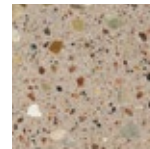
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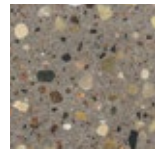
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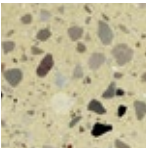
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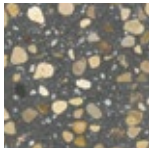
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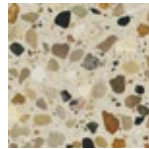
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RIVER ROCK



TZ09  
SUNNY SHORES



TZ51  
SLEEPY HOLLOW



TZ52  
SHORELINE

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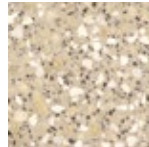
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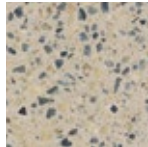
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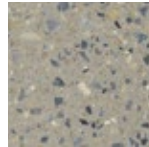
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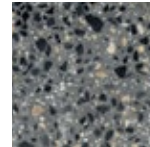
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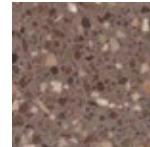
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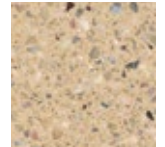
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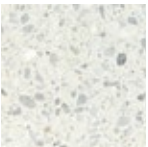
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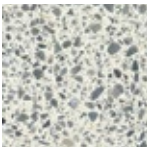
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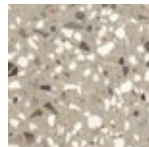
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GINGER



TZ30  
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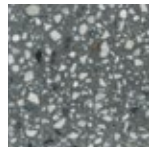
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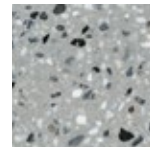
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TZ33  
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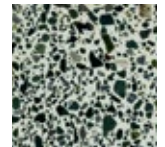
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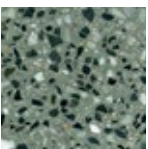
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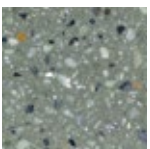
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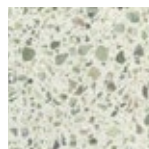
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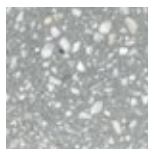
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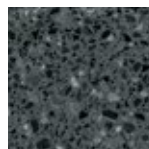
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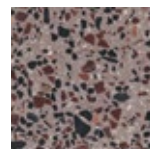
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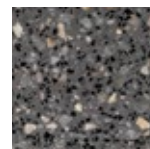
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SLATE



TZ90  
MIDNIGHT



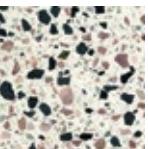
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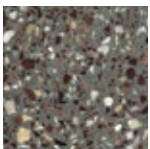
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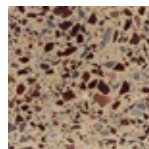
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TZ94  
CRYSTAL QUARTZ



TZ95  
COFFEE BEAN

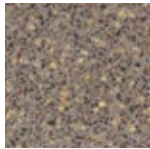


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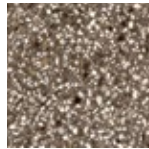
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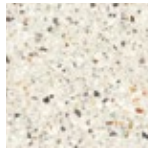
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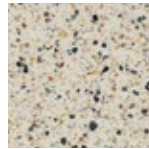
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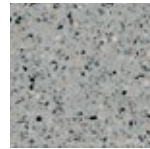
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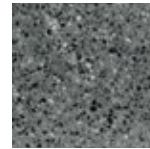
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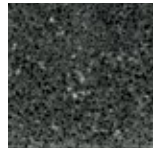
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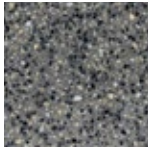
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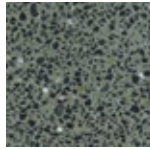
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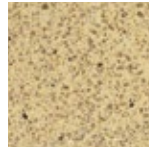
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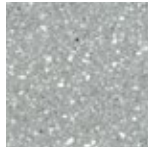
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TZ19  
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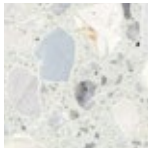
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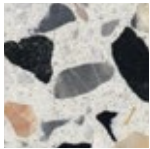
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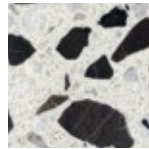
## SERIES SESTO™



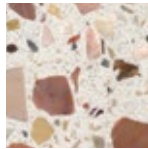
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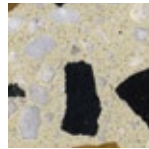
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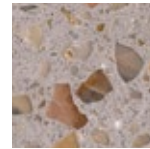
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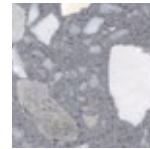
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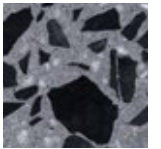
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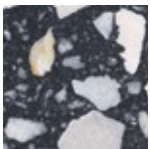
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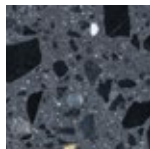
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SST17



SST18



SST19



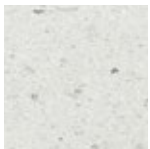
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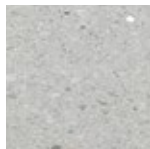
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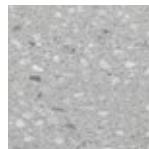
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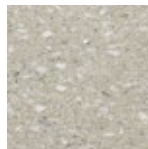
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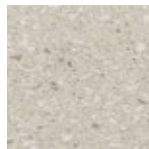
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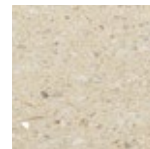
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TZ304  
VAPOR



TZ305  
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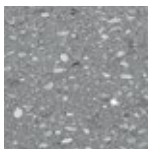
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TZ307  
MOCHA



TZ308  
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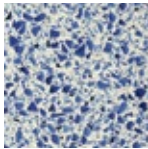


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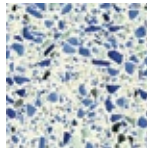
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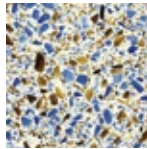
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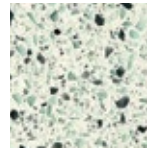
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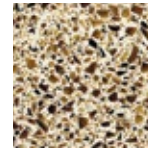
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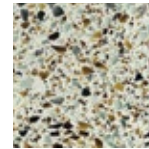
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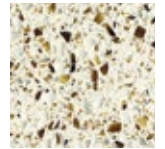
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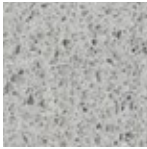
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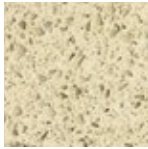
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BARBADOS



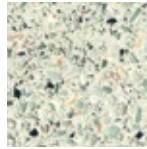
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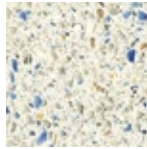
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TZ54  
AMBIENCE



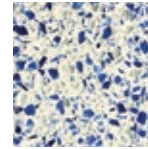
TZ63  
BRILLIANCE



TZ65  
ESSENCE



TZ68  
RADIANCE



TZ111  
MAUI

# **Terrazzo Tile Specification**

## **Section 09 66 16**

### Part 1 – General

#### 1.01 SUMMARY

- A. Types of Terrazzo Tile work included:
  - 1. Terrazzo Tile Floor and Wall Tile
  - 2. Precast Terrazzo Accessories
- B. Setting material, grouts, sealants and caulks
- C. Installation of terrazzo tiles
- D. Related work not specified under this section
  - 1. Sustainable Design Requirement: Section 01 81 13
  - 2. Concrete Floors: Section: 03 30 00
  - 3. Color, size, thickness, finish and type: Section 06 06 00 Schedule for finishes.
  - 4. Subfloor testing and preparation: Section 09 05 16

#### 1.02 REFERENCES

- A. American Society for Testing and Materials (ASTM)
  - 1. ASTM C-140, C-150, C-293, C-373, C-482, C-485, C-499, C-502, C-609, C-648, C-650, C-674, C-1243, C-1378, C-1523
  - 2. ANSI A137.1 9.6 section
- B. Tile Council of America (TCNA)
  - 1. Tile Council of North America (TCNA) Handbook – latest edition
- C. American National Standards Institute (ANSI)
  - 1. ANSI A108.1 thru A108.17
  - 2. ANSI A118.1 thru A118.15

#### 1.03 QUALITY ASSURANCE

- A. Setting and Grouting Materials: Provide materials obtained from one source for each type and color of grout and setting materials.
- B. TCNA Standards: Comply with specifications under the current Handbook for Tile Installation
- C. Manufacturer to supply written Terrazzo Tile Protocol upon request.

#### 1.04 DELIVERY, STORAGE AND HANDLING

- A. Packaging and Shipping: Terrazzo Tile to be delivered in original unopened packaging with legible manufacturer identification including size, color, manufacture date and job number.
- B. Nominal 12" x 12", 16" x 16" and 12" x 24" tiles are boxed, banded and palletized. Our 24" x 24" are unboxed, banded and palletized.
- C. Storage and Protection: Terrazzo Tile is to be stored indoors, in a climate-controlled environment, sheltered from moisture in original packaging. Protect from damage by other trades.
- D. Report all damage due to shipment immediately. Customer is required to sign the Bill of Lading slip noting damaged product. Picture proof is required.

#### 1.05 PROJECT CONDITIONS

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

#### 1.06 WARRANTY

- A. Manufacturer/Installer shall warrant installed terrazzo tile and accessories for a period of 1 year from date of substantial completion against product defects.
- B. Maintenance related matters are not considered a product defect and are not warrantable.

## Part 2 – Products

### 2.01 MANUFACTURERS

- A. Acceptable Manufacturer:
  - a. Wausau Tile, Inc.
- B. Clarification Note: Drawings and specifications are based on manufacturer's proprietary literature from Wausau Tile, Inc. Other manufacturers shall comply with minimum levels of material specifications and detailing indicated on the drawings of specified herein.

### 2.02 MATERIALS

- A. Portland Cement: ASTM C-150 Specifications for Portland Cement.
- B. Aggregates: All aggregates to meet ASTM C-33 specifications, cleaned and properly graded to size. Aggregate shall be blended to meet individual project requirements.
  - a. The aggregates used have a natural color range and come in a variety of sizes and colors. Therefore, the aesthetic class/shade range as per ASTM test C609 will vary from a V1 rating to a V2 rating.
  - b. The aggregates used have a natural color range. This can cause slight variances in overall color. Tiles should be blended at the job site from several cartons/pallets during installation
- C. Marble chips, size to conform with NTMA gradation standards.
- D. Coloring: Pigments used shall be inorganic, resistant to alkalinity and used per manufacturer's recommendations.
- E. Caulks & Sealants:
  - a. Urethane or Polyurethane Sealant
  - b. Color to be selected by Architect from standard color pallet.
- F. Cleaner: Liquid neutral chemical cleaner, with pH factor between 7 and 8, of
  - a. formulation recommended by sealer manufacture for type of precast terrazzo
  - b. used and complying with NTMA requirements.
- G. Sealer: Scotchgard™ Stone Floor Protector applied to the terrazzo tile prior to packaging.

### 2.03 MANUFACTURED UNITS

- A. Precast Surfaces and Edges:
  - a. Chamfered face edges
  - b. Surfaces to be uniform in appearance and free of blemishes
- B. Color to be selected from Wausau Tile, Inc. Terrazzo Tile color palette.
- C. Custom Colors and Blends
  - a. Custom Colors or Color Matching prepared by request. It is the responsibility of the Architect, Designer or Owner to approve tile samples and corresponding precast samples prior to manufacture.
- D. Finish/Texture:
  - a. Factory Polish or Honed.
  - b. Back of tile will be ground flat and free from protrusions

### 2.03 FABRICATION

- A. Mechanically vibrated in molds.
- B. Hydraulically pressed by 900-ton/3250 psi press
- C. Steam-cured with 100 percent humidity for 18 hours at 140 degrees F
- D. Factory finish: In-line back and face grinding
- E. Factory applied initial protectant
- F. Packaged and palletized

## Part 3 – Execution

### 3.01 SOURCE QUALITY CONTROL

- A. Inspections: Documented inspection of Terrazzo Tile quality control tests.
- B. In house testing is completed on the first day's production and every 5,000 square feet after for all projects. Testing is performed on the 7th day and the 28th day after the tile has been pressed.
  - a. Compression - ASTM C140 > 8,000 psi average
  - b. Absorption - ASTM C140 < 5% average
  - c. Flexural - ASTM C293 > 1000 psi average
  - d. Specular Gloss Testing at 60 degrees - ASTM D523
  - e. Stain testing/initial protection testing
- C. All projects over 10,000 square feet will have one set of tests sent to a third-party test lab.
- D. All records are kept at Wausau Tile, Inc. for a period of 5 years.

### 3.02 TEST RESULTS

- A. Independent Test Lab completed and verified the following data:
  - a. 11 13/16" x 11 13/16" x 1/2" thick Traditional Series Cement Terrazzo Tile
    - i. C373 Water Absorption – Passes (Semi-Vitreous)
    - ii. C482 Bond Strength - > 300 psi.
    - iii. C485 Warpage Edge +/- .001% or .002 in.
    - iv. C485 Warpage Diagonal +/- .003% or .010 in.
    - v. C499 Nominal Size - range of .029 in.
    - vi. C499 Thickness - range of .029 in.
    - vii. C502 Wedging +/- .023% or .028 in.
    - viii. C609 Color Uniformity - V1 – V2
    - ix. C648 Breaking Strength - > 500 lbs.
    - x. C650 Resistance to Chemical Substance- not affected
    - xi. C674 Flexural properties - > 1000 psi. average
    - xii. Dynamic DCOF – Passes at factory
    - xiii. ANSI A137.1 Section 9.6.1 "Wet Dynamic Coefficient of Friction (DCOF)"
    - xiv. Average Polished Finish = .46 / Average Honed Finish = .54
    - xv. C1243 Deep Abrasion Wear – passes (meets p3 standards)
    - xvi. C1378 Resistance to staining - not affected.

### 3.03 INSTALLATION

- A. All installations of Terrazzo Tile shall comply with the appropriate Installation method as depicted in the current edition of the Tile Council of North America Handbook for Ceramic, Glass, and Stone Installation.
- B. The Architect or other design professional shall select which methods to be specified. All Specifications must also conform to local codes, ordinances, trade practices, and climate conditions.
- C. When setting Wausau Tile, Inc. Cementitious Terrazzo Tile an ANSI A118.4 mortar is required. The setting materials manufacturer's printed installation instructions are to be followed in every instance.
- D. When setting Wausau Tile, Inc. Epoxy Terrazzo Tile an ANSI A118.3 epoxy adhesive is required. The setting materials manufacturer's printed installation instructions are to be followed in every instance.
- E. A minimum of 95 percent thin-set coverage is recommended on the back of the tile with no voids exceeding two square inches and no voids with 2" of the edges. All corners and edges must be fully supported and back buttering is required on tiles larger than 12" to reach these requirements.
- F. ANSI A-108.5 installation specifications that correspond with the selected TCNA Installation Method are required. This includes substrate and surfaces inspections, location and frequency of EJ171 Movement Joint Guidelines, Placement Techniques, and grouting procedures.
  - a. Minimum recommended grout joint width is 1/8"
  - b. Deflection requirement of L/360

- c. The maximum allowable substrate variation can be no more than 1/8" in 10' and 1/16" in 24".
- G. Applied Initial Protectant - 3M Scotchgard™ Stone Floor Protector:
  - a. When using a heavy pigmented grout, it's recommended to use a grout release prior to grouting. A test area is recommended to ensure the grout release was adequately applied.
  - b. If a slight grout haze occurs, it can be effectively removed from the tile by using a 3M™ Eraser Pad 3600 Pink pad with water and or 3M™ Neutral Cleaner. A floor buffer might be recommended to assist in cleaning
  - c. If a more difficult stain occurs, use a Scotch-Brite™ Doodlebug™ Easy Erasing Pad 4610 along with water and or 3M™ Neutral Cleaner. A floor buffer might be recommended to assist in cleaning.
  - d. For additional protectant information and long-term care guidelines, please contact 3M via 1-800-852-9722 or [www.3m.com/facility](http://www.3m.com/facility)

### 3.04 CARE & MAINTENANCE

- A. Cleaning
  - a. Dust mop or vacuum to remove sand, dust and other contaminants off the surface
  - b. Clean up spills immediately and damp mop lightly soiled floors with a neutral cleaner per 3M™
  - c. For more aggressive cleaning use a mechanical buffer or auto scrubber along with a 3M™ Red Buffer Pad 5100 and Neutral Cleaner per the manufacturer's recommendations.
  - d. For cleaning combined with light polishing, the Scotch-Brite™ Purple Diamond Pad Plus may be used on an auto scrubber.
  - e. If a stain occurs, see 3M's technical bulletin titled Repair of Etch or Stained Terrazzo Tiles to assist with the repair.
  - f. DO NOT use acidic cleaners, cleaners that contain citrus (d-limonene), 2-butoxyethanol (butyl cellusolve), amine-based cleaners, isopropyl alcohol, solvent based cleaners, degreasers, or non-neutral cleaners
  - g. DO NOT use spray buff products or chemical dust mop treatments.
  - h. RESTROOM APPLICATION – If the product is installed in a residential or commercial restroom additional coat of a topical seal will be required to protect the floor. Restroom applications will also require a more stringent care and maintenance program.
- B. Extended Care and Maintenance
  - a. Terrazzo Tile may be periodically burnished using Scotch-Brite™ Purple Diamond Pad Plus to maintain gloss. No additional Scotchgard™ Stone Floor Protector needs to be applied to restore gloss.
  - b. When the terrazzo tile no longer returns to gloss by burnishing, an additional application of Scotchgard™ Stone Floor Protector should be applied.
  - c. Scotchgard™ Stone Floor Protector will wear down over time due to floor traffic. On average, high traffic areas should be recoated as needed. Light to moderate traffic areas should be recoated as needed.
  - d. Please contact 3M via 1-800-852-9722 or [www.3m.com/facility](http://www.3m.com/facility) and follow their procedures for reapplication of Scotchgard™ Stone Floor Protector.
  - e. Acceptable Alternates:
    - i. Aqua Mix Sealers Choice Gold
    - ii. Premium no-sheen, natural-look, low VOC, water-based penetrating sealer. Apply product per manufactures published instructions. To ensure maximum performance and expected wear of the sealer, use Aqua Mix cleaners.

## ADDENDUM #6

DATE: April 22, 2020  
BID NAME: Waverley Elementary School – New Construction  
BID NUMBER: 20C6  
BID ISSUE DATE: March 17, 2020  
DUE DATE: April 29, 2020  
DUE TIME: 11:00 A.M.

TOTAL PAGES: 100 (plus 11 sketches and 40 full-size drawings)

The following revisions and responses to questions are made to the original bid documents. This addendum forms a part of the Contract Documents and modifies the Original Solicitation Documents accordingly and as noted below. Acknowledge receipt of this Addendum in the space provided on the "Addenda" form within the Form of Proposal.

### PART 1 GENERAL (NOT USED)

### PART 2 SPECIFICATIONS

#### 2.1 VOLUME I

1. **REVISE** Specification Section 00 0115 – LIST OF DRAWING SHEETS; ISSUED FOR BID, dated 03/16/2020.
  - **REVISE** drawing sheet "A7.0A – ACCESSORY SCHEDULE" to "A7.0 – ACCESSORY SCHEDULE."
  - **DELETE** drawing sheet "A7.0B – ACCESSORY SCHEDULE."
  - **ADD** drawing sheet "C-3K.1 – SEWER PROFILES."
  - **ADD** drawing sheet "C-4T – STORMDRAIN PROFILES."

#### 2.2 VOLUME II

1. **REVISE** Section TABLE OF CONTENTS; ISSUED FOR BID, dated 03/16/2020.
  - **REVISE** Volume III, Section 32 3223 to be titled, "PRECAST MODULAR BLOCK RETAINING WALLS."
2. **DELETE** Specification Section 01 5480 – USE, HANDLING, STORAGE, TRANSPORTING, ACCUMULATION, AND DISPOSAL OF CONTROLLED MATERIAL; ISSUED FOR BID, dated 03/16/2020; **ADD** Specification Section 01 5480 – USE, HANDLING, STORAGE, TRANSPORTING, ACCUMULATION, AND DISPOSAL OF CONTROLLED MATERIAL; ADDENDUM #6, dated 04/22/2020.
3. **DELETE** Specification Section 02 0850 - ASBESTOS ABATEMENT SCOPE OF WORK; ISSUED FOR BID, dated 03/16/2020; **ADD** Specification Section 02 0850 - ASBESTOS ABATEMENT SCOPE OF WORK; ADDENDUM #6, dated 04/22/2020.
4. **DELETE** Specification Section 02 0860 - MERCURY-CONTAINING FLUORESCENT LAMP AND TUBE REMOVAL; ISSUED FOR BID, dated 03/16/2020; **ADD** Specification Section 02 0860 - MERCURY-CONTAINING FLUORESCENT LAMP AND TUBE REMOVAL; ADDENDUM #6, dated 04/22/2020.

5. **DELETE** Specification Section 02 0870 - PCB LIGHT BALLAST REMOVAL; ISSUED FOR BID, dated 03/16/2020; **ADD** Specification Section 02 0870 - PCB LIGHT BALLAST REMOVAL; ADDENDUM #6, dated 04/22/2020.
6. **DELETE** Specification Section 02 0900 - LEAD-BASED PAINT REMOVAL AND DISPOSAL; ISSUED FOR BID, dated 03/16/2020; **ADD** Specification Section 02 0900 - LEAD-BASED PAINT REMOVAL AND DISPOSAL; ADDENDUM #6, dated 04/22/2020.
7. **DELETE** Specification Section 02 0910 - LEAD-CONTAINING PAINT REMOVAL; ISSUED FOR BID, dated 03/16/2020; **ADD** Specification Section 02 0910 - LEAD-CONTAINING PAINT REMOVAL; ADDENDUM #6, dated 04/22/2020.
8. **REVISE** Specification Section 04 2000 – UNIT MASONRY; ISSUED FOR BID, dated 03/16/2020.
  - **REVISE** Part 2.2 (Concrete Masonry Units), Paragraph D, Item 3a to read, “Option 1 Manufacturer: Westbrook Concrete Block Company, Inc.”
  - **ADD** “Option 2 Manufacturer: Hagerstown Block Company,” as Item 3b under Part 2.2 (Concrete Masonry Units), Paragraph D. Include the following sub-items:
    - “1.) 042000-C1: Ground Face, GR-680.”
    - “2.) 042000-C2: Ground Face, GR-671.”
  - **ADD** “Option 3 Manufacturer: York Building Products,” as Item 3c under Part 2.2 (Concrete Masonry Units), Paragraph D. Include the following sub-items:
    - “1.) 042000-C1: Gemstone, Arctic White.”
    - “2.) 042000-C2: Gemstone, Graphite.”
  - **REVISE** Part 2.3 (Brick Units), Paragraph D, Item 1 to read, “Face Brick 1 Manufacturer: Varies.” Include the following sub-items:
    - “a. 042000-B1: Yankee Hill Brick & Tile, Metro Ironspot Velour.”
    - “b. 042000-B1: Belden Brick, Ashberry Velour.”
  - **ADD** “Face Brick 2 Manufacturer: Varies,” as Item 2 under Part 2.3 (Brick Units), Paragraph D. Include the following sub-items:
    - “a. 042000-B2: Glen Gery, Stone Grey, K12-3009.”
    - “b. 042000-B2: Belden Brick, Mod English Gray SM A.”
9. **DELETE** Specification Section 05 5000 – METAL FABRICATIONS; ISSUED FOR BID, dated 03/16/2020; **ADD** Specification 05 5000 – METAL FABRICATIONS; ADDENDUM #6, dated 04/22/2020.
  - **ADDED** information for premanufactured equipment rails to be used as an accessory for aluminum roof access ladders.
10. **DELETE** Specification Section 05 5100 – METAL STAIRS; ISSUED FOR BID, dated 03/16/2020; **ADD** Specification Section 05 5100 – METAL STAIRS; ADDENDUM #6, dated 04/22/2020.
  - **ADDED** prefabricated nosings for cast-in-place concrete steps.
  - **ADDED** information for industrial metal stairs needed to access the roof via door sills above 16” AFF.

11. **REVISE** Specification Section 08 4013 – PROTECTIVE FRAMED GLAZING ASSEMBLIES; ISSUED FOR BID, dated 03/16/2020.
  - **REVISE** Part 2.4 (Doors and Hardware), Paragraph A to read, “Doors: Mineral core type, with fire resistant composite core (FD), plies and faces as indicated in Section 08 1416.”
12. **REVISE** Specification Section 08 4313 – ALUMINUM FRAMED STOREFRONTS; ISSUED FOR BID, dated 03/16/2020.
  - **ADD** “Provide five year manufacturer warranty against failure of glass seal on insulating glass units, including interpane dusting or misting. Include provision for replacement of failed units,” as Paragraph B to Part 1.8 (Warranty). Paragraph B, “Provide twenty year...” in the original specification will now be Paragraph C.
13. **REVISE** Specification Section 08 4413 – GLAZED ALUMINUM CURTAIN WALLS; ISSUED FOR BID, dated 03/16/2020.
  - **ADD** “Provide five year manufacturer warranty against failure of glass seal on insulating glass units, including interpane dusting or misting. Include provision for replacement of failed units,” as Paragraph B to Part 1.8 (Warranty). Paragraph B, “Provide twenty year...” in the original specification will now be Paragraph C.
  - **REVISE** Part 3.4 (Field Quality Control), Paragraph F to read, “Testing Agency: Engage a qualified testing agency to perform tests and inspections.”
14. **REVISE** Specification Section 09 2116 – GYPSUM BOARD ASSEMBLIES; ISSUED FOR BID, dated 03/16/2020.
  - **DELETE** Part 3.6 (Joint Treatment), Paragraph A.
15. **REVISE** Specification Section 09 6500 – RESILIENT FLOORING; ISSUED FOR BID, dated 03/16/2020.
  - **ADD** “Extra Flooring Material: Quantity equivalent to 5 percent of each type and color,” as Item 1 under Part 1.3 (Submittals), Paragraph H.
16. **REVISE** Specification Section 09 6700 – FLUID-APPLIED FLOORING; ISSUED FOR BID, dated 03/16/2020.
  - **ADD** “Divider Strips: Zinc with projecting base of 1/8 inch,” as Paragraph B under Part 2.2 (Accessories). Include the following sub-items:
    - “1. Applications:”
      - “a. At open edges of fluid-applied flooring where adjacent finish is of same height.”
  - **REVISE** Paragraph B under Part 2.2 (Accessories) to be Paragraph C “Subfloor filler...”. All subsequent articles to follow alphabetically/sequentially.
17. **REVISE** Specification Section 09 6816 – SHEET CARPETING; ISSUED FOR BID, dated 03/16/2020.
  - **DELETE** J&J Industries, Inc. and Tarkett Commercial from list of manufacturers.
18. **REVISE** Specification Section 10 2239 – FOLDING PANEL PARTITIONS; ISSUED FOR BID, dated 03/16/2020.
  - **ADD** “Panel Substrate Facing: Steel sheet, manufacturer's standard thickness,” as Item 2 to Part 2.2 (Folding Panel Partitions – Horizontal Opening), Paragraph B. Item 2, “Panel Properties,” in the original specification will now be Item 3.

19. **DELETE** Specification Section 10 5113 – METAL LOCKERS; ISSUED FOR BID, dated 03/16/2020; **ADD** Specification Section 10 5113 – METAL LOCKERS; ADDENDUM #6, dated 04/22/2020.
  - **ADDED** Staff Locker requirements.
20. **DELETE** Specification Section 11 3013 – RESIDENTIAL APPLIANCES; ISSUED FOR BID, dated 03/16/2020; **ADD** Specification Section 11 3013 – RESIDENTIAL APPLIANCES; ADDENDUM #6, dated 04/22/2020.
  - **ADDED** model numbers for various units and revised corresponding characteristics.
  - **REVISED** undercounter refrigerator to medical locker refrigerator.
  - **ADDED** medical ice maker.
21. **DELETE** Specification Section 11 6623 – GYMNASIUM EQUIPMENT; ISSUED FOR BID, dated 03/16/2020; **ADD** Specification Section 11 6623 – GYMNASIUM EQUIPMENT; ADDENDUM #6, dated 04/22/2020.
  - **REVISED** articles as indicated.
22. **REVISE** Specification Section 11 3200 – MANUFACTURED WOOD CASEWORK; ADDENDUM #3, dated 04/01/2020.
  - **ADD** “Mastercraft Woodworking Company, Inc.: [www.mastercraftwoodworking.com/](http://www.mastercraftwoodworking.com/).” to list of manufacturers under Part 2.1, Paragraph A.
23. **REVISE** Specification Section 12 5600 – SPECIALIZED STORAGE SYSTEMS; ISSUED FOR BID, dated 03/16/2020.
  - **ADD** “color: Crystals, Tinted Blue,” to all sub-items under Part 2.3 (Materials and Construction), Paragraphs E and F.
  - **ADD** “Single Column Mobile Cart” as Item 3 in the “Cart Schedule” **under** Part 2.3 (Materials and Construction), Paragraphs E. Include the following sub-items:
    - “(a) 15 3/4"W x 40 3/4"H x 18"D.”
    - “(b) 9 slim line tray module spaces.”
    - “(c) 9 single-depth slim line trays; color: Crystals, Tinted Blue.”
    - “(d) Basis-of-Design: StorSystem CE2097 - Nimble Tower”

## 2.3 VOLUME III

1. **REVISE** Section TABLE OF CONTENTS; ISSUED FOR BID, dated 03/16/2020.
  - **REVISE** Volume III, Section 32 3223 to be titled, “PRECAST MODULAR BLOCK RETAINING WALLS.”
2. **REVISE** Specification Section 26 3213.16 – GASEOUS EMERGENCY ENGINE GENERATORS; ISSUED FOR BID, dated 03/16/2020.
  - **REVISE** Part 2.2, Paragraph C, Item 7 from “Compression” to “Mechanical” type.
  - **REVISE** Part 2.4, Paragraph H, Item 4 from “Nickel Cadmium” to “Lead Acid”.
  - **DELETE** Part 2.9, Paragraph E (Space Heater requirement), Paragraph F (Lighting requirement), Paragraph J (Interior lighting requirements) and Paragraph K (Outlet requirements).
3. **REVISE** Specification Section 28 3111 – DIGITAL ADDRESSABLE FIRE ALARM SYSTEM; ISSUED FOR BID, dated 03/16/2020.

- **CLARIFICATION:** Basis of Design shall be Silent Knight IFP-2100 per FCPS, and all devices shall be compatible with that manufacturer with BOD as System Sensor, and approved equals from Wheelock, and Gentex.
4. **REVISE** Specification Section 32 3000 – SITE FURNISHINGS; ISSUED FOR BID, dated 03/16/2020.
    - **DELETE** articles pertaining to benches and waste receptacles.
  5. **DELETE** Specification Section 32 3223 – SEGMENTAL RETAINING WALLS; ISSUED FOR BID, dated 03/16/2020; **ADD** Specification Section 32 3223 – PRECAST MODULAR BLOCK RETAINING WALLS; ADDENDUM #6, dated 04/22/2020.
    - **REVISED** to correspond with the information included in the drawings.

### **PART 3 DRAWINGS**

#### **3.1 CIVIL**

1. **REVISE** Drawing Sheet C0-A – COVER SHEET; ADDENDUM #3, dated 04/01/2020.
  - **ADD** sheets “C-3K.1 – SEWER PROFILES” and “C-4T – STORMDRAIN PROFILES” to Sheet Index.
2. **DELETE** Drawing Sheet C-1D – PHASE 3 DEMOLITION PLAN; ADDENDUM #3, dated 04/01/2020; **ADD** Drawing Sheet C-1D – PHASE 3 DEMOLITION PLAN; ADDENDUM #6 (Revision dated 04/22/2020).
  - **REVISED** extents of demolished utilities as indicated.
3. **REVISE** Drawing Sheet C-3B – SITE PLAN; ADDENDUM #3, dated 04/01/2020.
  - **ADD** ten (10) bike racks and an associated 165 SF of concrete sidewalk at bus drop-off loop between seat wall and poured-in-place playground surfacing.
4. **ADD** Drawing Sheet C-3K.1 – SEWER PROFILES; ADDENDUM #6 (Revision dated 04/22/2020).
5. **ADD** Drawing Sheet C-4T – STORMDRAIN PROFILES; ADDENDUM #6 (Revision dated 04/22/2020).

#### **3.2 ARCHITECTURAL**

1. **DELETE** Drawing Sheet CS.3 – ABBREVIATIONS, KEYNOTES, & SYMBOLS; Issued for Bid, dated 03/06/2020; **ADD** Drawing Sheet CS.3 – ABBREVIATIONS, KEYNOTES, & SYMBOLS; ADDENDUM #6 (Revision dated 04/22/2020).
  - **REVISED** master keynote list.
2. **REVISE** Drawing Sheet AC.1 – CONSTRUCTION TYPES; ADDENDUM #3, dated 04/01/2020.
  - **REVISE** designation of wall type 1.22x to be 1.32.
  - **ADD** wall type 1.33 (same as 1.32) utilizing 8” nominal CMU block.
3. **REVISE** Drawing Sheet A1.5 – FIRST FLOOR PLAN – AREA E; Issued for Bid, dated 03/06/2020.
  - **ADD** “C10” casework accessory tag to item in rooms E104, E105, E106 and E107.
  - **ADD** “C14” casework accessory tag to item rooms E114A and E114B.

- **ADD** 12" x 18" surround around column at column line 44 near door 002B. Surround to consist of wall type 2.13 on two sides; other two sides are exterior walls.
  - **REVISE** dimension between column lines AF and AF.1 to be 1'-4".
4. **REVISE** Drawing Sheet A1.7 – SECOND FLOOR PLAN – AREA A; Issued for Bid, dated 03/06/2020.
    - **ADD** casework accessory "A2" to room A220.
  5. **REVISE** Drawing Sheet A1.8 – SECOND FLOOR PLAN – AREA b; Issued for Bid, dated 03/06/2020.
    - **ADD** casework accessory "A2" to room B202.
  6. **DELETE** Drawing Sheet A1.9 – SECOND FLOOR PLAN – AREA C; Issued for Bid, dated 03/06/2020; **ADD** Drawing Sheet A1.9 – SECOND FLOOR PLAN – AREA C; ADDENDUM #6 (Revision dated 04/22/2020).
  7. **DELETE** Drawing Sheet A1.10 – SECOND FLOOR PLAN – AREA F; Issued for Bid, dated 03/06/2020; **ADD** Drawing Sheet A1.10 – SECOND FLOOR PLAN – AREA F; ADDENDUM #6 (Revision dated 04/22/2020).
  8. **DELETE** Drawing Sheet A1.12 – ROOF PLAN – AREA B; Issued for Bid, dated 03/06/2020; **ADD** Drawing Sheet A1.12 – ROOF PLAN – AREA B; ADDENDUM #6 (Revision dated 04/22/2020).
  9. **DELETE** Drawing Sheet A1.13 – ROOF PLAN – AREA C; Issued for Bid, dated 03/06/2020; **ADD** Drawing Sheet A1.13 – ROOF PLAN – AREA C; ADDENDUM #6 (Revision dated 04/22/2020).
  10. **DELETE** Drawing Sheet A1.14 – ROOF PLAN – AREA D; Issued for Bid, dated 03/06/2020; **ADD** Drawing Sheet A1.14 – ROOF PLAN – AREA D; ADDENDUM #6 (Revision dated 04/22/2020).
  11. **DELETE** Drawing Sheet A1.16 – ROOF PLAN – AREA F; Issued for Bid, dated 03/06/2020; **ADD** Drawing Sheet A1.16 – ROOF PLAN – AREA F; ADDENDUM #6 (Revision dated 04/22/2020).
  12. **DELETE** Drawing Sheet A2.2 – REFLECTED CEILING PLAN – FIRST FLOOR - AREA B; Issued for Bid, dated 03/06/2020; **ADD** Drawing Sheet A2.2 – REFLECTED CEILING PLAN – FIRST FLOOR - AREA B; ADDENDUM #6 (Revision dated 04/22/2020).
  13. **DELETE** Drawing Sheet A2.3 – REFLECTED CEILING PLAN – FIRST FLOOR - AREA C; Issued for Bid, dated 03/06/2020; **ADD** Drawing Sheet A2.3 – REFLECTED CEILING PLAN – FIRST FLOOR - AREA C; ADDENDUM #6 (Revision dated 04/22/2020).
  14. **DELETE** Drawing Sheet A2.4 – REFLECTED CEILING PLAN – FIRST FLOOR - AREA D; Issued for Bid, dated 03/06/2020; **ADD** Drawing Sheet A2.4 – REFLECTED CEILING PLAN – FIRST FLOOR - AREA D; ADDENDUM #6 (Revision dated 04/22/2020).
  15. **DELETE** Drawing Sheet A2.5 – REFLECTED CEILING PLAN – FIRST FLOOR - AREA E; Issued for Bid, dated 03/06/2020; **ADD** Drawing Sheet A2.5 – REFLECTED CEILING PLAN – FIRST FLOOR - AREA E; ADDENDUM #6 (Revision dated 04/22/2020).
  16. **DELETE** Drawing Sheet A2.6 – REFLECTED CEILING PLAN – FIRST FLOOR - AREA F; Issued for Bid, dated 03/06/2020; **ADD** Drawing Sheet A2.6 – REFLECTED CEILING PLAN – FIRST FLOOR - AREA F; ADDENDUM #6 (Revision dated 04/22/2020).
  17. **DELETE** Drawing Sheet A2.8 – REFLECTED CEILING PLAN – SECOND FLOOR - AREA B; Issued for Bid, dated 03/06/2020; **ADD** Drawing Sheet A2.8 – REFLECTED CEILING PLAN – SECOND FLOOR - AREA B; ADDENDUM #6 (Revision dated 04/22/2020).

18. **DELETE** Drawing Sheet A2.10 – REFLECTED CEILING PLAN – SECOND FLOOR - AREA F; Issued for Bid, dated 03/06/2020; **ADD** Drawing Sheet A2.10 – REFLECTED CEILING PLAN – SECOND FLOOR - AREA F; ADDENDUM #6 (Revision dated 04/22/2020).
19. **DELETE** Drawing Sheet A2.11 – CEILING DETAILS; Issued for Bid, dated 03/06/2020; **ADD** Drawing Sheet A2.11 – CEILING DETAILS; ADDENDUM #6 (Revision dated 04/22/2020).
20. **DELETE** Drawing Sheet A3.1 – EXTERIOR ELEVATIONS; Issued for Bid, dated 03/06/2020; **ADD** Drawing Sheet A3.1 – EXTERIOR ELEVATIONS; ADDENDUM #6 (Revision dated 04/22/2020).
21. **DELETE** Drawing Sheet A3.2 – EXTERIOR ELEVATIONS; Issued for Bid, dated 03/06/2020; **ADD** Drawing Sheet A3.2 – EXTERIOR ELEVATIONS; ADDENDUM #6 (Revision dated 04/22/2020).
22. **DELETE** Drawing Sheet A3.4 – EXTERIOR ELEVATIONS; Issued for Bid, dated 03/06/2020; **ADD** Drawing Sheet A3.4 – EXTERIOR ELEVATIONS; ADDENDUM #6 (Revision dated 04/22/2020).
23. **DELETE** Drawing Sheet A3.6 – EXTERIOR ELEVATIONS; Issued for Bid, dated 03/06/2020; **ADD** Drawing Sheet A3.6 – EXTERIOR ELEVATIONS; ADDENDUM #6 (Revision dated 04/22/2020).
24. **DELETE** Drawing Sheet A4.2 – BUILDING SECTIONS; Issued for Bid, dated 03/06/2020; **ADD** Drawing Sheet A4.2 – BUILDING SECTIONS; ADDENDUM #6 (Revision dated 04/22/2020).
25. **REVISE** Drawing Sheet A4.7 – WALL SECTIONS; Issued for Bid, dated 03/06/2020.
  - **REVISE** roof type to be D5.5 in drawing 2/A4.7, 4/A4.7 and 6/A4.7.
26. **DELETE** Drawing Sheet A6.2 – PLAN DETAILS; Issued for Bid, dated 03/06/2020; **ADD** Drawing Sheet A6.2 – PLAN DETAILS; ADDENDUM #6 (Revision dated 04/22/2020).
27. **DELETE** Drawing Sheet A6.11 – SECTION DETAILS; Issued for Bid, dated 03/06/2020; **ADD** Drawing Sheet A6.11 – SECTION DETAILS; ADDENDUM #6 (Revision dated 04/22/2020).
28. **DELETE** Drawing Sheet A6.12 – SECTION DETAILS; Issued for Bid, dated 03/06/2020; **ADD** Drawing Sheet A6.12 – SECTION DETAILS; ADDENDUM #6 (Revision dated 04/22/2020).
29. **DELETE** Drawing Sheet A6.13 – SECTION DETAILS; Issued for Bid, dated 03/06/2020; **ADD** Drawing Sheet A6.13 – SECTION DETAILS; ADDENDUM #6 (Revision dated 04/22/2020).
30. **DELETE** Drawing Sheet A6.19 – EXTERIOR EXPANSION JOINT DETAILS; Issued for Bid, dated 03/06/2020; **ADD** Drawing Sheet A6.19 – EXTERIOR EXPANSION JOINT DETAILS; ADDENDUM #6 (Revision dated 04/22/2020).
31. **REVISE** A7 Series drawing sheets; Issued for Bid, dated 03/06/2020.
  - **DELETE** “ADD/ALTERNATE” from counter type C2.2 in all instances of “Countertop Schedule”.
32. **DELETE** Drawing Sheet A7.0A – ACCESSORY SCHEDULE; Issued for Bid, dated 03/06/2020; **ADD** Drawing Sheet A7.0 – ACCESSORY SCHEDULE; ADDENDUM #6 (Revision dated 04/22/2020).
  - **REVISED** keynotes select casework accessories.
  - **ADDED** keynote for accessory C17; it is to be “123200-A5,” with the keynote description “Education Special Units.”

- **ADDED** keynote designations for all accessories.
  - **ADDED** drawing information from drawing sheet A7.0B – ACCESSORY SCHEDULE.
33. **DELETE** Drawing Sheet A7.0B – ACCESSORY SCHEDULE; Issued for Bid, dated 03/06/2020.
- **CONSOLIDATED** with drawing sheet A7.0A – ACCESSORY SCHEDULE.
34. **REVISE** Drawing Sheet A7.9 – INTERIOR ELEVATIONS – MEDIA CENTER; Issued for Bid, dated 03/06/2020.
- **REVISE** countertop keynote to be “123600-A” in drawing 9/A7.9.
35. **REVISE** Drawing Sheet A7.20 – CASEWORK DETAILS; Issued for Bid, dated 03/06/2020.
- **REVISE** keynote “061000-F” to be “123600-C” in drawing 7/A7.20.
36. **DELETE** Drawing Sheet A8.1 – DOOR SCHEDULE; ADDENDUM #3 (Revision dated 04/01/2020); **ADD** Drawing Sheet A8.1 – DOOR SCHEDULE; ADDENDUM #6 (Revision dated 04/22/2020).
- **REVISED** door information as indicated.
37. **DELETE** Drawing Sheet A8.2 – OPENING TYPES & DETAILS; ADDENDUM #3 (Revision dated 04/01/2020); **ADD** Drawing Sheet A8.2 – OPENING TYPES & DETAILS; ADDENDUM #6 (Revision dated 04/22/2020).
- **REVISED** interior head and jamb details; coordinated types with door schedule.
  - **REVISED** head dimension of frame type “F3” to 4 inches.
38. **REVISE** Drawing Sheet A8.3 – GLAZING SCHEDULE – EXTERIOR CURTAIN WALL; ADDENDUM #3, dated 04/01/2020.
- **REVISE** width of curtain wall “C.C” to 20’-11”.
  - **REVISE** width of curtain wall “C.D” to 9’-8”.
  - **REVISE** width of curtain wall “C.E” to be 22’-7 1/2”.
  - **ADD** width of curtain wall “C.F” to be 12’-2 1/2”.
  - **DELETE** 3” mullion cap and associated note from curtain walls “C.D” and “C.F.”
39. **REVISE** A9 Series drawing sheets; Issued for Bid, dated 03/06/2020.
- **REVISE** “FLOORING LEGEND” per Sketch ADD6.2 included with this addendum.
40. **REVISE** Drawing Sheet A9.1 – FIRST FLOOR FINISH PLAN – AREA A; Issued for Bid, dated 03/06/2020.
- **ADD** base bid floor finish for A117 (elevator cab) to be “F-1”; add/alternate floor finish to be “F-8.”
41. **REVISE** Drawing Sheet A9.5 – FIRST FLOOR FINISH PLAN – AREA E; Issued for Bid, dated 03/06/2020.
- **ADD** finishes for E103C per Sketch ADD6.2 included with this addendum.
42. **REVISE** Drawing Sheet A9.6 – FIRST FLOOR FINISH PLAN – AREA F; Issued for Bid, dated 03/06/2020.
- **ADD** base bid floor finish for F103 (elevator cab) to be “F-1”; add/alternate floor finish to be “F-8.”
43. **REVISE** Drawing Sheet A9.14 – FINISH DETAILS; Issued for Bid, dated 03/06/2020.

- **ADD** detail 14 from Sketch ADD6.1 issued as part of this addendum.
- **ADD** detail 16 from Sketch ADD6.1 issued as part of this addendum.
- **ADD** detail 15 from Sketch ADD6.2 issued as part of this addendum.

### 3.3 FOOD SERVICE

1. **REVISE** Drawing Sheet K-104 – ELECTRICAL ROUGH-IN PLAN; Issued for Bid, dated 03/06/2020.
  - **DELETE** “REMOTE FIRE PROTECTION PULL STATION DETAIL.”
  - **ADD** circle under “E.C. to Provide, Cord & Plug” for R.I. #15.

### 3.4 STRUCTURAL

1. **DELETE** Drawing Sheet S1.2 – FOUNDATION PLAN – AREA B; Issued for Bid, dated 03/06/2020; **ADD** Drawing Sheet S1.2 – FOUNDATION PLAN – AREA B; ADDENDUM #6, (Revision dated 04/22/2020).
  - **ADDED** pier details B/S1.2 and C/S1.2.
  - **REVISED** footings and drawing references as indicated.
2. **REVISE** Drawing Sheet S1.4 – FOUNDATION PLAN – AREA D; Issued for Bid, dated 03/06/2020.
  - **ADD** “#6 VERT. BARS @ 16" O.C.” to foundation walls along exterior walls of gymnasium.
3. **DELETE** Drawing Sheet S1.5 – FOUNDATION PLAN – AREA E; Issued for Bid, dated 03/06/2020 **ADD** Drawing Sheet S1.5 – FOUNDATION PLAN – AREA E; ADDENDUM #6, (Revision dated 04/22/2020).
  - **ADDED** foundations associated with new secondary roof steel along fire wall separating Areas C/D and E.
4. **REVISE** Drawing Sheet S1.8 – FLOOR & LOW ROOF FRAMING PLAN – AREA B; Issued for Bid, dated 03/06/2020.
  - **REVISE** entry canopy steel as indicated on Sketch ADD6.6 included with this addendum.
5. **DELETE** Drawing Sheet S1.9 – FLOOR & LOW ROOF FRAMING PLAN – AREA C; ADDENDUM #5, (Revision dated 04/15/2020); **ADD** Drawing Sheet S1.9 – FLOOR & LOW ROOF FRAMING PLAN – AREA C; ADDENDUM #6, (Revision dated 04/22/2020).
  - **ADDED** detail 1/S1.8.
  - **REVISED** beams and vertical shear loads at columns indicated.
6. **REVISE** Drawing Sheet S1.12 – ROOF FRAMING PLAN - AREA A; Issued for Bid, dated 03/06/2020.
  - **ADDED** reference to section 9/S4.5 along column line 12 between column lines BD and BG in “HIGH ROOF FRAMING PLAN - AREA A” plan.
7. **DELETE** Drawing Sheet S1.16 – ROOF FRAMING PLAN – AREA E; Issued for Bid, dated 03/06/2020; **ADD** Drawing Sheet S1.16 – ROOF FRAMING PLAN – AREA E; ADDENDUM #6, (Revision dated 04/22/2020).
  - **ADDED** new secondary roof steel along fire wall separating Areas C/D and E.
  - **REVISED** framing members indicated.

8. **REVISE** Drawing Sheet S1.17 – ROOF FRAMING PLAN - AREA F; Issued for Bid, dated 03/06/2020.
  - **ADDED** reference to section 9/S4.5 along column line 2 between column lines BD and BG in “HIGH ROOF FRAMING PLAN - AREA F” plan.
  - **ADDED** reference to section 8/S4.5 along column line 4 between column lines BD and BG in “HIGH ROOF FRAMING PLAN - AREA F” plan.
  - **ADDED** reference to section 7/S4.5 along column line BG between column lines 3 and 4 in “HIGH ROOF FRAMING PLAN - AREA F” plan.
9. **REVISE** Drawing Sheet S3.4 – FOUNDATION SECTIONS; ADDENDUM #3, (Revision dated 04/01/2020).
  - **REVISE** detail 1/S3.4 per Sketch ADD6.3 included with this addendum.
10. **REVISE** Drawing Sheet S4.4 – FLOOR FRAMING SECTIONS; ADDENDUM #3, (Revision dated 04/01/2020).
  - **ADD** detail 9/S4.4 per Sketch ADD6.3 included with this addendum.
  - **REVISE** detail 8/S4.4 per Sketch ADD6.4 included with this addendum.
11. **REVISE** Drawing Sheet S4.5 – ROOF FRAMING SECTIONS; Issued for Bid, dated 03/06/2020.
  - **REVISE** detail 7/S4.5 per Sketch ADD6.5 included with this addendum.
  - **ADD** detail 9/S4.5 per Sketch ADD6.4 included with this addendum.
  - **ADD** detail 10/S4.5 per Sketch ADD6.5 included with this addendum.
12. **REVISE** Drawing Sheet S4.6 – ROOF FRAMING SECTIONS; Issued for Bid, dated 03/06/2020.
  - **REVISE** low roof condition in detail 7/S4.6 per Sketch ADD6.3 included with this addendum.
  - **REVISE** WT size to “WT12.5X27.5” in detail 2/S4.6.
13. **DELETE** Drawing Sheet S4.7 – ROOF FRAMING SECTIONS; Issued for Bid, dated 03/06/2020; **ADD** Drawing Sheet S4.7 – ROOF FRAMING SECTIONS; ADDENDUM #6, (Revision dated 04/22/2020).
  - **REVISED** details as indicated.
14. **DELETE** Drawing Sheet S5.1 – JOIST LOAD DIAGRAMS; Issued for Bid, dated 03/06/2020; **ADD** Drawing Sheet S5.1 – JOIST LOAD DIAGRAMS; ADDENDUM #6, (Revision dated 04/22/2020).
  - **DELETED** “Brick Dead Load = 710 PLF” note from “12KSP1 JOIST LOAD DIAGRAM.”
  - **REVISED** “12KSP1 JOIST LOAD DIAGRAM” to be “22KSP3 JOIST LOAD DIAGRAM.”

### 3.5 MECHANICAL

1. **REVISE** Drawing Sheet M1.1 – FIRST FLOOR PLAN – AREA A; Issued for Bid, dated 03/06/2020.
  - **ADD** Radiant electric heat panel to Restroom A104 and Thermostat.
  - **ADD** Drawing Note 8 to drawing notes: RADIANT ELECTRIC HEAT PANEL; 24”x24” PANEL, 375 WATTS, 120/1Ø/60Hz. MODEL CP3751 BERKO.

2. **REVISE** Drawing Sheet M1.5 – FIRST FLOOR PLAN – AREA E; Issued for Bid, dated 03/06/2020.
  - **ADD** Supply register S1-75 CFM/6"Ø ductwork to Restroom E114.
  - **ADD** Supply register S1-75 CFM/6"Ø ductwork to Restroom E115.
3. **REVISE** Drawing Sheet M1.6 – FIRST FLOOR PLAN – AREA F; Issued for Bid, dated 03/06/2020.
  - **ADD** Radiant electric heat panel to Restroom F117 and Thermostat.
  - **ADD** Drawing Note 8 to drawing notes: RADIANT ELECTRIC HEAT PANEL; 24"x24" PANEL, 375 WATTS, 120/1Ø/60Hz. MODEL CP3751 BERKO.
4. **REVISE** Drawing Sheet Mx1.1 – FIRST FLOOR PLAN – ADD/ALT. No. 1; Issued for Bid, dated 03/06/2020.
  - **ADD** transfer grille R1 and 14x8 sound lined transfer duct, drawing note 1, to Classroom E132 and restroom E133.
5. **REVISE** Drawing Sheet M9.1 – MISCELLANEOUS MECH. EQUIP. SCHEDULE; Issued for Bid, dated 03/06/2020.
  - **REVISE** CUH-8 Model Number from "CUHS935052771" to "CUHS935052771".
  - **REVISED** ACCU-1 through ACCU-12 EER/IEER in DOAS – AIR COOLED CONDENSIGN UNIT SCHEDULE per Sketch ADD6.8 issued with this addendum.
  - **REVISE** ACCU-7 and 8 Electrical MAX FUSE from "25" to "30".
6. **REVISE** Drawing Sheet M9.4 – MISCELLANEOUS MECH. EQUIP. SCHEDULE; Issued for Bid, dated 03/06/2020.
  - **DELETE** F-12 and label as "NOT USED" in Area Served in Fan Schedule.
  - **REVISE** Gas Fired Unit Heater-3 and 4 HP from "0.25" to "1/6".
  - **REVISED** COND-1 through COND-10 Max Fuse in Variable Refrigerant Condensing Unit Schedule per Sketch ADD6.9 issued with this addendum.
  - **REVISED** Ductless Split System SS-5 – Storage C106, Indoor Unit per Sketch ADD6.9 issued with this addendum.
  - **REVISE** Condenser SSCU-4, MCA from "9 and 14" to "22.1", Weight from "90" to "140," and Model No. from "SUZ-KA18NA2" to "MXZ-2C30NA2".
  - **REVISE** Ductless Split System SSCU-5, MCA from "9 and 9" to 17.2" and model No. from "SUZ-KA18NA2" to "MXZ-2C20NA2".
  - **REVISE** SSCU-6 and SSCU-7, Condenser model from "SUZ-LA09NA2" to "SUZ-KA09NA2".

### 3.6 ELECTRICAL

1. **REVISE** Drawing Sheet E0.1 – ELECTRICAL LEGEND, ABBREVIATIONS, AND CONVENTIONS; Issued for Bid, dated 03/06/2020.
  - **ADD** "RA" in a square with subscript "R" and description "Remote area of rescue two-way communication system. Wall mounted 3'-6" AFF. Remote Station."
  - **ADD** "RA" in a square with subscript "M" and description "Remote area of rescue two-way communication system. Wall mounted 3'-6" AFF. Master Station."



2. **REVISE** Drawing Sheet E1.1 – FIRST FLOOR PLAN – AREA A – POWER; Issued for Bid, dated 03/06/2020.
  - **ADD** #6 to “Drawing Notes” list with description: “RADIANT HEATER PANELS: 120V, 1ph, 375W. PROVIDE WITH MANUAL MOTOR STARTER WITH PILOT LIGHT.”
  - **ADD** drawing note #6 to ceiling-mounted radiant heaters in A104.
3. **REVISE** Drawing Sheet E1.3 – FIRST FLOOR PLAN – AREA C – POWER; Issued for Bid, dated 03/06/2020.
  - **ADD** #7 to “Drawing Notes” list with description: “RADIANT HEATER PANELS: 120V, 1ph, 375W. PROVIDE WITH MANUAL MOTOR STARTER WITH PILOT LIGHT.”
  - **ADD** drawing note #7 to ceiling-mounted radiant heaters in C110A, C110B, C114A and C114B.
4. **REVISE** Drawing Sheet E1.4 – FIRST FLOOR PLAN – AREA D – POWER; Issued for Bid, dated 03/06/2020.
  - **ADD** #5 to “Drawing Notes” list with description: “CONNECT TO SWITCHES (PROVIDED BY OTHERS). LOCATIONS TO BE VERFIED BY OWNER.”
  - **ADD** drawing note #5 to ceiling-mounted divider curtain in gymnasium.
5. **REVISE** Drawing Sheet E1.5 – FIRST FLOOR PLAN – AREA E – POWER; Issued for Bid, dated 03/06/2020.
  - **ADD** #5 to “Drawing Notes” list with description: “RADIANT HEATER PANELS: 120V, 1ph, 375W. PROVIDE WITH MANUAL MOTOR STARTER WITH PILOT LIGHT.”
  - **ADD** drawing note #5 to ceiling-mounted radiant heaters in E117A.
6. **DELETE** Drawing Sheet E1.6 – FIRST FLOOR PLAN – AREA F – POWER; Issued for Bid, dated 03/06/2020; **ADD** Sheet E1.6 – FIRST FLOOR PLAN – AREA F – POWER; ADDENDUM #6, dated 04/22/2020.
  - **ADDED** #6 to “Drawing Notes” list with description: “RADIANT HEATER PANELS: 120V, 1ph, 375W. PROVIDE WITH MANUAL MOTOR STARTER WITH PILOT LIGHT.”
  - **ADDED** drawing note #6 to ceiling-mounted radiant heaters in F116.
  - **REVISE** receptacle layout in classrooms indicated.
7. **REVISE** Drawing Sheet E1.7 – SECOND FLOOR PLAN – AREA A – POWER; ADDENDUM #3, dated 04/01/2020.
  - **ADD** #3 to “Drawing Notes” list with description: “RADIANT HEATER PANELS: 120V, 1ph, 375W. PROVIDE WITH MANUAL MOTOR STARTER WITH PILOT LIGHT.”
  - **ADD** drawing note #3 to ceiling-mounted radiant heaters in A204B.
8. **DELETE** Drawing Sheet E1.9 – SECOND FLOOR PLAN – AREA F – POWER; ADDENDUM #3, dated 04/01/2020; **ADD** Drawing Sheet E1.9 – SECOND FLOOR PLAN – AREA F – POWER; ADDENDUM #6, dated 04/22/2020.
  - **ADD** #3 to “Drawing Notes” list with description: “RADIANT HEATER PANELS: 120V, 1ph, 375W. PROVIDE WITH MANUAL MOTOR STARTER WITH PILOT LIGHT.”
  - **ADD** drawing note #3 to ceiling-mounted radiant heaters in F218A.
  - **REVISE** receptacle layout in Classrooms F207 and F208 as indicated.
9. **REVISE** Drawing Sheet E4.1 – KITCHEN PLAN; Issued for Bid, dated 03/06/2020.

- **ADD #4** to “Drawing Notes” list with description: “RADIANT HEATER PANELS: 120V, 1ph, 375W. PROVIDE WITH MANUAL MOTOR STARTER WITH PILOT LIGHT.”
  - **ADD** drawing note #4 to ceiling-mounted radiant heaters in C103 and its associated restroom.
10. **REVISE** Drawing Sheet E5.1 – SCHEMATIC POWER RISER DIAGRAM; Issued for Bid, dated 03/06/2020.
    - **ADD** Panelboard schedules KP and KR included on Sketches ADD6.10 and ADD6.11 included with this addendum.
  11. **REVISE** Drawing Sheet E6.3 – ELECTRICAL DETAILS; Issued for Bid, dated 03/06/2020.
    - **CLARIFICATION:** A pre-manufactured roof support shall be utilized for details 1, 4, 5; BOD shall be Thybar TEMS-3, sized as required or approved equal.
  12. **REVISE** Drawing Sheet E7.1 – PANELBOARD SCHEDULES; Issued for Bid, dated 03/06/2020.
    - **ADD** 12 spare circuit breakers to E1L1C, 1P-20A.
  13. **REVISE** Drawing Sheet E7.2 – PANELBOARD SCHEDULES; Issued for Bid, dated 03/06/2020.
    - **ADD** 12 spare circuit breakers to E2L1C and E1LRF, 1P-20A.
  14. **REVISE** Drawing Sheet E7.3 – PANELBOARD SCHEDULES; Issued for Bid, dated 03/06/2020.
    - **ADD** 12 spare circuit breakers to E2RRF, E2RRA, L1C, E2LRF, E2LRA and E2R1C, 1P-20A.
  15. **REVISE** Drawing Sheet E7.4 – PANELBOARD SCHEDULES; Issued for Bid, dated 03/06/2020.
    - **ADD** Circuit R1C-43 to serve radiant heat panels, via 1P-15A circuit breaker and connect via (2) #12 + #12GW – 3/4”C.
    - **REVISE** Circuit breaker MRF-31, from 25A to 30A.
    - **REVISE** Circuit breaker R1C-24, from 20A to 30A and wire size to #10s.
    - **REVISE** Circuit breaker R1C-28, from 20A to 25A and wire size to #10s.
    - **ADD** 12 spare circuit breakers to LRF, LRA, and R1C, 1P-20A.
  16. **REVISE** Drawing Sheet E7.5 – PANELBOARD SCHEDULES; Issued for Bid, dated 03/06/2020.
    - **ADD** Circuit RRE-37 to serve radiant heat panel, via 1P-15A circuit breaker and connect via (2) #12 + #12GW – 3/4”C.
    - **ADD** Circuit RRA-70, 71 to serve radiant heat panel, via 1P-15A circuit breaker and connect via (2) #12 + #12GW – 3/4”C.
    - **ADD** Circuit RRF-59 to serve radiant heat panel, via 1P-15A circuit breaker and connect via (2) #12 + #12GW – 3/4”C.
    - **REVISE** Circuits RRA-60,62,66,68 – to GFCI type circuit breakers.
    - **ADD** 12 spare circuit breakers to LRE, RRE, RRF, and RRA, 1P-20A.

## **PART 4 ATTACHMENTS**

#### 4.1 SPECIFICATIONS

Section 01 5480 – USE, HANDLING, STORAGE, TRANSPORTING, ACCUMULATION, AND DISPOSAL OF CONTROLLED MATERIAL

Section 02 0850 - ASBESTOS ABATEMENT SCOPE OF WORK

Section 02 0860 - MERCURY-CONTAINING FLUORESCENT LAMP AND TUBE REMOVAL

Section 02 0870 - PCB LIGHT BALLAST REMOVAL

Section 02 0900 - LEAD-BASED PAINT REMOVAL AND DISPOSAL

Section 02 0910 - LEAD-CONTAINING PAINT REMOVAL

Section 10 5113 - METAL LOCKERS

Section 11 3013 - RESIDENTIAL APPLIANCES

Section 11 6623 - GYMNASIUM EQUIPMENT

Section 32 3223 - PRECAST MODULAR BLOCK RETAINING WALLS

#### 4.2 SKETCHES

ADD6.1 – MISC. DETAILS

ADD6.2 – MISC. DETAILS

ADD6.3 – STRUCTURAL DETAILS

ADD6.4 – STRUCTURAL DETAILS

ADD6.5 – STRUCTURAL DETAILS

ADD6.6 – CANOPY FRAMING DETAILS

ADD6.7 – PENTHOUSE STAIR PLAN

ADD6.8 – DOAS SCHEDULE

ADD6.9 – MECHANICAL SCHEDULES

ADD6.10 – ELECTRICAL SCHEDULES

ADD6.11 – ELECTRICAL SCHEDULES

#### 4.3 FULL SIZE DRAWINGS

C-1D – PHASE 3 DEMOLITION PLAN

C-3K.1 – SEWER PROFILES

C-4T – STORMDRAIN PROFILES

CS.3 – ABBREVIATIONS, KEYNOTES, & SYMBOLS

A1.9 – SECOND FLOOR PLAN – AREA C

A1.10 – SECOND FLOOR PLAN – AREA F

A1.12 – ROOF PLAN – AREA B

A1.13 – ROOF PLAN – AREA C

A1.14 – ROOF PLAN – AREA D

A1.16 – ROOF PLAN – AREA F

A2.2 – REFLECTED CEILING PLAN - FIRST FLOOR - AREA B

A2.3 – REFLECTED CEILING PLAN - FIRST FLOOR - AREA C  
A2.4 – REFLECTED CEILING PLAN - FIRST FLOOR - AREA D  
A2.5 – REFLECTED CEILING PLAN - FIRST FLOOR - AREA E  
A2.6 – REFLECTED CEILING PLAN - FIRST FLOOR - AREA F  
A2.8 – REFLECTED CEILING PLAN - SECOND FLOOR - AREA B  
A2.10 – REFLECTED CEILING PLAN - SECOND FLOOR - AREA F  
A2.11 – CEILING DETAILS  
A3.1 – EXTERIOR ELEVATIONS  
A3.2 – EXTERIOR ELEVATIONS  
A3.4 – EXTERIOR ELEVATIONS  
A3.6 – EXTERIOR ELEVATIONS  
A4.2 – BUILDING SECTIONS  
A6.2 – PLAN DETAILS  
A6.11 – SECTION DETAILS  
A6.13 – SECTION DETAILS  
A6.12 – SECTION DETAILS  
A6.19 – EXTERIOR EXPANSION JOINT DETAILS  
A7.0 – ACCESSORY SCHEDULE  
A8.1 – DOOR SCHEDULE  
A8.2 – OPENING TYPES & DETAILS  
S1.2 – FOUNDATION PLAN – AREA B  
S1.5 – FOUNDATION PLAN – AREA E  
S1.9 – FLOOR & LOW ROOF FRAMING PLAN – AREA C  
S1.16 – ROOF FRAMING PLAN – AREA E  
S1.17 – ROOF FRAMING PLAN – AREA F  
S4.7 – ROOF FRAMING SECTIONS  
S5.1 – JOIST LOAD DIAGRAMS  
E1.6 – FIRST FLOOR PLAN – AREA F – POWER  
E1.9 – SECOND FLOOR PLAN – AREA F – POWER

All other specifications and terms remain as stated in the original documents. This addendum is hereby made a part of the Contract Documents, on which the contract is based and is intended to modify, explain, correct and/or add to the original Contract Documents.

**END OF ADDENDUM**

## SECTION 01548

### USE, HANDLING, STORAGE, TRANSPORTING, ACCUMULATION, AND DISPOSAL OF CONTROLLED MATERIAL

#### PART 1 – GENERAL

##### 1.01 RELATED DOCUMENTS

- A. General provisions of the Contract, including bonding, insurance, and other specification sections, apply to this section.
- B. The following reports provide summaries of hazardous materials to be removed from each school.
  - “Hazmat Survey – FCPS Bid #16-MISC-3, Rock Creek School, Frederick, MD” prepared by SaLUT, Inc. and Dated December 4, 2017.
  - “Demolition Hazardous Materials Survey, Waverley Elementary School, Frederick, Maryland” prepared by AERO EH&S, Inc. and dated January 18, 2019.

##### 1.02 SUMMARY

- A. This section covers the demolition, use, handling, storage, transporting, accumulation, and disposal of hazardous or recyclable materials/substances/chemicals that may be encountered or that may be used by the Contractor during the course of the work. The Contractor is made aware by this specification that hazardous or recyclable materials/substances/chemicals are regulated by a multitude of statutes and regulations and require special care.
- B. All hazardous and recyclable materials and wastes generated or removed during this construction contract at the site will be disposed of by the Contractor.
- C. Related Sections: This specification section is related to any and all specification sections with explicit or implicit reference to project management and coordination. Specific submittal requirements of these related specification sections are not included in this section. Related sections include, but are not limited to, the following specification sections:
  - 1. Specification Section 02085 Asbestos Abatement
  - 2. Specification Section 02086 Mercury-Containing Tube and Lamp Removal

3. Specification Section 02087 PCB Light Ballast Removal
4. Specification Section 02090 Lead-Based Paint Removal and Disposal
5. Specification Section 02091 Lead-Containing Paint Removal

### 1.03 REFERENCES

A. In addition to these specifications, the following publications designate and define hazardous materials and conditions and establish procedures for handling these materials and conditions. Omission of any publication in this section does not remove any obligation or legal requirement on the part of the Contractor to comply with all legal requirements for the location of the work.

1. Code of Federal Regulations (CFR):
  - a. 29 CFR Part 1910: Occupational Safety and Health Administration (OSHA) General Industry and Health Standards.
  - b. 29 CFR Part 1910.134: Respiratory Protection
  - c. 29 CFR Part 1910.145: Specifications for Accident Prevention Signs and Tags
  - d. 29 CFR Part 1910.20 Sub-part C: General Safety and Health Provisions
  - e. 29 CFR Part 1926: Safety and Health Regulations for Construction
  - f. 29 CFR Part 1926.62: Lead
  - g. 29 CFR Part 1926.65: Hazardous Waste Operations and Emergency Response
  - h. 29 CFR 1926 Subpart Z: Toxic and Hazardous Substances
  - i. 40 CFR Part 61: National Emissions Standards for Hazardous Air Pollutants
  - j. 40 CFR Parts 9 and 82: Protection of Stratospheric Zone (CFCs), Clear Air Act Amendments of 1990
  - k. 40 CFR Parts 122 and 125: National Pollutant Discharge Elimination System Clean Water Act
  - l. 40 CFR Parts 260 - 272: Solid and Hazardous Wastes, Resource Conservation and Recovery Act
  - m. 40 CFR Part 165: Disposal and Storage of Pesticides and Pesticide Containers
  - n. 40 CFR Subchapter J Parts 300 - 373: Superfund Emergency Planning, and Community Right-to-Know Programs

- o. 40 CFR Parts 700 - 799: Toxic Substances Control Act (TSCA)
- p. 49 CFR Parts 171 - 179: Department of Transportation (DOT)
- q. Federal Standard 313A: Material Safety Data Sheets, Preparation and Submission of
- 2. American National Standards Institute (ANSI)
  - a. Z288.2: Standard for Respiratory Protection
- 3. American Society for Testing and Materials (ASTM)
  - a. E849-82: Safety and Health Requirements Relating to Occupational Exposure to Asbestos
- 4. State and Local Regulations: The Contractor shall comply with all current:
  - a. State of Maryland, Frederick County, and City of Frederick Regulations.
  - b. Title 26, Code of Maryland Regulation (COMAR)

#### 1.04 DEFINITIONS

- A. "Controlled Material" is defined as any material that poses a threat to human health or to the environment; that can be recycled or reused; for which disposal in municipal landfills is regulated or restricted; for which unregulated introduction into groundwater, land, or the atmosphere is irresponsible; and that should be designated as "hazardous waste."
- 1. It is imperative that the use, handling, storage, transporting, and disposal of hazardous and recyclable materials and solid waste in these facilities and on the property be disciplined and consistent, both to ensure the safety of Contractor personnel and visitors and to avoid incurring liabilities or penalties as a consequence of reckless or improper disposal or recycling of waste generated in, deposited on, brought to, or transported from the project site.
- 2. A number of statutes and regulations define the term "hazardous" in a variety of ways depending on the nature, condition, and intended use or disposal of the particular material, substance, and/or chemical. To simplify the manner in which these materials are addressed, the term "hazardous material" is used to identify all materials, substances, and chemicals that exhibit the properties defined by this specification:
  - a. Any material, substance, and chemical that because of its quantity, concentration, or physical, chemical or infectious characteristics is toxic, lethal, corrosive, flammable or combustible, reactive, an irritant, a strong sensitizer, or generates pressure by

decomposition, heat, or other means and is injurious to human beings, animal life, and/or the environment shall be considered "hazardous."

- b. Exhaustive but not inclusive lists of these hazardous materials are detailed in the following regulations: RCRA 40 CFR 261; CERCLA 40 CFR 302; SARA 40 CFR 355, 370 & 372; FIFRA 40 CFR 152; TSCA 40 CFR 700-799; COMAR Title 26.13.02.15.19.
- B. A "recyclable material" is defined as any material that must be recycled or reused under Federal, state, or local regulations, or can be recycled and reused in an economically feasible manner.
- C. A "Mercury Item" is an object that contains mercury as a result of the manufacturing process. Examples of mercury items: manometers, thermometers, pumps, switches, relays, thermostats, and fluorescent tubes. Mercury spills, materials contaminated from spills, and other materials that have not been manufactured to a specific shape for purposes of this section are not mercury items.

#### 1.05 CONTROLLED MATERIAL STANDARDS AND CONTRACTUAL RESPONSIBILITIES

- A. Hazardous materials defined by Paragraph 1.04 may not be dumped into storm drains, sewage lines, or dumpsters, nor are they to be introduced into the environment in an uncontrolled manner.
- B. Regulatory Compliance: The Contractor shall comply with all Federal, state, and local regulations and the conditions of the facility operating permits and licenses applicable to activities and services performed under the contract. A partial but not an inclusive list of such laws and regulations are identified in Paragraph 1.03 of this specification.
- C. All contractors will be informed of hazardous materials and potential hazards present in the areas in which the Contractor's employees will be working.
- D. Upon request by the Owner or Owner's Representative, the Contractor shall provide documentation that personnel are properly trained in generating, handling, and storing hazardous wastes.
- E. The Contractor shall dispose of hazardous materials belonging to him or which are generated as a result of this contract at no additional expense to the Owner. Waste shall be disposed of on a daily basis unless waste is placed in an approved temporary storage location.

F. Contractor Liability and Responsibility

1. The Contractor shall assume full responsibility and liability for compliance with all applicable regulations affecting the health and safety of Contractor personnel and others during work operations.
2. Quantities of materials to be removed, which are provided with this specification and attached documents, are approximate estimates by the Project Designer. It shall be the responsibility of the Contractor to verify understanding and agreement with quantities provided prior to submitting a bid. If the Contractor bids for this work without disputing specified quantities of described materials, this shall indicate acceptance of a Scope of Work, which includes removal of all described materials, regardless of listed quantity. In the event quantities are not provided, the Contractor is responsible for removal of all described materials.
3. In the performance of the contract, the Contractor shall provide for the protection of the health and safety of others present on site.
4. The Contractor shall assume full liability and responsibility for all hazardous materials brought to the contract site. The use, handling, storage, transporting, and disposal of such materials shall comply with all regulatory conditions, the manufacturer's recommendations, and the Material Safety Data Sheet (MSDS) for that substance. Copies of MSDSs will be maintained on site. Quantities of materials stored and used at the work site shall be limited to the minimum amount required to accomplish the prescribed task or activity.
5. The Contractor will be responsible for site storage, shipment, and disposal of hazardous wastes and substances. The Contractor will be responsible for proper shipment and disposal at Contractor-proposed, Owner-approved disposal facilities.

G. Provisions for and Conditions of Temporary Storage of Hazardous Materials on Owner Property: Hazardous waste for which the Contractor is responsible for transportation and disposal may be accumulated at the site for up to 30 days, except for extremely hazardous waste materials, provided that:

1. The containers holding the hazardous waste are in good condition, are labeled with all contents, and are not leaking.
2. The containers are made of or lined with materials that will not react with and are otherwise compatible with the hazardous waste to be stored, so that the ability of the container to contain the waste is not impaired.

3. The containers are closed during storage, except when it is necessary to add or remove waste, and the containers are not opened, handled, or stored in a manner which may rupture the container or cause it to leak.
4. The containers are inspected at least weekly to check for leaks and for deterioration caused by corrosion or other factors.
5. The containers are securely stored away from high traffic areas in a locked area to prevent deliberate or accidental release of hazardous materials.
6. The location selected for storage of the waste containers provides secondary containment of accidental discharge from the containers.
7. The containers are stored on the job site at a location pre-approved by the Owner or Owner's Representative.
8. If a container is leaking, the waste must be immediately transferred to a sound container by the Contractor and treated as a hazardous material spill.

H. Disposal Method

1. The Contractor shall maximize the use of treatment facilities that employ valid, best available technologies to permanently destroy or render the hazardous material non-hazardous.
  2. Land disposal of hazardous waste shall be minimized. Landfills shall only be employed by the Contractor when no other satisfactory method of treatment for a particular waste is available.
  3. Recycling and reuse of materials are encouraged to the extent economically feasible.
- I. Hazardous Material Spill: Hazardous material spills on site shall be reported immediately to the local Fire Department (dial 911). The Contractor shall take immediate measures to contain the spill, prevent its spread, and ensure proper cleanup. If there is a threat to health or safety, or danger of further contamination, the Owner may elect to take charge of the cleanup, perform the required cleanup, and charge the Contractor for expenses incurred. Hazardous material spill response is explained in Paragraph 1.08.
- J. Hazardous Materials Log: The Contractor shall maintain a hazardous materials log on the job site that identifies the type and amounts of materials generated on the site, type and amounts of materials brought to the site, and the type and amounts of materials transported from the site. Documentation shall be in chronological order to identify the sequence of

activities.

- K. The Contractor shall maintain a Material Safety Data Sheet (MSDS) binder on the construction site that shall include all hazardous materials used on the construction site.
- L. Alternative Materials: Alternative products and materials that are less hazardous and will produce comparable results must be used.

#### 1.06 DELEGATION OF AUTHORITY FOR OWNER APPROVAL

- A. For work related to Controlled Material, including use, handling, storage, transporting, accumulation, and disposal, the Owner has designated AERO EH&S, Inc., hereinafter referred to as the Owner's Representative, to act in his behalf in hazardous waste issues only.

#### 1.07 SUBMITTALS

- A. Hazardous Materials Waste Management Plan: Any hazardous materials (i.e., solvents, floor mastic strippers, adhesives, etc.) brought onto the job site by the Contractor or generated as a result of project work shall require the Contractor to prepare a Hazardous Materials Waste Management Plan. This plan shall be prepared and submitted to the Owner's Representative for review. No work shall begin until the plan has been approved by the Owner's Representative. The Hazardous Materials Waste Management Plan shall:
  - 1. Include a list of all hazardous materials to be used on the job site, including how the materials will be used, handled, stored, packaged, manifested, transported, and disposed.
  - 2. Ensure that use of any chemical agents, such as floor mastic strippers, sealants, adhesives, or other agents containing strong solvents, is approved by the Owner.
  - 3. Include MSDSs for all hazardous materials to be used or generated as a result of the project.
  - 4. Delineate the process, procedures, and methods to be used by the Contractor to contain or evacuate fumes, vapors, dusts, aerosols, etc. that may be released or generated so as to protect personnel when hazardous materials are used or generated.
  - 5. Delineate the safety procedures, personnel protection measures, and precautions to be taken covering all operations involving hazardous materials, including handling, use, loading, transporting, and first aid.

6. Include a hazardous materials spill control plan for materials in transit.
7. Include the identification of the State/EPA permit number and Certification of Insurance of any proposed transporter.
8. Include the identification, description, location, and the State/EPA permit number of any proposed disposal site(s).
9. Include a list of all contract employees assigned to the project along with their titles, duties, education, training, and experience.
10. Include a scheme for minimization of the waste volume to the maximum extent possible either through recycling, alternate methods or processes, or conservation of waste materials.

**B. Hazardous Waste Manifests**

1. The Contractor is responsible for all Hazardous Waste Manifest documentation to include properly filling out the required documentation, maintaining the records, tracking the manifest, and distribution. The Hazardous Waste Manifest will be approved and signed by the Owner.
2. The Contractor shall provide the Hazardous Waste Manifest(s) and any other required regulatory shipment documents to the Owner's Representative for review and approval at least one day preceding a planned shipment of hazardous materials or waste. When the manifest is approved and signed by the Owner's Representative, the Contractor shall leave a copy with the Owner's Representative and ensure that appropriate copies accompany the shipment.
3. While the Contractor may arrange off-site transportation activities at his convenience, the Owner will be available for signing manifests only during normal business hours.
4. The receiving or disposal facility official shall sign the manifest certifying receipt of the shipment and forward a copy from that facility to the Owner's Representative within seven (7) days after receipt.

**C. Approval of Transporter**

1. All transporters the Contractor proposes to use must be approved by the Owner's Representative in writing prior to the generation, storage, or removal of hazardous waste materials on the job site. The Contractor shall furnish the Owner's Representative with a compliance summary of the proposed transporter which minimally contains the following:
  - a. Current copies of the transporter's operating permits and licenses.

- b. Copies of environmental impairment insurance.
  - 2. Should there be a need for an alternate transporter in the case of an accident or release in transit, the alternate transporter must be approved by the Owner's Representative.
  - 3. If remedial action is required to contain and clean up a spill, the Contractor shall work under the direction of the local regulatory authorities responding to the incident. The Contractor shall utilize the most efficient resources available to expedite the control and clean up. If such an event should occur in transit, the Contractor shall immediately notify the Owner's Representative.
- D. Approval of Treatment, Storage, and Disposal Facilities (TSDF)
- 1. All transfer facilities or treatment, storage, and disposal facilities the Contractor proposes to use must be approved in writing by the Owner's Representative prior to removal, generation, or storage of hazardous materials on the job site.
  - 2. The Owner reserves the right to prohibit the Contractor from employing the services of a subcontractor that does not possess the ability to satisfactorily perform in conformance with the provisions of the contract. The use of a subcontractor(s) does not relieve the Contractor of any requirements or responsibilities set forth in the contract. The Contractor is responsible for ensuring that any subcontractor(s) perform in accordance with the terms and conditions of the contract.
  - 3. If, during the period of the contract, the Contractor requests the approval of additional TSDFs, the Owner must be allowed reasonable time to evaluate such requests.
- E. PCB Plan of Action: Provide a PCB Plan of Action in the Hazardous Materials Waste Management Plan for approval by the Owner's Representative addressing all requirements set forth in Paragraph 3.03.D of this section, including the location of EPA approved recycling and incineration sites, qualifications of transporter, methods of transport, and a description of the methods to be employed to prevent release to the environment. The Contractor shall explain the method for documenting proper PCB disposal (incineration) to the Owner and include the written procedures in the Hazardous Materials Waste Management Plan.
- F. Certification of Final Disposition
- 1. It is the Contractor's responsibility to obtain all necessary documentation to prove the final treatment/disposal of all wastes has been accomplished. This documentation shall be included in the Certificate of Final Disposition and submitted with or prior to the invoice

for payment. A Certificate of Final Disposition shall itemize each container received at the treatment/disposal facility, shall document the date and method of treatment or disposal, and shall be forwarded to the Owner's Representative within four (4) months of the date the material was received at the disposal facility.

2. If the material is disposed of in a secured chemical landfill facility, then the Certificate of Final Disposition shall also indicate the location within the landfill where the waste container was buried through the use of cell numbers, coordinates, or other appropriate identifiers.

#### 1.08 EMERGENCY RESPONSE AND REMEDIATION OF SPILLS AND RELEASES

- A. Notify Owner: The Contractor shall be responsible, in the event of a spill of hazardous material resulting from the execution of this contract, for immediately notifying the Owner's Representative. The following information will be supplied to the Owner's Representative in writing as part of the notification process:

1. Type of material.
2. Quantity of material spilled.
3. Date and time spill occurred.
4. Environmental media released (i.e., air, water, soil, etc.)
5. Location, type, and extent of spill.
6. Cause of spill.
7. Methods used or proposed to control or clean up the spill.

- B. Spill Kits: The Contractor is responsible for providing spill kits at the work site for all hazardous materials brought into the work site by the Contractor.

- C. Reporting of Spills, Leaks, and Releases: The Contractor is not authorized to issue press releases concerning incidents at the project site or to report releases on or from the project site to regulatory authorities. Such news releases and reporting shall be performed only as directed by the Owner.

#### 1.09 PERSONNEL QUALIFICATIONS AND REQUIREMENTS

- A. The Contractor must ensure that every person is trained pursuant to the directions in 49 CFR 172.202 and HM-126F if they are responsible for any of the following:

1. Prepares hazardous materials for use, storage, or disposal.
  2. Handles, loads, unloads, or moves hazardous materials.
  3. Fills out forms for the transportation of hazardous materials.
  4. Is in any way responsible or accountable for any hazardous materials in Owner facilities.
- B. Qualified personnel are essential and shall be provided by the Contractor for the performance of this contract to ensure that public health, safety, and protection of the environment are ensured during the use, handling, packaging, transporting, treatment, and/or disposal of hazardous materials and that property of the Owner is protected.
- C. Contractor personnel must possess all personal licenses, permits, and certifications required to perform their duties. For example, truck drivers hauling hazardous wastes in Maryland must hold current CHS Driver Certifications.

#### 1.10 ENVIRONMENTAL SAFETY OFFICER

- A. The Contractor shall retain the full-time services of a Safety Officer possessing previous experience in hazardous materials work. The Safety Officer shall interpret the published rules and regulations governing hazardous materials and will provide direction in the implementation of said regulations and safety requirements. This work shall include but not be limited to:
1. Monitoring the Contractor's work with hazardous material for compliance with published rules and regulations by EPA, OSHA, and the State of Maryland including use, handling, storage, packaging, transporting, and disposal.
  2. Providing the Owner's Representative with all required documentation pertaining to hazardous materials use, handling, removal, clean up, transport, and disposal.

## PART 2 – PRODUCTS

### 2.01 EQUIPMENT

- A. Equipment, including disposable protective clothing, used in the execution of this contract and/or provided to visitors to the site shall comply with applicable Federal, State, and local regulations.

### 2.02 TOOLS

- A. Tools used in the execution of this contract and/or provided to visitors to the site shall comply with applicable Federal, State, and local regulations. Tools shall be used in strict compliance with manufacturers' written instructions for their intended use.

### 2.03 MATERIALS

- A. Materials used in the execution of this contract and/or provided to visitors to the site shall comply with applicable Federal, State, and local regulations. Materials shall be used in strict compliance with manufacturers' written instructions for their intended use.
- B. Product Material Safety Data Sheets (MSDS): MSDSs will be submitted as part of the Contractor's Hazardous Materials Waste Management Plan and maintained on site along with all product data from the manufacturer for all applicable substances to be used.
- C. Container Requirements: All transportation containers purchased and used by the Contractor shall meet DOT Title 49 CFR requirements and regulations for shipment of hazardous materials. Only new containers, free from damage which could compromise the integrity of the container, shall be used. Any damaged containers shall be rejected and replaced by the Contractor at no cost to the Owner. The Contractor shall provide all documents and container labels as required.
- D. All Product Data and corresponding manufacturers' information, shop drawings, and manuals must be submitted and approved prior to initiation of work. All product data must be maintained on site at all times during work.

## PART 3 – EXECUTION

### 3.01 PREPARATION

- A. Isolate the Hazardous Material area for the duration of the work to prevent unauthorized access by designating the area off limits to all but authorized personnel. Maintain a log of all persons visiting the Hazardous Material work site.
- B. Post warning signs and labels as required by this contract, 29 CFR 1910, 40 CFR 761, and as directed by the Owner's Representative.

### 3.02 WORK PROCEDURES

- A. General Procedures: Perform all Hazardous Materials related work in strict compliance with the general safety and health provisions of the referenced requirements. If a conflict arises in the regulations, the more stringent application/requirements for overall safety shall apply until a determination is made otherwise by the Owner's Representative.
- B. Coordination of Work of all Trades: Coordinate the work of all trades to ensure their work is performed in accordance with the applicable regulations and the hazardous materials control area remains separated from the remaining work areas.
- C. All contractors will be informed of hazardous materials and potential hazards present in the areas in which the Contractor's employees will be working.

### 3.03 REQUIREMENTS FOR CONTROLLED MATERIALS

- A. Lead
  - 1. ITEMS USUALLY CONTAINING LEAD: paint, soft solder, radiation shielding, pipe, cup sinks, terne roofing.
  - 2. OPERATIONS INVOLVED: chipping, sanding, grinding, soldering, welding, flame torch cutting, abrasive blasting, and spray painting.
  - 3. DEMOLITION PROCEDURES: Demolition procedures shall meet OSHA Guidelines "Working with Lead in the Construction Industry," OSHA Publication 3126, latest edition. This standard lists hazard-reducing techniques for lead demolition such as using vacuum dust collection systems to capture lead dust and fumes at the point of

generation. Paint removal shall not employ an open flame, or dry sanding or grinding. Also, the use and selection of respiratory protection and other protective equipment shall be as specified.

4. RECYCLING: Large quantities of lead such as lead sheeting, lead sinks, and lead blocks must be recycled.
5. DISPOSAL: Disposal of lead shall be in accordance with Paragraph 1.05.

B. Lead Paint

1. SPECIAL PERMITS REQUIRED: The State of Maryland requires that lead-based paint abatement and lead-based paint removal be done only by those with an MDE license. Verification of a current license will be submitted to the Owner's Representative.
2. Lead-based paint and lead-containing paint are present throughout the building.
3. Owner-conducted TCLP testing of composite samples of construction debris, excluding other hazardous materials and metallic lead objects, resulted in analytical results less than 5 ppm lead (see attached AERO EH&S, Inc. report).
4. Removal of lead-based paint shall conform to Specification Section 02090.
5. Removal of lead-containing paint shall conform to Specification Section 02091.

C. Mercury Items

1. REMOVAL: Segregate all mercury items and protect sealed mercury sources from damage. Mercury light removal shall also conform to Specification Section 02086.
2. STORAGE: Mercury items shall be stored in appropriate containers that are clearly labeled to identify the contents. Appropriate containers are those that will not deteriorate or react with mercury or allow mercury to leak into the environment during normal use handling, and disposal procedures. Regulations for containing and labeling mercury items can be found in 49 CR 172.101.
3. DISPOSAL: Disposal of mercury shall be in accordance with Paragraph 1.05.

D. Batteries: Batteries are not to be discarded in waste.

1. USES OF BATTERIES: Emergency lighting, uninterruptible power supplies (UPS), emergency power generation.
  2. DISPOSAL: All batteries, regardless of size or material, are to be properly disposed of or recycled by the Contractor in accordance with Paragraph 1.05.
- E. Items with Liquid Dielectric Suspected of Containing PCBs (Polychlorinated Biphenyls)
1. TYPES OF ITEMS: Fluorescent light fixture ballasts, oil circuit breakers, capacitors, liquid transformers, electrical ballasts. Items manufactured after 1978 should carry a "NO PCBs" label. Items not clearly labeled, or without labels, or having unknown dielectric shall be considered to contain PCBs under this specification and shall be treated, handled, and disposed of as hazardous PCB waste.
  2. REMOVAL: The following is a basic outline of the minimum steps that shall be taken during the removal of PCB-containing ballasts from buildings. The plan of action shall be submitted by the Contractor for approval by the Owner, shall include the procedures he intends to follow, and shall address these points:
    - a. A minimum of two layers of 6-mil plastic shall be placed on the floor beneath the disposal drums, the actual work area, and beneath stored disposal drums.
    - b. Pour a minimum three (3) inch layer of oil absorbent in a DOT 17-H drum labeled as containing PCB.
    - c. Remove the light ballast from the light fixture. Wires exiting from the ballast shall be cut to less than three (3) inches long. Place the ballast in the drum. If the ballast is clearly labeled as "Non-PCB" or "No PCB", then the ballast can remain with the fixture and the fixture can be removed and disposed as construction debris.
    - d. If an unmarked ballast shows any sign of leaking, PCB-resistant gloves shall be worn when handling the fixture. If the PCB status cannot be clearly determined from the label, the ballast shall be removed from the fixture and treated as hazardous waste.
    - e. Dispose of any light fixture which held an unlabeled leaking ballast as PCB-contaminated material.
    - f. Alternately layer the ballasts and 2-inch layers of absorbent until the drum is full, carefully checking to ensure that the last layer in the drum will be absorbent.
    - g. Place all used disposable protective clothing and plastic in the drum.

- h. Label the drum with a DOT-OREM label with the following minimum information:
    - i. Date materials were placed in the drum.
    - ii. Materials in the drum (ex.: 75 two-tube light ballasts).
    - iii. Name, address, and phone number of the manufacturer of the generator or owner of the light ballasts.
    - iv. Container identification number (ex.: DC0093ZZ-001BAL)
    - v. The weight of each container is to be recorded (in kilograms) and entered on the manifest.
  - i. Make arrangements, i.e., obtain EPA Generator Identification Number, make EPA notifications, fill out hazardous waste manifest, and incinerate or recycle the material in the drum(s) as PCB-contaminated solid waste.
  - j. Transport the drum(s) and any other PCB materials to an EPA approved incinerator or ballast recycling facility.
  - k. The Contractor may transport the drum(s) and other PCB materials to an EPA approved ballast recycling facility which dismantles the ballast, segregates, and packages the PCB components of a ballast for incineration, and then reclaims non-contaminated materials remaining after recycling.
3. STORAGE: Short term storage shall be in accordance with Paragraph 1.05 herein.
4. DISPOSAL: Immediately arrange for disposal of these items. Collect and dispose of all other PCB-contaminated waste, rags, scrap, debris, bags, containers, equipment, and PCB-contaminated clothing in properly labeled PCB disposal drums. Waste PCB-containing material shall be transported to an incineration site or ballast recycling facility. Incinerate all PCB-contaminated materials remaining after recycling. The Contractor shall provide the Owner's Representative with a copy of all manifests and continuation sheets resulting from the incineration of the PCB-containing waste. In some instances, a temporary holding area can be established upon approval by the Owner's Representative for properly packaged PCB waste.

F. Oils - Confirmed Non-PCB-Containing

1. ITEMS CONTAINING OILS: Internal combustion engines, bearings, refrigeration and heating units, all industrial machinery. Waste oil may also be in oily rags used for maintenance and possibly in soil contaminated by leaks or spills.

2. RECYCLING: The Contractor shall make every effort to recycle the waste oil. If there is an economically feasible method to recycle the waste oil, the Contractor shall do so.
  3. STORAGE: The Contractor shall not mix waste oils with general waste. Waste oils shall be stored in appropriate containers that are clearly labeled to identify contents. Appropriate containers are those that will not deteriorate or react with the oil or allow the oil to leak into the environment during normal use, handling, and disposal procedures. Regulations for containing and labeling petroleum oil waste can be found in 49 CFR 172.101.
  4. DISPOSAL: All material is to be properly disposed of or recycled by the Contractor in accordance with Paragraph 1.05 herein.
- G. Solvents. The Contractor shall use non-toxic and non-flammable solvents whenever these alternative solvents are feasible.
1. KINDS OF SOLVENTS: Paint solvents, gasoline, and other toxic and ignitable solvents.
  2. STORAGE: The Contractor shall not mix solvents with general waste. Solvents shall be stored in NFPA-approved flammable liquid containers that are clearly labeled to identify contents. Appropriate containers are those that will not deteriorate or react with the solvents or allow the solvents to leak into the environment during normal use, handling, and disposal procedures. Regulations for containing and labeling solvents can be found in 49 CFR 172.101.
  3. DISPOSAL: All materials are to be properly disposed of by the Contractor in accordance with Paragraph 1.05.
- H. Chlorofluorocarbons (CFCs)
1. USES OF CHLOROFLUOROCARBONS: Refrigerants, propellants in some aerosol cans.
  2. FEDERAL REGULATIONS FOR CFCs: As of July 1, 1992, the Clean Air Act makes it unlawful to vent CFCs to the atmosphere. During the repair, servicing, or replacement of items such as cold rooms and chillers, CFCs shall be captured before they would otherwise be released to the atmosphere. When refrigerant systems are to be purged of air, venting of CFCs must be kept to a minimum.
  3. STORAGE: The Contractor shall store used refrigerant in containers meeting DOT regulations for refill services. Drums and other storage containers shall be checked for leaks prior to use. When known, these containers must be labeled with the specific CFC they contain.

4. DISPOSAL OF AEROSOL CANS:

- a. Aerosol cans that are empty in accordance with 40 CFR 261.7 provisions may be disposed of as conventional waste.
- b. Aerosol cans that are not empty in accordance with 40 CFR 261.7 shall be considered hazardous material and shall be disposed of in conformance with hazardous material regulations.
- c. Aerosol cans having an unknown propellant shall be considered to contain CFCs under this specification and shall be treated as such.
- d. Disposal shall be in accordance with Paragraph 1.05
- e. CFC CAPTURE: CFCs will be captured for reuse or recycling.

I. Gas Cylinders

1. KINDS OF GAS CYLINDERS: All compressed gases.
2. INSPECTION: Gas cylinders shall be visually checked for damage and shall be handled and moved in a manner that will not damage the valves or rupture the cylinders.
3. DISPOSAL: Gas cylinders shall be returned to the gas vendor either for refilling or proper disposal depending on the condition of the cylinder. In no case shall the Contractor discard these cylinders in waste dumpsters.

J. Scrap Metal and Containers (contaminated)

1. KINDS OF HAZARDOUS SCRAP METAL: Metal as well as plastic drums and containers that once held Owner-regulated waste (including solvents, oils, paint, etc.).
2. STORAGE: Spent metal or plastic drums and containers over 5-gallon capacity shall not be included with general waste. These items shall be stored and disposed of separately. The containers shall be clearly labeled to identify they are empty but also the label shall clearly identify the original contents to facilitate disposal. Other hazardous scrap metal shall be stored in containers that will not react with the material or allow the hazardous material to disperse into the environment.
3. DISPOSAL: All materials are to be properly disposed of by the Contractor in accordance with Paragraph 1.05.

K. Scrap Metal (non-contaminated)

1. SOURCES OF NON-HAZARDOUS SCRAP METAL: Casework, metal wall partitions, sheet metal, nuts, bolts, and other metal construction waste.
  2. RECYCLING: Every attempt shall be made to recycle these materials by the Contractor.
  3. DISPOSAL: If material cannot be recycled, non-hazardous scrap metal shall be disposed of as construction debris in accordance with the contract.
- L. Asbestos: See Specification Section 02085 for proper removal, packaging and disposal of asbestos.
- M. Paint: The Contractor shall use non-toxic and non-flammable paints whenever these alternative paints are feasible. Use of lead-containing paint is prohibited. For removal or disposal of lead-containing paint, see Paragraph 3.03.A.
1. KINDS OF PAINTS: Toxic and/or flammable oil based paint.
  2. STORAGE: The Contractor shall not mix hazardous paints with general waste. Toxic and/or flammable paints shall be stored in NFPA-approved flammable liquid containers/cabinets that are clearly labeled to identify contents. Appropriate containers are those that will not deteriorate or react with the paints or allow the paints to leak into the environment during normal use, handling, and disposal procedures. Regulations for containing and labeling paints/solvents can be found in 49 CFR 172.101. All paint containers shall be sealed securely to prevent spilling or dispersal during transport.
  3. DISPOSAL: All materials are to be properly disposed of by the Contractor in accordance with Paragraph 1.05.
- N. Scrap Equipment
1. RECYCLING: Every attempt shall be made to recycle these materials by the Contractor.
  2. DISPOSAL: If material cannot be recycled, scrap equipment shall be disposed of as construction debris in accordance with the contract.
- 3.04 PACKAGING, LABELING, AND MARKING OF HAZARDOUS WASTE MATERIALS FOR SHIPMENT OFF SITE
- A. General Shipping Requirements: Contractor shipments of hazardous and mixed wastes or materials shall be performed in accordance with the latest revision of all applicable EPA Title 40 CFR, NRC Title 10 CFR, and DOT

Title 49 CFR requirements. As new packaging, labeling, and shipping regulations are promulgated and approved, the Contractor shall take the necessary measures to comply. The Contractor shall provide all documents and labels required for shipping wastes and materials.

3.05 SHIPPING TO TREATMENT, STORAGE, AND DISPOSAL FACILITIES AND OTHER OFF-SITE DESTINATIONS.

- A. Use of Hazardous Waste Manifest: Uniform Hazardous Waste Manifests (EPA Form 8700-22 or latest revision thereof) shall be properly completed by the Contractor for each waste shipment and shall list each transportation container including any non-hazardous waste or hazardous materials shipped. The Contractor shall use the manifest of the receiving state unless that state does not have one, in which case the Contractor shall use the generator state manifest. All manifest information shall be neatly typed and contain all information required by applicable Federal, state, and local hazardous waste or materials regulations. The Contractor shall provide all data required for waste transportation, treatment, or disposal, and for completion of hazardous waste or material generator report as required by the regulatory agency of jurisdiction.
- B. DOT Emergency Response Information Requirements: The Contractor and the transporter must comply with the DOT Emergency Response Communication Standards applicable to the shipment of hazardous materials.
- C. Use of Permitted Hazardous Waste Facilities with Full RCRA Permit Status.
  - 1. Storage, treatment, or disposal of hazardous wastes and materials shall be carried out only at facilities that have been issued final operating permits pursuant to RCRA and implemented by the hazardous waste regulatory authority(ies) of jurisdiction. Facilities that have applied for formal permits and are in interim status may be used by the Contractor only upon written certification by the Contractor that no fully permitted facilities are available and upon written approval of the interim status facility by the Owner's Representative. All Facility Permits must explicitly state that they are permitted for each particular waste and material that is to be treated, stored, or disposed of under this contract.
  - 2. All facilities used for interim treatment or final treatment and disposal of items under this contract shall have as a minimum an EPA and state approved interim status permit showing EPA hazardous waste numbers for each waste the facility is permitted to handle, as described in 40 CFR 261, Subparts C and D. Mere acceptance of the waste or

material at a properly permitted TSDF does not meet the definition of final treatment and disposal under this contract.

### 3.06 FIELD QUALITY CONTROL

- A. Site Inspection and Stop Work Orders: While performing this work, the Contractor shall be subject to on-site inspection by the Owner/Owner's representative. Work shall also be subject to inspection by OSHA and EPA inspectors and/or local building or health officials. If found to be in violation by any of these officials, the Contractor shall cease all work immediately. Until the violation is resolved, standby time required to resolve the violation shall be at the Contractor's expense.

### 3.07 CLEANUP AND DISPOSAL

- A. Permits and Notifications: Secure necessary permits in conjunction with hazardous material removal, hauling, and disposition and provide timely notification of such actions, as may be required by Federal, state, regional, and local authorities. Notify the Regional Office of the United States Environmental Protection Agency and provide copies of the notification to the Owner's Representative 10 calendar days prior to the commencement of the work.
- B. Housekeeping: Essential elements of hazardous materials control include housekeeping and clean up procedures. Maintain all surfaces within the work area free of accumulations of debris to prevent further dispersion and contamination. Give meticulous attention to restricting the spread of debris, keep waste from being distributed over the general area or to other areas in the building. The blowing down of the work area with compressed air is forbidden. Post appropriate hazard warning signs. In all possible instances, workmen shall clean up their own areas. Equip personnel engaged in cleaning up scrap and waste with appropriate personal protective clothing.
- C. Approval of Final Clean Up: The Owner's Representative will inspect the work area in concert with the Contractor for approval of hazardous material clean up. Visible signs of potential contamination, dust, or debris are not permitted on any surface in or around the work area. The Owner's Representative will approve final cleaning and restoration of the work area.

END OF SECTION 01548

## SECTION 02085

### ASBESTOS ABATEMENT

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION OF WORK

- A. General: The intent of this project is to remove all friable asbestos-containing materials and non-friable materials that may be rendered friable during the planned demolition of the structures comprising both the Rock Creek School and Waverley Elementary School located in Frederick, MD. This scope of work includes all work necessary to reduce air concentrations of asbestos to the specified level and maintain the specified asbestos control limits during the life of the contract. It is the intent of this specification to remove all friable asbestos-containing materials and non-friable materials with a potential to become friable using either full containments and/or glovebag techniques within regulated work areas. The Contractor is responsible for acquiring all necessary permits and variances to perform this project.
- B. Asbestos-containing materials have been identified in the following reports:
- “Hazmat Survey – FCPS Bid #16-MISC-3, Rock Creek School, Frederick, MD” prepared by SaLUT, Inc. and Dated December 4, 2017.
  - “Demolition Hazardous Materials Survey, Waverley Elementary School, Frederick, Maryland” prepared by AERO EH&S, Inc. and dated January 18, 2019.
- C. Project Locations:

Rock Creek School  
191 Waverley Drive, Frederick, MD

The Rock Creek School building constructed in 1972 and totals 55,214 square feet.

Waverley Elementary School  
201 Waverley Drive, Frederick, MD

The Waverley Elementary School building was constructed in 1969 with a small addition added in 2003 and totals 51,178 square feet.

- D. It is the Contractor's responsibility to expose and remove all friable asbestos-containing materials and non-friable materials that may be rendered friable during demolition throughout the buildings.
1. The asbestos-containing materials to be removed for this project are listed in the following tables which are excerpted from the respective survey reports:

**Rock Creek School – Identified Asbestos-Containing Materials**

| Homogeneous Area | Material                         | Material Color                                | Quantity | Units |
|------------------|----------------------------------|---|----------|-------|
| DWJC             | Joint Compound                   | White   | 6534     | SF    |
| FT02             | Floor Tile and Mastic (12"x12")  | White & tan with brown streaks & white specks | 22664    | SF    |
| M01              | Wrap on Pipe                     | Black   | 269      | LF    |
| M01              | Wrap on Pipe                     | Black   | 269      | LF    |
| M03              | Mastic on Fiberglass Insulation  | Black   | 942      | LF    |
| M05              | Paper Wrap on Pipe               | Black   | 4        | LF    |
| M06              | Endcap Mastic Wrap on Pipe       | White   | 219      | LF    |
| M07              | Pipe wrap on Fiberglass Pipe     | White   | 30       | LF    |
| M08              | Seam Mastic                      | White   | 500      | LF    |
| M08              | Seam Mastic on Fiberglass        | White   | 863      | LF    |
| M11              | Mastic on Foil Wrap              | White   | 5        | LF    |
| M13              | Metal Roof Drain Bowl            | White   | 8        | LF    |
| M14              | Mastic on Paper                  | White   | 6        | LF    |
| Rock Creek-19    | Duct Insulation                  | White   | 490      | SF    |
| Rock Creek-34    | Window Glazing                   | White   | 523      | SF    |
| Rock Creek-7     | Caulking, Door                   | Beige   | 2953     | LF    |
| Rock Creek-8     | Sealant, Sink                    | Black   | 104      | SF    |
| Rock Creek-9     | Caulking, Window                 | Beige   | 1180     | LF    |
| S1               | Smooth 2 Coat Plaster            | White   | 260      | SF    |
| TSI01            | Mudded Duct Insulation           | White   | 2        | EA    |
| TSI04            | 12" Block Pipe Hanger Insulation | White   | 6        | EA    |

### Waverley ES – Identified Asbestos-Containing Materials

| Sample Description                             | Location                      | Approximate Quantity | Friable | Condition | Asbestos, %  |
|--|-------------------------------|----------------------|---------|-----------|--|
| 9" x 9" White Floor Tile and Mastic            | Room A-4                      | 150 SF               | No      | Good      | <u>Tile</u><br>4% Chrysotile<br><u>Mastic</u><br>6% Chrysotile |
| 3"–6" Mudded Pipe Fitting Insulation           | Observed During AHERA Surveys | 55 EA                | Yes     | Good      | 5% Amosite   |
| 6"–12" Mudded Pipe Fitting Insulation          | Observed During AHERA Surveys | 18 EA                | Yes     | Good      | 5% Amosite   |
| Black/Cream Seam Mastic on F/G Pipe Insulation | Observed During AHERA Surveys | 820 LF               | No      | Good      | 6% Chrysotile  |
| Black Mastic on Foil Duct Insulation           | Observed During AHERA Surveys | 1,490 LF             | No      | Good      | 5% Chrysotile  |
| Asbestos Cement Soffit Panels                  | (See Drawings)                | 3,200 SF             | No      | Good      | 12% Chrysotile   |
| Chalkboard Adhesive                            | Classrooms (See Drawings)     | 136 SF               | No      | Good      | ASSUMED  |
| Wood Clad Fire Doors (labeled)                 | (See Drawings)                | 13 EA                | No      | Good      | ASSUMED  |

LF = linear feet  
SF = square feet

- C. Quantities of materials to be removed, which are provided herein, are approximate estimates provided by the survey reports. It shall be the responsibility of the Contractor to verify understanding and agreement with quantities provided prior to submitting a bid. If the Contractor bids for this work without disputing specified quantities of described materials, this shall indicate acceptance of a Scope of Work, which includes removal of all described materials, regardless of listed quantity.
- D. The Contractor is responsible for exposing the chases, plenums, and ceilings to ensure that all these materials have been removed. This work includes, but is not limited to, the demolition of suspended ceilings, block chase walls and plenums, and the removal of casework that may be on top of ACM flooring. Demolition debris that is not contaminated can remain on site for disposal with the rest of the structure, but must either be removed from the containment areas or sealed with plastic sheeting so as to not affect the final clearance air sampling.

## 1.02 QUALITY ASSURANCE

A. Contractor Qualifications: The Contractor shall be a firm of established reputation (or if newly organized, whose personnel have previously established a reputation in the same field) who is regularly engaged in and who maintains a regular force of workmen skilled in asbestos abatement, and shall have performed this work on previous projects.

1. Contractors performing asbestos abatement work must be licensed to do asbestos work in the State of Maryland.
2. Contractor employees assigned to active asbestos work areas shall have and demonstrate current registration as asbestos abatement workers, at a minimum, in the State of Maryland.
3. Pursuant to NESHAP requirements, the Contractor should provide appropriate written notification at least 10 days prior to the start of asbestos abatement work to:

Asbestos Program Coordinator, Code 3AM 22  
U.S. Environmental Protection Agency Region III  
841 Chestnut Street  
Philadelphia, PA 19107

and to:

Air & Radiation Management Administration  
Maryland Department of the Environment  
1800 Washington Boulevard  
Baltimore, MD 21230  
(410) 537-3000

B. Asbestos Control Limits: The enclosed work areas shall be defined as a regulated area in accordance with 29 CFR 1910.1001 and 29 CFR 1926.1101.

1. Inside Asbestos Work Area: For personnel wearing negative-pressure respirators, exposures to asbestos shall not exceed an 8-hour time weighted average of 0.1 fiber (longer than 5 microns) per cubic centimeter of air (f/cc). Regardless of the respiratory protection worn, air concentrations inside the work area will not exceed an 8-hour time weighted average of 1.0 f/cc. It is the responsibility of the Contractor to provide an independent industrial hygiene consultant to provide the required personal air monitoring and to ensure that all safety and health procedures are followed.

2. Outside Asbestos Work Area: Air concentrations of asbestos shall be maintained at the lowest attainable level and shall not exceed an 8-hour time weighted average of 0.01 fiber per cubic centimeter of air. This applies to all areas in the building while work is in progress except for the asbestos work area, and to the entire building, including the former work area, after final cleanup. To ensure compliance with these standards, the Building Owner will provide the required air monitoring outside the Contractor's work area and the Building Owner's industrial hygienist will have unrestricted access to the Contractor's work site. The asbestos abatement contractor may perform any air sampling he wishes to ensure compliance with this standard. If a discrepancy arises between the Contractor's air monitoring results and the Building Owner's results, the Building Owner's results shall prevail.

### 1.03 SUBMITTALS

- A. Post-Award Asbestos Abatement Submittals: Items 1.03.A.1. through 1.03.A.7 below are to be submitted after the award, but are required to be approved by the Building Owner or his designated representative prior to starting work.
  1. Abatement Plan: Submit a detailed site-specific plan of the procedures proposed for use in complying with the requirements and regulations included in this specification. The plan shall include the location and layout of decontamination areas, the sequencing of asbestos work, the interface of trades involved in the performance of work, and methods to be used to ensure the safety of building occupants and visitors to the site. Expand upon the use of portable HEPA ventilation system, closing out of the building's HVAC system during removal, method of removal to prohibit emissions in the work area, and packaging of removed asbestos debris. The abatement plans should be specific for each of the school buildings since they will be performed at different dates under separate notifications.
  2. Disposal Plan: Prepare a disposal plan including the location of the approved disposal site and the Contractor's method for documenting proper asbestos disposal to the Building Owner or his designated representative.
  3. Environmental Protection Agency (EPA) Notification: Provide a copy of the NESHAPS Notification sent to the Regional EPA Asbestos Regulation Office (Paragraph 1.02).

4. Local Government Notification: Provide a copy of the notification sent to the appropriate State or local Governmental Asbestos Regulation Office (Paragraph 1.02).
  5. Certificates of Compliance: Submit certification that vacuums, ventilation equipment, and other equipment required to contain airborne asbestos fibers conform to ANSI Z9.2.
  6. Information on Encapsulating Material: Submit written evidence that material meets the latest requirements of the EPA and possesses the specified characteristics.
  7. Laboratory Qualification Information: Submit proof of qualifications of testing laboratory and personnel. Accreditation by the American Industrial Hygiene Association (AIHA) for asbestos analysis and two consecutive quarterly reports showing that the laboratory analyzing the samples has been judged proficient by successful participation in the National Institute for Occupational Safety and Health (NIOSH) Proficiency Analytical Testing (PAT) Program shall be considered sufficient proof of compliance. This submittal must be approved by the Building Owner or his designated representative prior to beginning any testing.
- B. During Work Asbestos Abatement Submittals: Items 1.03.B.1 through 1.03.B.2 below are to be submitted to the Building Owner or his designated representative as work progresses at the time specified.
1. Air Monitoring and Work Area Information:
    - a. Air Monitoring Results: Results of all air monitoring conducted by the Contractor shall be posted within 24 hours of collection for all workers to see. A copy of the results shall be given to the Building Owner or his designated representative.
    - b. Differential Air Pressure Readings: Starting when a negative pressure containment is erected and approved by the Building Owner or his designated representative, a copy of the strip chart record of the work area relative pressure shall be submitted within 24 hours after the recording was made.
    - c. Work Area Inspections: The Building Owner's representative will perform visual inspections of the work area for the pre-commencement, final visual, and final clearance stages of the work.

The Contractor shall notify the Building Owner or his designated representative at least 4 hours in advance of the required inspection.

2. Transporting and Disposing of Asbestos-Containing Materials (ACM):

- a. Disposal Receipts: Receipts from the landfill operator which acknowledge the Contractor's shipment of ACM from the site (NESHAPS Waste Shipment Records) shall be submitted three days following removal of ACM from the premises. Each receipt shall provide date, quantity of material removed, and signature of an authorized representative of the transporter. A signed and dated copy of the Waste Shipment Record showing receipt at an authorized landfill must be received by the Building Owner's designated representative within 30 calendar days of the date of the shipping receipt.
  - b. Transportation Vehicles: Transportation shall be in vehicles dedicated to asbestos transportation. Vehicles shall be marked in accordance with DOT and NESHAPS regulations.
  - c. Shipping Manifest Forms: Signed and completed Shipping Manifest Forms (NESHAPS Waste Shipment Records) shall be used for the transportation of ACM. This form shall be signed by each party who has control over the asbestos waste, and a copy retained by each party as responsibility for the waste is transferred to the next party.
- C. Final Submittals: Items 1.03.C.1 and 1.03.C.2 below are to be submitted to the Owner's designated representative at the completion of work for each work containment.
- 1. Daily Log: Copies of a daily log showing the date(s) and time(s) of entrance to and exit from the work area(s) for all persons.
  - 2. Re-Establish Systems - Submit written certification:

1.04 CONTRACTOR RESPONSIBILITY

- A. The Contractor shall assume full responsibility and liability for compliance with all applicable Federal, State, and local regulations pertaining to the protection of workers, visitors to the site, and persons occupying areas adjacent to the site. The Contractor is responsible for providing medical examinations and maintaining medical records of personnel as required by the applicable Federal, State, and local regulations, and shall hold the

Building Owner and his designated representative harmless for failure to comply with any applicable safety or health regulation on the part of himself, his employees, or his subcontractors.

#### 1.05 PROJECT/SITE CONDITIONS

- A. Means of Egress: Establish and maintain emergency and fire exits from the work area.
- B. Decontamination Facility: Throughout the time that asbestos removal is taking place, the abatement contractor will maintain a working three-stage decontamination facility at the point of access to the containment. As a minimum, the decontamination facility will consist of a clean changing area, an air space, a shower, another air space, and a contaminated changing area. The size and location of this facility shall be approved by the Building Owner's designated representative.
- C. Access to Work Area: Access to work areas shall be through decontamination areas. The following shall have access to work area:
  - 1. Building Owner or Designated Representative
  - 2. Contract Monitoring Personnel
  - 3. OSHA Inspectors
  - 4. EPA Inspectors
  - 5. State & Local Building or Health Officials
  - 6. Authorized Inspection Personnel

#### 1.06 SEQUENCING/SCHEDULING

- A. Schedule and work hours must be approved by Frederick County Public Schools (FCPS).

### PART 2 - PRODUCTS

#### 2.01 EQUIPMENT

- A. Equipment, including protective clothing and respirators used in the execution of this contract and provided to visitors to the site, shall comply with ASTM E849 and with applicable Federal, State, and local regulations. Respirators shall conform to the OSHA requirements in 29 CFR 1910.134 and 29 CFR 1926.1101, except that single use and disposable respirators

shall not be used. Type of respirators required shall be as specified in 29 CFR 1926.1101. If any air sampling indicates levels above 5.0 fibers per cubic centimeter, supplied air (type "C") respirators will be required during actual removal operations. The minimum respiratory protection for this project is full-face powered air purifying respirators equipped with P100 (HEPA) cartridges.

## 2.02 ENCAPSULATING MATERIALS

- A. Encapsulating materials (sealants) shall meet the latest requirements of the EPA and shall possess the following characteristics:
  - 1. Adherence: The sealant eliminates fiber dispersal by adhering to the fibrous substrate with sufficient penetration to prevent separation of the sealant from the sprayed asbestos material.
  - 2. Impact Penetration: It withstands impact and penetration, protects the enclosed sprayed asbestos material, and must not cause separation of sprayed asbestos material from its original substrate.
  - 3. Flexibility: It possesses enough flexibility to accommodate atmospheric changes and settling of the structure over time.
  - 4. Resistance to Smoke and Flame: It shall have high flame retardant characteristics and a low toxic fume and smoke emission rating.
  - 5. Ease of Application: It must be easily applied with relative insensitivity to errors in preparation or application. Ease of repair by routine maintenance personnel is desirable.
  - 6. Toxicity: The sealant must be neither noxious nor toxic to application workers and structure users thereafter.
  - 7. Permeability: It should have some permeability to water vapor to prevent condensation accumulation and be resistant to common cleaning agents.
  - 8. Stability: It should have suitable stability to weathering and aging.
- B. Guarantee: Guarantee encapsulating materials to perform for a period of 1 year, in accordance with "Guarantee" clause of the General Conditions.

## PART 3 - EXECUTION

### 3.01 PREPARATION

- A. Isolate the work areas for the duration of the work by completely sealing off all openings and fixtures in the work area including, but not limited to, heating and ventilation ducts, doorways, corridors, windows, and lighting with plastic sheeting taped securely in place.
- B. Build double barriers of plastic sheeting at all entrances and exits to the work areas so that the work area is always closed off by one barrier. Build three-stage decontamination airlocks at the worker entrance to the work areas. The waste loadouts, if separate from the main decon, must be at least two-stage. Both decons must have working showers with proper discharge filtration.
- C. Place plastic drop cloths under all locations where glovebag removals will occur in the work area.
- D. Before the work commences, clean all removable items and equipment. Remove them from the work area and store, or dispose of off site, as directed.
- E. Cover all non-removable items and equipment in the work area with plastic sheeting taped securely in place.
- F. Remove all heating, ventilation, and air conditioning system filters, pack them in sealable plastic bags (6-mil minimum) for disposal in the approved waste disposal site, and replace them with new filters upon completion of abatement.
- G. Post warning signs on the primary containment as required by 29 CFR 1910.1001, 29 CFR 1926.1101, ASTM E849, and as directed by the Building Owner or his designated representative. State of Maryland signage shall be posted at all entrances three (3) days prior to the commencement of abatement activities.
- H. Obtain Written Approval of the Finished Primary Containment from the Building Owner's designated representative prior to starting any actual asbestos removal work.

### 3.02 WORK PROCEDURES:

- A. General Procedures: The enclosed work areas shall be defined as an asbestos regulated area and all asbestos worker protection and work practices not addressed in this specification shall be performed in conformance with the general safety and health provisions of 29 CFR 1910.1001, 29 CFR 1910.20 and 29 CFR 1926.1101, respectively. For asbestos abatement work, use general work practices, work practices for removal, and work practices for encapsulation as specified in ASTM E849, and other appropriate work procedures approved by the EPA. If a conflict arises, the more stringent application shall apply until a determination is made by the Owner or his designated representative.
- B. Local Exhaust System: Provide a local exhaust system in the asbestos control area as required to meet the asbestos control limit and ceiling concentration. The local exhaust system shall be in accordance with ANSI Z9.2, using HEPA filters. Equip exhaust openings with the necessary filters required to reduce the airborne asbestos concentration to below the asbestos control limit. Local exhaust equipment must be sufficient to maintain a minimum negative air pressure of 0.02 inch water gauge in the asbestos control area. In no case shall the building ventilation system be used as the local exhaust system for asbestos control. Filtering in vacuums and exhaust equipment shall conform to ANSI Z9.2; HEPA filters shall be used in all vacuums and exhaust equipment. If the local exhaust system does not exhaust directly to the outside, the exhaust equipment shall be tested for integrity with a dioctylphthalate (DOP) or equivalent smoke generator and spectrophotometer each time a containment is erected.
- C. Coordination of Work of all Trades: Coordinate the work of all trades to ensure that their work is performed in accordance with the applicable regulations and that the asbestos control limits are maintained at all times both inside and outside the asbestos work area.

### 3.03 NEGATIVE PRESSURE GLOVEBAG METHOD OF ASBESTOS REMOVAL:

- A. General: If specified and/or approved in writing by the Building Owner, when using the glovebag method for removing pipe insulation, personnel decontamination procedures may not be required. However, respiratory protection and disposable clothing will be required. Discard the clothing in accordance with paragraph "Disposal of friable asbestos."
- B. Procedure: Install the glovebag and negative pressure equipment according to manufacturer's recommendations. Cut covering on the

insulation along the top seam to allow wetting of the insulation and cut cover all around section to be removed. Remove in small sections. Lower the insulation material carefully inside the glovebag. Do not permit it to drop.

- C. Removal of Glovebag and Disposal: Following removal of insulation, ensure that all visible material is inside the bag. Spray all tools in glovebag with amended water while it is still attached. Evacuate bag with portable HEPA vacuum and while the bag is collapsed, squeeze bag below tool pouch, and twist bag. Seal bag with tape or locking ties, separating the waste from the removal area. Vacuum the inside of the top of the glovebag and unsealed portion of the glovebag below. Keep HEPA vacuum connected until the glovebag is removed. Replace HEPA filters as recommended by manufacturer. Cut the glovebag along the top and sides, then remove it from the pipe. Wet pipe and wash all tools and removal area thoroughly. Dispose of glovebag, material, and contaminated equipment in accordance with Paragraph 3.05 C "Disposal of Friable Asbestos."

### 3.04 QUALITY CONTROL:

- A. Monitoring: Monitoring of airborne concentrations of asbestos shall be in accordance with 29 CFR 1910.1001, 29 CFR 1926.1101, and ASTM E849. Monitor the airborne concentration of asbestos before starting work to obtain a baseline fiber concentration in the affected areas. Then monitor once every four (4) hours, continuously during the course of the work inside the asbestos work area; one time daily outside the entrance to the asbestos work area and at the exhaust opening of the local exhaust system. If monitoring shows airborne concentrations greater than the asbestos control limits, stop all work, correct the conditions causing the excessive levels, and notify the Building Owner or his designated representative immediately. In addition, monitor the airborne concentrations of asbestos after final cleanup and removal of the enclosure of the asbestos control area in accordance with Paragraph 3.05 D "Final Cleanup and Removal of Enclosures."
- B. Site Inspection and Stop Work Orders: While performing asbestos abatement work, the Contractor shall be subject to on-site inspection by contracted inspection services. Work shall also be subject to inspection by OSHA and EPA inspectors and/or local building or health officials. If found to be in violation by one of these officials, the Contractor shall cease all work immediately. Until the violation is resolved, standby time required to resolve the violation shall be at the Contractor's expense. One complete set of equipment (such as respirators and disposable clothing) required for entry to the asbestos control area shall be made available within two (2) hours of

request by the Building Owner or his designated representative for inspection of the asbestos control area. Such requests will only be made during the Contractor's working hours.

### 3.05 CLEANUP AND DISPOSAL:

- A. Permits and Notifications: Secure necessary permits in conjunction with asbestos removal, hauling, and disposition and provide timely notification of such actions, as may be required by Federal, State, regional, and local authorities. Notify the Regional Office of the United States Environmental Protection Agency and provide copies of the notification to the Building Owner or his designated representative 10 days prior to the commencement of the work. Provide notification in accordance with 40 CFR 61.22(d)(1) (See Paragraph 1.02).
- B. Housekeeping: Essential parts of asbestos dust control are housekeeping and cleanup procedures. Maintain all surfaces throughout the building free of accumulations of asbestos fibers to prevent further dispersion. Give meticulous attention to restricting the spread of dust and debris, keep waste from being distributed over the general area or to lower floors. Use approved industrial vacuum cleaners with a HEPA filter to collect dust and small scrap. Blowing down of the space with compressed air is forbidden. Post appropriate asbestos hazard warning signs. In all possible instances, workmen shall clean up their own areas. Equip personnel engaged in cleaning up asbestos scrap and waste with necessary respiratory equipment and protective clothing.
- C. Disposal of Friable Asbestos: Collect and dispose of friable asbestos waste, scrap, debris, bags, containers, equipment, and asbestos-contaminated clothing which may produce airborne concentrations of asbestos fibers in sealed impermeable bags. Prior to placing in bags or containers, wet down asbestos wastes to reduce airborne fiber concentrations. Waste asbestos material shall be disposed of in accordance with all Federal regulations at a sanitary landfill that meets EPA requirements. The contractor will provide the Building Owner or his designated representative with a copy of all hazardous waste manifests, haulers receipts, or landfill receiving tickets resulting from the disposal of the asbestos waste. Establishment of any on-site temporary holding area for properly packaged asbestos waste must be approved by the Building Owner or his designated representative.
- D. Final Cleanup and Removal of Enclosure: The Contractor must notify the Building Owner or his designated representative that the work area is ready

for final inspection. Visible asbestos materials, dust, or debris is not permitted on any surface in or around the work area. Clean work area in accordance with EPA approved methods. The Building Owner's industrial hygienist will perform PCM and/or TEM air sampling for clearance purposes in accordance with EPA regulations and as allowed by the State of Maryland. Perform sampling in an aggressive manner, using fans or similar equipment to create exaggerated air movement during the clearance air sampling. If the airborne fiber concentration is less than the level recommended by EPA/State of Maryland, the Building Owner or a designated representative may authorize removal of the enclosure. ***The Building Owner's approval of final cleaning and restoration of the work is required.***

END OF SECTION 02085

## SECTION 02086

### MERCURY-CONTAINING FLUORESCENT TUBE AND LAMP REMOVAL

#### 1.01 DESCRIPTION OF WORK:

General: The scope of this section is to remove all mercury-containing light tubes from prior to the planned demolition of the structures comprising both the Rock Creek School and Waverley Elementary School located in Frederick, MD.

#### 1.02 RELATED DOCUMENTS

- A. General provisions of the Contract, including bonding, insurance, and other specification sections, apply to this section.
- B. The following reports provide summaries of mercury containing items to be removed from each school.
  - "Hazmat Survey – FCPS Bid #16-MISC-3, Rock Creek School, Frederick, MD" prepared by SaLUT, Inc. and Dated December 4, 2017.
  - "Demolition Hazardous Materials Survey, Waverley Elementary School, Frederick, Maryland" prepared by AERO EH&S, Inc. and dated January 18, 2019.

#### 1.03 SUBMITTALS

- A. Prior to beginning work on this contract, the Contractor should submit for approval a plan of procedures for handling and disposing of all fluorescent light tubes and other mercury-containing lighting fixtures and switches located throughout the facility. The plan must include:
  - 1. The location and configuration of work areas where mercury-containing fluorescent tubes and lamps will be removed. The work area shall be isolated temporarily by use of plastic sheeting or other method so that any accidental contamination will not spread to unrestricted areas of the building.
  - 2. The sequencing of mercury-containing tube and lamp removal work, the interface of trades involved in the performance of work, and methods to

be used to ensure the safety of building occupants and visitors to the site.

3. A method to ensure no contamination of the building or any equipment therein.
4. Provisions to demonstrate that no release of mercury occurred during the project. Airborne levels of mercury are not to exceed 0.05 milligram per cubic meter of air.
5. A contingency plan for response to suspected release of mercury vapor or phosphate dust. This should include notification of the Owner or the Owner's Representative, environmental testing, and clean up of any contamination resulting from Contractor activities. The contingency plan shall include environmental sampling performed by entities meeting the requirements specified elsewhere in this document.
6. Packaging of removed mercury-containing tubes and lamps and labeling of containers. If the tubes/lamps will be handled as hazardous waste, the weight of each container is to be recorded (in pounds) and entered on the manifest. Each container is to be assigned a unique identifier number. This number is to be marked clearly on the outside of the container.
7. A disposal plan including location of an EPA-approved disposal site, qualifications of the transporter, methods of transport, and a description of the methods to be employed to prevent any release to the environment.
8. Manifesting procedures to be used. Each manifest is to be assigned a unique number. Provide legible copies of manifests to the Owner or the Owner's Representative.
9. Provision of disposal receipts to the Owner or the Owner's Representative as well as provision of a signed copy of the manifest within 30 days of receipt of material.
10. Alternative procedures for tube and lamp disposal such as off-site recycling (crushing and collection of mercury vapor and metal constituents).

B. Procedures shall ensure compliance with the regulations listed below:

1. 29 CFR 1910 - Occupational Safety and Health General Industry

2. 29 CFR 1926 - Occupational Safety and Health Construction Industry
  3. 40 CFR - US Environmental Protection Agency Regulations for Toxic Waste.
  4. Applicable State of Maryland regulations
- C. The plan must be approved by the Owner or his designee prior to commencement of work.
  - D. The Contractor shall be a firm of established reputation (or if newly organized, whose personnel have previously established a reputation in the same field) which is regularly engaged in mercury-containing tube and lamp removal.
  - E. Any laboratory utilized to analyze mercury samples shall be accredited by the American Industrial Hygiene Association (AIHA).
  - F. Industrial hygiene sampling shall be performed as necessary under the direction of an industrial hygienist certified by the American Board of Industrial Hygiene.
  - G. The Owner reserves the right to perform any sampling deemed necessary, and the Contractor will receive a copy of the results.
  - H. The Owner or Owner's Representative and any OSHA or EPA Inspectors shall be given unrestricted access to all work areas.
  - I. Personnel monitoring and respiratory protection for contract employees are the sole responsibility of the Contractor; however, the contractor must provide a copy of the results of such sampling to the Owner or Owner's Representative when these tests are performed.

END OF SECTION 02086

SECTION 02087  
PCB LIGHT BALLAST REMOVAL

1.01 DESCRIPTION OF WORK:

General: The scope of this section is to remove all PCB-containing light ballasts from both the Rock Creek School and the Waverley Elementary School located in Frederick, Maryland. No PCB containing ballasts were encountered during either of the surveys for the two schools. However, any ballasts without a “no PCBs” label shall be assumed to contain PCBs and shall be handled in full accordance with this specification.

1.02 RELATED DOCUMENTS

- A. General provisions of the Contract, including bonding, insurance, and other specification sections, apply to this section.
- B. The following reports provide summaries of mercury containing items to be removed from each school.
  - “Hazmat Survey – FCPS Bid #16-MISC-3, Rock Creek School, Frederick, MD” prepared by SaLUT, Inc. and Dated December 4, 2017.
  - “Demolition Hazardous Materials Survey, Waverley Elementary School, Frederick, Maryland” prepared by AERO EH&S, Inc. and dated January 18, 2019.

1.03 SUBMITTALS

- A. Prior to beginning work on this contract, the Contractor should submit a plan of procedures for identifying, handling and disposing of all PCB light ballasts. The contractor will be responsible for inspecting all light fixtures for “No PCBs” labeling. Ballasts without this labeling are to be assumed to contain and shall be handled in accordance with applicable handling and disposal regulations including but not limited to EPA’s Toxic Substances Control Act (TSCA) and EPA’s Resource Conservation and Recovery Act (RCRA). The plan must include:
  - 1. The location and configuration of work areas where ballasts will be removed. This location shall either be a restricted access area such as

a transformer vault or it shall be isolated temporarily by use of plastic sheeting or other method so that any accidental contamination will not spread to unrestricted areas of the building.

2. The sequencing of PCB removal work, the interface of trades involved in the performance of work, methods to be used to assure the safety of building occupants and visitors to the site.
3. A method to ensure no contamination of the building or any equipment therein.
4. Provisions to demonstrate that no release of PCB occurred during the project. Surface contamination shall be defined as equal to or greater than 10 micrograms of PCB per 100 square centimeters. Airborne levels of PCB are not to exceed 1 microgram per cubic meter of air.
5. A contingency plan for response to suspected release of PCBs. This should include notification of the Owner or the Owner's Representative, environmental testing, and clean up of any contamination resulting from Contractor activities. The contingency plan shall include environmental sampling performed by entities meeting the requirements specified elsewhere in this document.
6. A provision for handling and disposing of any light fixtures which appear to have ballasts which may have leaked.
7. Packaging of removed PCB items and labeling of containers. The weight of each container is to be recorded (in pounds) and entered on the manifest (recommend limiting to 600 lbs for handling purposes). Each container is to be assigned a unique identifier number. This number is to be marked clearly on the outside of the container.
8. A disposal plan including location of an EPA approved disposal site, qualifications of the transporter, methods of transporter, methods of transport, and a description of the methods to be employed to prevent any release to the environment.
9. Manifesting procedures (in accordance with 40 CFR Part 761) to be used. Each manifest is to be assigned a unique number. Provision of legible copies of manifests to the Owner or the Owner's Representative.
10. Provision of Certificates of Destruction to the Owner or the Owner's Representative as well as a method to ensure that the disposal facility

destroys the PCB material and provides a signed copy of the manifest within 30 days of receipt of material and a Certificate of Destruction within one year of receipt of the material.

11. Procedures shall ensure compliance with the regulations listed below:

29 CFR 1910, Occupational Safety and Health General Industry

29 CFR 1926, Occupational Safety and Health Construction Industry

40 CFR, US Environmental Protection Agency Regulations for PCB.

29 CFR 1910.120, OSHA Hazardous Waste Operations and Emergency Response

Applicable Maryland Department of the Environment regulations

12. The plan must be approved by the Owner or the Owner's Representative prior to commencement of work.

13. The Contractor shall be a firm of established reputation (or if newly organized, whose personnel have previously established a reputation in the same field), which is regularly engaged in PCB removal.

14. Any laboratory utilized to analyze PCB samples shall be accredited by the American Industrial Hygiene Association (AIHA) for organic materials analysis.

15. Industrial hygiene sampling shall be performed under the direction of an industrial hygienist certified by the American Board of Industrial Hygiene.

16. The Owner reserves the right to perform any sampling deemed necessary, and the Contractor will receive a copy of the results.

17. The Owner or Owner's Representative and any OSHA or EPA Inspectors shall be given unrestricted access to all work areas.

18. Personnel monitoring and respiratory protection for contract employees are the sole responsibility of the Contractor, however the contractor must provide a copy of the results of such sampling to the Owner or Owner's Representative when these such tests are performed.

END OF SECTION 02087

## SECTION 02090

### LEAD-BASED PAINT REMOVAL AND DISPOSAL

#### PART 1 GENERAL

##### 1.01 DESCRIPTION OF WORK

- A. This specification addresses the removal (including clean up) and disposal of lead-based paint that is being removed to reduce or eliminate lead hazards.
- B. Areas where lead-based paint is to be disturbed by torch cutting are required to have the paint removed in accordance with this Section.
- C. The Contractor shall provide all labor, materials, tools, equipment, services, testing, supervision, and incidentals necessary to perform the work of lead-based paint removal (including clean up) and disposal in accordance with the following specifications.
- D. The Contractor shall perform all work in compliance with Occupational Safety and Health Administration (OSHA) and State of Maryland regulations. This specification does not attempt to implement the OSHA and State of Maryland regulations for Contractors, but rather focuses on the prevention of lead contamination of employees, visitors, and the environment.

##### 1.02 RELATED DOCUMENTS

- A. Lead-based and lead-containing paint have been identified on various surfaces as presented in the following reports:
  - “Hazmat Survey – FCPS Bid #16-MISC-3, Rock Creek School, Frederick, MD” prepared by SaLUT, Inc. and Dated December 4, 2017.
  - “Demolition Hazardous Materials Survey, Waverley Elementary School, Frederick, Maryland” prepared by AERO EH&S, Inc. and dated January 18, 2019.

##### 1.03 DEFINITIONS

- A. Action Level: Employee exposure, without regard to use of respirators, to an airborne concentration of lead of 30 micrograms per cubic meter of air ( $\mu\text{g}/\text{m}^3$ ) averaged over an 8-hour period.

- B. Air Monitoring: Sampling of lead concentrations within the lead control area and inside the physical boundaries which is representative of the airborne lead concentrations which may reach the breathing zone of personnel potentially exposed to lead.
- C. Certified Industrial Hygienist (CIH): As used in this section, refers to an industrial hygienist retained by the Contractor who is certified by the American Board of Industrial Hygiene in comprehensive practice.
- D. Eight-hour Time-Weighted Average (TWA): Airborne concentration of lead to which an employee is exposed averaged over an 8-hour workday.
- E. HEPA Filter Equipment: High-efficiency particulate air filtered vacuuming equipment with a filter system capable of collecting and retaining lead-containing dust. HEPA filters have a 99.97 percent efficiency for retaining particles of 0.3 micron or greater in size.
- F. Lead: Metallic lead, inorganic lead compounds, and organic lead soaps. Excluded from this definition are other organic lead compounds.
- G. Lead Control Area: An area physically roped or partitioned off around a lead-based paint removal area which limits unauthorized entry of personnel.
- H. Permissible Exposure Limit (PEL): Fifty micrograms per cubic meter of air ( $\mu\text{g}/\text{m}^3$ ) as an 8-hour time weighted average as determined by OSHA.

## REFERENCES

- A. The Contractor shall comply with the following regulations:
  - 1. Code of Federal Regulations:
    - a. US Department of Labor, Occupational Safety and Health Administration, Lead Exposure on Construction, 29 CFR 1926.62.
    - b. US Environmental Protection Agency, Resource Recovery and Conservation (RCRA), 40 CFR 260 through 265.
    - c. EPA 40 CFR 745, Subpart L – Lead-Based Paint Activities
  - 2. State of Maryland:
    - a. COMAR

#### 1.04 SUBMITTALS

- A. The Contractor shall submit to the Owner's Representative the following:
  - 1. Starting and estimated completion dates of the work.
  - 2. Job-specific lead-based paint removal techniques to be used.
  - 3. Copies of certificates of training for each employee working.
  - 4. Product data (e.g., manufacturer's technical literature, brochures, material safety data sheets [MSDS], etc.) for each chemical product proposed for use.
  - 5. The name and location of the waste disposal site and, following disposal, a copy of the completed manifest, signed and dated by the transporter.
  - 6. Procedures for air monitoring including the name and address of the Contractor to perform air monitoring, a listing and qualifications of all personnel assigned to the project, and a detailed description of the procedures for air monitoring to be used for this project.

#### 1.05 CONTRACTOR EMPLOYEE PROTECTION:

- A. The Contractor shall ensure that its employees are protected in accordance with all applicable Federal, State, and local regulations, in particular the US Department of Labor, Occupational Safety and Health Administration "Lead Exposure in Construction", 29 CFR 1926.62, and State of Maryland regulations.
- B. All Contractor employees who perform lead-based paint removal (including clean up) or disposal shall have successfully completed a State of Maryland approved training course in lead-based paint abatement within the previous two (2) years.
- C. All persons, when present in the lead control areas, shall wear disposable clothing and shoe covers.
- D. The Contractor shall ensure that its employees have received lead paint medical screening and have been certified by a physician to be able to work while wearing a respirator.

## PART 2 PRODUCTS

### 2.01 REMOVAL TECHNIQUES

- A. The Contractor shall use one or more of the following approved lead-based paint removal techniques:
  - 1. Component removal as approved by the Owner.
  - 2. Chemical stripping (non-flammable and not containing methylene chloride).
  - 3. Manual wet scraping limited to the removal of loose and peeling paint.
  - 4. Heat gun.
- B. Chemical stripping is considered a low airborne lead producing technique. OSHA has determined that this procedure generates airborne lead levels of less than 50  $\mu\text{g}/\text{m}^3$  (below the PEL).
- C. Manual wet scraping, heat gun use, and sanding using HEPA filtration are considered moderate airborne lead producing techniques. OSHA has determined that these procedures generate airborne lead levels ranging from 50 to 500  $\mu\text{g}/\text{m}^3$  (1 to 10 times the PEL) unless air monitoring determines actual employee exposures.
- D. Sanding is considered a high airborne lead producing technique. The use of this technique is prohibited. OSHA has determined that this procedure generates airborne lead levels greater than 500  $\mu\text{g}/\text{m}^3$  (more than 10 times the PEL) unless air monitoring determines actual employee exposure.
- E. Abrasive blasting, torch burning, welding, and cutting are considered extremely high airborne lead producing techniques. OSHA has determined that these procedures generate airborne lead levels greater than 2500  $\mu\text{g}/\text{m}^3$  (more than 50 times the PEL) unless air monitoring determines actual employee exposure. The use of the techniques described above in this paragraph, or any other lead-based paint removal technique requiring the use of a negative air pressure enclosure by the OSHA or State of Maryland regulations above cited in this paragraph, is prohibited.
- F. Detailed procedures for each of the four approved lead-based paint removal techniques are described in **Appendices A** through **C** to this specification.

### 2.02 PHYSICAL BOUNDARIES AND CAUTION SIGNS

- A. At approaches to the lead control area, the Contractor shall establish physical boundaries by roping off the area to limit unauthorized entry of

personnel and by displaying caution signs at least 500mm (20") x 350mm (14") in size which include the phrase "Caution Lead Hazard, Keep Out" in bold lettering at least 2 inches high.

## 2.03 AIR MONITORING

- A. Monitoring of airborne concentrations of lead shall be in accordance with 29 CFR 1926.62(d) and shall be performed by or under the direction of a qualified Safety Officer. Personal and area monitoring shall be performed during the entire lead-based paint removal (including clean up). Sufficient area monitoring shall be conducted at the physical boundary to the lead control area to ensure unprotected personnel are not exposed above the action level. If the boundary lead levels are at or above the action level, the Safety Officer shall stop the work, immediately correct the condition(s) causing the elevated levels, and notify the Owner's Representative. As a minimum, area monitoring shall be conducted daily on each shift in which lead paint removal (including clean up) is performed in areas immediately adjacent to the lead control area. For outdoor operations, at least one sample on each shift shall be taken on the downwind side of the lead control area.

## 2.04 CLEAN UP

- A. Surfaces of the lead control area shall be lined with plastic and maintained reasonably free of accumulations of paint chips and debris. The spread of chips and debris shall be controlled and shall be kept from being distributed out of the lead control area. Dry sweeping and the use of compressed air to clean the lead control area are prohibited. At the end of each shift and when the paint removal operation has been completed, the areas shall be cleaned of visible lead paint contamination by vacuuming with a HEPA filtered vacuum.
- B. Clean up will be performed by trained workers (see Paragraph 1.06). After the lead-based paint removal work is complete, all debris shall be removed and the first clean up completed as follows:
  - 1. All lead waste, including sealing tape, plastic sheeting, mop heads, sponges, filters and disposable clothing shall be deposited in double 4-mil thick plastic bags or single 6-mil thick plastic bags and the bags sealed.
  - 2. All surfaces in the lead control areas shall be cleaned with a HEPA filtered vacuum and then wet washed with a solution containing approximately 1 ounce of 5% trisodium phosphate to one gallon of water.

3. After the surfaces have dried, HEPA filter vacuum cleaning shall be repeated until no visible residue remains.

## 2.05 WASTE DISPOSAL

- A. The Contractor shall collect lead-contaminated waste, scrap, debris, cleaning materials, stripping agent residues, wash water, equipment, and clothing. Test paint residue and debris, if applicable, in accordance with 40 CFR 261 for hazardous waste. The Contractor shall dispose of regulated lead-contaminated waste material at an EPA-approved hazardous waste treatment storage or disposal facility off property.
- B. All material, whether hazardous or non-hazardous, shall be disposed in accordance with laws and provisions and Federal, State, or local regulations.
- C. A certified hazardous waste transporter shall be used to transport any hazardous waste.

## PART 3 EXECUTION

- 3.01 See Attached Appendices.

**APPENDIX A**  
**LEAD-BASED PAINT REMOVAL TECHNIQUES**  
Chemical Stripping Agents

**PART 1 GENERAL**

**1.01 WORK COVERED UNDER OTHER SECTIONS**

- A. The scope of work for providing clean up and disposal of waste material is covered under Section 2 of this specification.

**1.02 WORK INCLUDED UNDER THIS SECTION**

- A. Work under this section includes the furnishing of all labor, material, and equipment required to remove existing peeling lead-based paint by scraping and/or brushing after the paint has been softened by the application of a chemical stripping agent. Non-peeling lead-based paint shall remain in place.

**PART 2 PRODUCTS**

**2.01 CHEMICAL STRIPPING AGENTS**

- A. Chemical stripping agents shall be non-flammable and not contain methylene chloride. Chemical stripping agents shall be compatible with and not harmful to the substrate to which they are applied. Chemical stripping agents used on masonry surfaces shall contain an anti-stain formulation that inhibits discoloration of stone, granite, brick, or other masonry construction.

**2.02 CHEMICAL STRIPPING AGENT NEUTRALIZERS**

- A. Chemical stripping agent neutralizers shall be used on exterior surfaces only. Neutralizers shall be compatible with and not harmful to the substrate to which they are applied. Neutralizers shall also be compatible with the chemical stripping agent that has been applied to the surface substrate.

**PART 3 EXECUTION**

- 3.01 Chemical stripping agents and neutralizers shall be applied according to the recommendations of the manufacturer. Stripping agents shall not be allowed to penetrate wood or other fibrous substrates. The softened paint shall be removed by scraping or wire brushing.

## PART 4 DAMAGES

- 4.01 The Contractor shall protect adjacent areas from damage from chemical stripping agents during the course of work. Damages to non-protected adjacent areas from chemical stripping agents shall be repaired at the Contractor's expense.

**APPENDIX B**  
**LEAD-BASED PAINT REMOVAL TECHNIQUES**  
Manual Wet Scraping

**PART 1 GENERAL**

**1.01 WORK COVERED UNDER OTHER SECTIONS**

- A. The scope of work or clean up and disposal of waste material is covered under Section 2 of this specification.

**1.02 WORK INCLUDED UNDER THIS SECTION**

- A. Work included under this section includes the furnishing of all labor, materials, and equipment to remove loose or chipping lead-based paint from a limited area. Prior to painting, the edge substrate and the remaining paint must be feathered so that the entire surface is smooth and ready to receive paint.

**PART 2 EQUIPMENT**

- 2.01 None.

**PART 3 EXECUTION**

- 3.01 Lead-based paint will be wetted thoroughly with a garden mister before using a paint scraper, wire brush, or other abrasive tool. The use of a hose or other equipment which will wash the lead debris from the surface is prohibited.

**APPENDIX C**  
**LEAD-BASED PAINT REMOVAL TECHNIQUES**  
Heat Blower Gun Removers

**PART 1 GENERAL**

**1.01 WORK COVERED UNDER OTHER SECTION**

- A. The scope of work for providing clean up and disposal of waste materials is covered under Section 2 of these specifications.

**1.02 WORK INCLUDED UNDER THIS SECTION**

- A. Work included under this Section includes the furnishing of all labor, material and equipment required to remove existing peeling lead-based paint by heat, using a heat blower gun followed by scraping, as called out in these specifications. Paint shall be removed as required to remove peeling paint and to feather the edge of the peeling and non-peeling paint so that the substrate is smooth and ready to receive paint. Non-peeling lead paint shall remain in place.

**PART 2 HEAT BLOWER GUN EQUIPMENT**

- 2.01 Electrically-operated, heat blower gun shall be a flameless electrical paint softener type. The heat blower shall have electronically controlled temperature settings to restrict usage below a temperature of 700 degrees Fahrenheit. Heat blower shall be equipped with a variety of nozzles to cover all common applications (e.g., cone, fan, glass protector, spoon reflector, etc.).

**PART 3 EXECUTION**

- 3.01 The hot air stream from the heat-blower gun shall be directed at the painted surface and the paint allowed to blister and soften. Considerable lead volatilizes from lead-based paint and lead fumes are released at approximately 700 degrees Fahrenheit. Respiratory protection is required for all persons in the work area.
- 3.02 Softened paint shall be removed in the same manner required to remove peeling paint and prepare the surface for painting by scraping and/or wire brushing.

**PART 4 DAMAGES**

- 4.01 Care shall be taken to protect glass in windows and doors and adjacent areas from damage from thermal stresses induced by the concentrated heat of the heat blower gun. Damages to non-protected glass and adjacent areas from thermal stresses shall be repaired at the Contractor's expense.

## **APPENDIX D**

### **SUMMARY OF OSHA LEAD IN CONSTRUCTION REQUIREMENTS**

(US Department of Labor, Occupational Safety and Health Administration "Lead Exposure in Construction", 29 CFR 1926.62)

#### **AIRBORNE LEAD LEVELS ABOVE THE PERMISSIBLE EXPOSURE LIMIT (50 µg/m<sup>3</sup>)**

- Conduct periodic air monitoring.
- Use feasible engineering and work practice controls.
- Provide respirators, protective clothing, and equipment.
- Institute a housekeeping and personal hygiene program.
- Provide area for eating and drinking.
- Provide washing and lavatory facilities.
- Conduct medical surveillance (e.g., periodic blood lead testing).
- Train employees via a 6-hour Maryland-approved course.
- Post warning signs.
- Maintain records.

#### **AIRBORNE LEAD LEVELS BELOW THE PERMISSIBLE EXPOSURE LIMIT (50 µg/m<sup>3</sup>) BUT ABOVE THE ACTION LEVEL (30 µg/m<sup>3</sup>)**

- Conduct periodic air monitoring.
- Institute a housekeeping and personal hygiene program.
- Provide washing and lavatory facilities.
- Conduct medical surveillance (e.g., periodic blood lead testing).
- Train employees via a 6-hour Maryland-approved course.
- Maintain records.

#### **ANY LEVEL OF AIRBORNE LEAD**

- Institute a housekeeping and personal hygiene program.
- Provide washing and lavatory facilities.
- Inform employees of the requirements of these regulations.

**END OF SECTION 02090**

## SECTION 02091

### LEAD-CONTAINING PAINT REMOVAL

#### PART 1 GENERAL

##### 1.01 DESCRIPTION OF WORK

- A. This specification addresses the removal (including clean-up) and disposal of lead-containing paint that is not being removed to reduce or eliminate lead hazards. All work being performed to reduce or eliminate lead hazards must be completed in accordance with Section 02090.
- B. Areas where lead-based paint is to be disturbed by torch cutting are required to have the paint removed in accordance with Section 02090.
- C. The Contractor shall demolish all items on the project drawings as noted in accordance with this section.
- D. The Contractor shall perform all work in compliance with the Occupational Safety and Health Administration (OSHA) and State of Maryland regulations. This specification does not attempt to implement the OSHA and State of Maryland regulations for Contractors, but rather focuses on the prevention of lead contamination of employees, visitors, and the environment.

##### 1.02 RELATED DOCUMENTS

- A. Lead-based and lead-containing paint have been identified on various surfaces as presented in the following reports:
  - “Hazmat Survey – FCPS Bid #16-MISC-3, Rock Creek School, Frederick, MD” prepared by SaLUT, Inc. and Dated December 4, 2017.
  - “Demolition Hazardous Materials Survey, Waverley Elementary School, Frederick, Maryland” prepared by AERO EH&S, Inc. and dated January 18, 2019.

##### 1.03 DEFINITIONS

- A. Action Level: Employee exposure, without regard to use of respirators, to an airborne concentration of lead of 30 micrograms per cubic meter of air ( $\mu\text{g}/\text{m}^3$ ) averaged over an 8-hour period.
- B. Air Monitoring: Sampling of lead concentrations within the lead control area

and inside the physical boundaries which is representative of the airborne lead concentrations which may reach the breathing zone of personnel potentially exposed to lead.

- C. Certified Industrial Hygienist (CIH): As used in this section, refers to an industrial hygienist retained by the Contractor who is certified by the American Board of Industrial Hygiene in comprehensive practice.
- D. Eight-hour Time-Weighted Average (TWA): Airborne concentration of lead to which an employee is exposed averaged over an 8-hour workday.
- E. HEPA Filter Equipment: High-efficiency particulate air filtered vacuuming equipment with a filter system capable of collecting and retaining lead-containing dust. HEPA filters have a 99.97 percent efficiency for retaining particles of 0.3 micron or greater in size.
- F. Lead: Metallic lead, inorganic lead compounds, and organic lead soaps. Excluded from this definition are other organic lead compounds.
- G. Lead Control Area: An area physically roped or partitioned off around a lead-based paint removal area which limits unauthorized entry of personnel.
- H. Permissible Exposure Limit (PEL): Fifty micrograms per cubic meter of air ( $\mu\text{g}/\text{m}^3$ ) as an 8-hour time weighted average as determined by OSHA.

#### 1.04 REFERENCES

- A. The Contractor shall comply with the following regulations:
  - 1. Code of Federal Regulations:
    - a. US Department of Labor, Occupational Safety and Health Administration, Lead Exposure on Construction, 29 CFR 1926.62.
    - b. US Environmental Protection Agency, Resource Recovery and Conservation (RCRA), 40 CFR 260 through 265.
    - c. EPA 40 CFR 745, Subpart L – Lead-Based Paint Activities
  - 2. State of Maryland:
    - a. COMAR

## 1.05 SUBMITTALS

- A. The Contractor shall submit to the Owner's Representative the following:
  - 1. Starting and estimated completion dates of the work.
  - 2. Job-specific lead-based paint removal techniques to be used.
  - 3. Copies of certificates of training for each employee working.
  - 4. Product data (e.g., manufacturer's technical literature, brochures, material safety data sheets [MSDS], etc.) for each chemical product proposed for use.
  - 5. Name and location of the waste disposal site and, following disposal, a copy of the completed manifest, signed and dated by the transporter.
  - 6. Procedures for air monitoring including the name and address of the Contractor to perform air monitoring, a listing and qualifications of all personnel assigned to the project, and a detailed description of the procedures for air monitoring to be used for this project.

## 1.06 CONTRACTOR EMPLOYEE PROTECTION

- A. The Contractor shall ensure that its employees are protected in accordance with all applicable Federal, State, and local regulations, in particular the US Department of Labor, Occupational Safety and Health Administration "Lead Exposure in Construction", 29 CFR 1926.62 and State of Maryland regulations.

## PART 2 PRODUCTS

### 2.01 AIR MONITORING

- A. Monitoring of airborne concentrations of lead shall be in accordance with 29 CFR 1926.62 and shall be performed by or under the direction of a qualified Safety Officer.

## PART 3 EXECUTION

- 3.01 Airborne lead levels above the permissible exposure limit (50  $\mu\text{g}/\text{m}^3$ )
- A. Conduct periodic air monitoring.
  - B. Use feasible engineering and work practice controls.
  - C. Provide respirators, protective clothing, and equipment.
  - D. Institute a housekeeping and personal hygiene program.
  - E. Provide area for eating and drinking.
  - F. Provide washing and lavatory facilities.
  - G. Conduct medical surveillance (e.g., periodic blood lead testing).
  - H. Train employees via a 6-hour Maryland-approved course.
  - I. Post warning signs.
  - J. Maintain records.
- 3.02 Airborne lead levels below the permissible exposure limit (50  $\mu\text{g}/\text{m}^3$ ) but above the action level (30  $\mu\text{g}/\text{m}^3$ )
- A. Conduct periodic air monitoring.
  - B. Institute a housekeeping and personal hygiene program.
  - C. Provide washing and lavatory facilities.
  - D. Conduct medical surveillance (e.g., periodic blood lead testing).
  - E. Train employees via a 6-hour Maryland-approved course.
  - F. Maintain records.
- 3.03 Any level of airborne lead.
- A. Institute a housekeeping and personal hygiene program.
  - B. Provide washing and lavatory facilities.
  - C. Inform employees of the requirements of these regulations.

END OF SECTION 02091

## **SECTION 05 5000 - METAL FABRICATIONS**

### **PART 1 GENERAL**

#### **1.1 SECTION INCLUDES**

- A. Shop fabricated steel and aluminum items.
- B. Prefabricated ladders and ship ladders.

#### **1.2 REFERENCE STANDARDS**

- A. 29 CFR 1910.28 - Duty to have Fall Protection and Falling Object Protection.
- B. 29 CFR 1910.29 - Fall Protection Systems and Falling Object Protection - Criteria and Practices.
- C. ANSI A14.3 - American National Standard for Ladders -- Fixed -- Safety Requirements.
- D. ANSI/ASSP Z359.16 - Safety Requirements for Climbing Ladder Fall Arrest Systems.
- E. ASTM A36/A36M - Standard Specification for Carbon Structural Steel.
- F. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.
- G. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
- H. ASTM A283/A283M - Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates.
- I. ASTM A501/A501M - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing.
- J. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
- K. ASTM B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate (Metric).
- L. ASTM B211 - Standard Specification for Aluminum and Aluminum-Alloy Rolled or Cold Finished Bar, Rod, and Wire.
- M. ASTM B211M - Standard Specification for Aluminum and Aluminum-Alloy Rolled or Cold-Finished Bar, Rod, and Wire (Metric).
- N. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
- O. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric).
- P. ASTM F3125/F3125M - Standard Specification for High Strength Structural Bolts, Steel and Alloy Steel, Heat Treated, 120 ksi (830 MPa) and 150 ksi (1040 MPa) Minimum Tensile Strength, Inch and Metric Dimensions.

- Q. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination.
- R. AWS D1.1/D1.1M - Structural Welding Code - Steel.
- S. AWS D1.2/D1.2M - Structural Welding Code - Aluminum.
- T. IAS AC172 - Accreditation Criteria for Fabricator Inspection Programs for Structural Steel.
- U. SSPC-Paint 15 - Steel Joist Shop Primer/Metal Building Primer.
- V. SSPC-Paint 20 - Zinc-Rich Primers (Type I, "Inorganic," and Type II, "Organic").
- W. SSPC-SP 2 - Hand Tool Cleaning.

### 1.3 SUBMITTALS

- A. Product Data: Provide manufacturer's data sheets on each ladder safety system product to be used, including installation instructions.
- B. **LEED Submittals: Comply with Section 01 3329 - Sustainable Design Requirements - LEED v4/v4.1.**
  - 1. **MR 3: BPDO - Sourcing of Raw Materials**
    - a. **For recycled content steel: Documentation indicating percentages by weight of pre-consumer and post-consumer recycled content. Include material cost value.**
- C. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable.
  - 1. Indicate welded connections using standard AWS A2.4 welding symbols. Indicate net weld lengths.
  - 2. Design data: Submit drawings and supporting calculations, signed and sealed by a qualified professional structural engineer.
    - a. Include the following, as applicable:
      - 1) Design criteria.
      - 2) Engineering analysis depicting stresses and deflections.
      - 3) Member sizes and gages.
      - 4) Details of connections.
      - 5) Support reactions.
      - 6) Bracing requirements.
- D. Certificate: Provide documentation that ladder safety system products of this section meet or exceed cited 1, 1, 1, and 1 requirements.
- E. Welders' Certificates: Submit certification for welders employed on the project, verifying AWS qualification within the previous 12 months.
- F. Designer's Qualification Statement.
- G. Fabricator's Qualification Statement: Provide documentation showing steel fabricator is accredited under IAS AC172.

## 1.4 QUALITY ASSURANCE

- A. Design metal fabrications under direct supervision of a Professional Structural Engineer experienced in design of this work and licensed in the State in which the Project is located.

## PART 2 PRODUCTS

### 2.1 MATERIALS - STEEL

- A. Steel Sections: ASTM A36/A36M.
- B. Steel Tubing: ASTM A501/A501M hot-formed structural tubing.
- C. Plates: ASTM A283/A283M.
- D. Pipe: ASTM A53/A53M, Grade B Schedule 40, black finish.
- E. Bolts, Nuts, and Washers: ASTM F3125/F3125M, Type 1, plain.
- F. Welding Materials: AWS D1.1/D1.1M; type required for materials being welded.
- G. Shop and Touch-Up Primer: SSPC-Paint 15, complying with VOC limitations of authorities having jurisdiction.
- H. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, Type I - Inorganic, complying with VOC limitations of authorities having jurisdiction.
- I. **Sustainable Design Requirements:**
  - 1. **Recycled Content: Provide steel with minimum 25 percent total recycled content including at least 10 percent post-consumer recycled content.**

### 2.2 MATERIALS - ALUMINUM

- A. Extruded Aluminum: ASTM B221 (ASTM B221M), 6063 alloy, T6 temper.
- B. Sheet Aluminum: ASTM B209 (ASTM B209M), 5052 alloy, H32 or H22 temper.
- C. Aluminum-Alloy Bars: ASTM B211 (ASTM B211M), 6061 alloy, T6 temper.
- D. Bolts, Nuts, and Washers: Stainless steel.
- E. Welding Materials: AWS D1.2/D1.2M; type required for materials being welded.

### 2.3 FABRICATION

- A. Fit and shop assemble items in largest practical sections, for delivery to site.
- B. Fabricate items with joints tightly fitted and secured.
- C. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.

- D. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where specifically noted otherwise.
- E. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

## 2.4 FABRICATED ITEMS

- A. Bollards: Steel pipe, concrete filled, crowned cap, as detailed; prime paint finish.
  - 1. Industrial type: As shown on the drawings.
  - 2. Architectural type: Provide decorative plastic sleeve.
    - a. Manufacturers:
      - 1) IdealShield; Skyline: [www.idealsheild.com/](http://www.idealsheild.com/).
      - 2) Innoplast; Black Slant Top: [www.innoplast.com/](http://www.innoplast.com/).
    - b. Color: As selected by Architect from manufacturers custom range.
- B. Ledge Angles, Shelf Angles, Channels, and Plates Not Attached to Structural Framing: For support of metal decking; galvanized finish.
- C. Lintels: As detailed; prime paint finish.
- D. Door Frames for Overhead Door Openings: Channel sections; galvanized finish.
- E. Recessed Mat Frames : As detailed; aluminum, mill finish.
- F. Elevator Hoistway Divider Beams: Beam sections; prime paint finish.
- G. Elevator Threshold Support Members: Angle sections; prime paint finish.
- H. Support Members for Curtainwall and Storefront Framing: Galvanized finish.
- I. Support Members for Platform/Stage Equipment: prime paint finish.

## 2.5 PREFABRICATED LADDERS

- A. Prefabricated Ladder: Welded metal unit complying with ANSI A14.3; factory fabricated to greatest degree practical and in the largest components possible.
  - 1. Components: Manufacturer's standard rails, rungs, treads, handrails. returns, platforms and safety devices complying with the requirements of the MATERIALS article of this section.
  - 2. Materials: Aluminum; 2 (1), 6063 alloy, T52 temper.
  - 3. Finish: Mill finish aluminum.
  - 4. Manufacturers:
    - a. Industrial Ladder & Scaffolding, Inc.; ALACCRH, ALACCB: [www.anyladder.com/#sle](http://www.anyladder.com/#sle).
    - b. O'Keeffe's Inc; Model 500, Model 504: [www.okeeffes.com/#sle](http://www.okeeffes.com/#sle).
    - c. Alaco Ladder Company; Model 560, Model 561, Model 561-E.

- B. Accessories:
  - 1. Prefabricated equipment rail: 18 gauge, galvanized steel, internal reinforcement and continuously welded corner seams.
  - 2. Application: For base connections of ladders over 36" tall.
  - 3. Manufacturers:

- a. Hart & Cooley, Inc.; ER-4A/ER-4B: [www.rpscurbs.com/](http://www.rpscurbs.com/) or approved equal.

## 2.6 FINISHES - STEEL

- A. Prime paint steel items.
  - 1. Exceptions: Galvanize items to be embedded in concrete, items to be embedded in masonry, and items specified for Architecturally-Exposed Structural Steel (AESS) finish.
- B. Prepare surfaces to be primed in accordance with SSPC-SP2.
- C. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.
- D. Prime Painting: One coat.
- E. Galvanizing of Non-structural Items: Galvanize after fabrication to ASTM A123/A123M requirements.

## 2.7 FINISHES - ALUMINUM

- A. Apply one coat of bituminous paint to concealed aluminum surfaces in contact with cementitious or dissimilar materials.

## 2.8 FABRICATION TOLERANCES

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

# PART 3 EXECUTION

## 3.1 EXAMINATION

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

## 3.2 PREPARATION

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

## 3.3 INSTALLATION

- A. Install items plumb and level, accurately fitted, free from distortion or defects.
- B. Provide for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.

- C. Perform field welding in accordance with AWS D1.1/D1.1M.
- D. Obtain approval prior to site cutting or making adjustments not scheduled.
- E. After erection, prime welds, abrasions, and surfaces not shop primed or galvanized, except surfaces to be in contact with concrete.

#### 3.4 TOLERANCES

- A. Maximum Variation From Plumb: 1/4 inch per story, non-cumulative.
- B. Maximum Offset From True Alignment: 1/4 inch.
- C. Maximum Out-of-Position: 1/4 inch.

#### **END OF SECTION**

## SECTION 05 5100 - METAL STAIRS

### PART 1 GENERAL

#### 1.1 SECTION INCLUDES

- A. Stairs with concrete treads.
- B. Stairs with grating treads.**
- C. Structural steel stair framing and supports.
- D. Prefabricated stair treads and nosings.

#### 1.2 REFERENCE STANDARDS

- A. AISC 201 - AISC Certification Program for Structural Steel Fabricators, Standard for Steel Building Structures.
- B. ASTM A36/A36M - Standard Specification for Carbon Structural Steel.
- C. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
- D. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable.
- E. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength.
- F. ASTM F3125/F3125M - Standard Specification for High Strength Structural Bolts, Steel and Alloy Steel, Heat Treated, 120 ksi (830 MPa) and 150 ksi (1040 MPa) Minimum Tensile Strength, Inch and Metric Dimensions.
- G. AWS D1.1/D1.1M - Structural Welding Code - Steel.
- H. NAAMM AMP 510 - Metal Stairs Manual.**
- I. NAAMM MBG 531 - Metal Bar Grating Manual.**
- J. NAAMM MBG 532 - Heavy Duty Metal Bar Grating Manual.**
- K. SSPC-Paint 15 - Steel Joist Shop Primer/Metal Building Primer.
- L. SSPC-SP 2 - Hand Tool Cleaning.

#### 1.3 SUBMITTALS

- A. **LEED Submittals: Comply with Section 01 3329 - Sustainable Design Reporting - LEED v4/v4.1.**
  - 1. **MR Credit 3: BDPO - Sourcing of Raw Materials**

- a. **For recycled content steel: Documentation indicating percentages by weight of pre-consumer and post-consumer recycled content. Include material cost value.**
- B. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories.
  - 1. Indicate welded connections using standard AWS A2.4 welding symbols. Indicate net weld lengths.
  - 2. Include the design engineer's seal and signature on each sheet of shop drawings.
- C. Design Data: As required by authorities having jurisdiction.
- D. Welders' Certificates.
- E. Designer's Qualification Statement.
- F. Fabricator's Qualification Statement: Provide documentation showing steel fabricator is certified under AISC 201.

#### 1.4 QUALITY ASSURANCE

- A. Structural Designer Qualifications: Professional Structural Engineer experienced in design of this work and licensed in the State in which the Project is located, or personnel under direct supervision of such an engineer.
- B. Welder Qualifications: Show certification of welders employed on the Work, verifying AWS qualification within the previous 12 months.
- C. Fabricator Qualifications:
  - 1. A qualified steel fabricator that is certified by the American Institute for Steel Construction (AISC) under AISC 201.

## PART 2 PRODUCTS

### 2.1 METAL STAIRS - GENERAL

- A. Metal Stairs: Provide stairs of the design specified, complete with landing platforms, vertical and horizontal supports, railings, and guards, fabricated accurately for anchorage to each other and to building structure.
  - 1. Regulatory Requirements: Provide stairs and railings complying with the most stringent requirements of local, state, and federal regulations; where requirements of the contract documents exceed those of regulations, comply with the contract documents.
  - 2. Handrails: Comply with applicable accessibility requirements of ADA Standards.
  - 3. Structural Design: Provide complete stair and railing assemblies complying with the applicable local code.
  - 4. Dimensions: As indicated on drawings.
  - 5. Shop assemble components; disassemble into largest practical sections suitable for transport and access to site.
  - 6. No sharp or rough areas on exposed travel surfaces and surfaces accessible to touch.
  - 7. Separate dissimilar metals using paint or permanent tape.
- B. Metal Jointing and Finish Quality Levels:

1. For stairs open to adjacent spaces and not enclosed by surrounding walls, comply with the requirements indicated below and in Section 05 1213.
  2. Architectural: All joints as inconspicuous as possible, whether welded or mechanical.
    - a. Welded Joints: Continuously welded and ground smooth and flush.
    - b. Mechanical Joints: Butted tight, flush, and hairline; concealed fastenings only.
    - c. Exposed Edges and Corners: Eased to small uniform radius.
    - d. Metal Surfaces to be Painted: Sanded or ground smooth, suitable for highest quality gloss finish.
  3. Service: Exposed joints tight with face surfaces aligned; underside of stair not covered by soffit is not considered exposed to view.
    - a. Welded Joints: Welded on back side wherever possible.
    - b. Welds Exposed to View: Ground smooth; not required to be flush.
    - c. Bolts Exposed to View: Countersunk flat or oval head bolts; no exposed nuts or screw threads.
    - d. Metal Surfaces to be Painted: Sanded smooth, suitable for satin or matte finish.
  4. Industrial: All joints made neatly.
    - a. Welded Joints: Welded on back side wherever possible.
    - b. Welds Exposed to Touch: Ground smooth.
    - c. Bolts Exposed to Touch in Travel Area: No nuts or screw threads exposed to touch.
- C. Fasteners: Same material or compatible with materials being fastened; type consistent with design and specified quality level.
- D. Anchors and Related Components: Same material and finish as item to be anchored, except where specifically indicated otherwise; provide all anchors and fasteners required.
- E. **Sustainable Design Requirements:**
1. **Recycled Content: Provide steel with minimum 25 percent total recycled content including at least 10 percent post-consumer recycled content.**

## 2.2 METAL STAIRS WITH CONCRETE TREADS

- A. Jointing and Finish Quality Level: Architectural, as defined above.
1. Service Quality Jointing and Finishing for stairs used by maintenance staff and off limits from the general public; architectural quality at all other locations.
- B. Risers: Closed.
- C. Treads: Metal pan with field-installed concrete fill.
1. Concrete Depth: 1-1/2 inches, minimum.
  2. Tread Pan Material: Steel sheet.
  3. Tread Pan Thickness: As required by design; 14 gage, 0.075 inch minimum.
  4. Pan Anchorage to Stringers: Continuously welded, from top or bottom.
  5. Concrete Reinforcement: None.
  6. Concrete Finish: For fluid-applied resinous flooring.
- D. Risers: Same material and thickness as tread pans.
1. Riser/Nosing Profile: Sloped riser with rounded nosing of minimum radius.
  2. Nosing Depth: Not more than 1-1/2 inch overhang.
  3. Nosing Return: Flush with top of concrete fill, not more than 1/2 inch wide.
- E. Stringers: Rolled steel channels.
1. Stringer Depth: 10 inches.
  2. End Closure: Sheet steel of same thickness as risers welded across ends.

- F. Landings: Similar construction, using corrugated steel decking, supported and reinforced as required to achieve design load capacity.
- G. Finish: Shop- or factory-prime painted.
- H. Under Side of Stair: Exposed to view, to be finished same as specified for other exposed to view surfaces.

## 2.3 METAL STAIRS WITH GRATING TREADS

- A. Jointing and Finish Quality Level: Industrial, as defined above.
- B. Risers: Open.
- C. Treads: Steel bar grating.
  - 1. Grating Type: Welded.
  - 2. Bearing Bar Depth: 3/4 inch, minimum.
  - 3. Top Surface: Standard.
  - 4. Nosing: Checkered plate.
  - 5. Nosing Width: 1-1/4 inch, minimum.
  - 6. Anchorage to Stringers: End plates welded to grating, bolted to stringers.
- D. Stringers: Rolled steel channels.
  - 1. Stringer Depth: 10 inches.
  - 2. End Closure: Sheet steel, 14 gage, 0.075 inch minimum; welded across ends.
- E. Landings: Same construction as treads, supported and reinforced as required to achieve design load capacity.
- F. Finish: Shop- or factory-prime painted.

## 2.4 HANDRAILS AND GUARDS

- A. Wall-Mounted Rails: As specified in Section 05 5213.
- B. Guards: Pipe railings as specified in Section 05 5213.

## 2.5 MATERIALS

- A. **Recycled Content: Provide steel with 25 percent, minimum, total recycled content including at least 10 percent post-consumer recycled content.**
- B. Steel Sections: ASTM A 36/A 36M.
- C. Ungalvanized Steel Sheet: Hot- or cold-rolled, except use cold-rolled where finished work will be exposed to view.
  - 1. Hot-Rolled Steel Sheet: ASTM A1011/A1011M, Designation CS (commercial steel).
  - 2. Cold-Rolled Steel Sheet: ASTM A1008/A1008M, Designation CS (commercial steel).
- D. Gratings: Bar gratings complying with NAAMM MBG 531 or NAAMM MBG 532, whichever applies based on bar sizes.
- E. Concrete Fill: Type specified in Section 03 3000.

## 2.6 ACCESSORIES

- A. Factory Fabricated Stair Tread and Nosing:
  - 1. Materials: Extruded aluminum, alloy type 6063-T5, mill finish.
    - a. Tread Type: Ribbed bar.
    - b. Nosing Types: Angled long nose for sloped stairs.
  - 2. Manufacturers:
    - a. Nystrom, Inc; Ribbed Bar Nosing (STSB-A1.875D): [www.nystrom.com/#sle](http://www.nystrom.com/#sle).
    - b. Babcock-Davis; Ribbed Bar Abrasive Nosing (BSTSB-A1.875D): [www.babcockdavis.com/](http://www.babcockdavis.com/).
    - c. Balco; R-315 – Ribbed Abrasive: [www.balcousa.com/](http://www.balcousa.com/).
- B. Steel Bolts, Nuts, and Washers: ASTM F3125/F3125M, Type 1, and galvanized to ASTM A153/A153M where connecting galvanized components.
- C. Welding Materials: AWS D1.1/D1.1M; type required for materials being welded.
- D. Shop and Touch-Up Primer: SSPC-Paint 15, complying with VOC limitations of authorities having jurisdiction.

## 2.7 SHOP FINISHING

- A. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.
- B. Do not prime surfaces in direct contact with concrete or where field welding is required.
- C. Prime Painting: Use specified shop- and touch-up primer.
  - 1. Preparation of Steel: In accordance with SSPC-SP 2, Hand Tool Cleaning.
  - 2. Number of Coats: One.

## PART 3 EXECUTION

### 3.1 EXAMINATION

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

### 3.2 PREPARATION

- A. When field welding is required, clean and strip primed steel items to bare metal.
- B. Supply items required to be cast into concrete and embedded in masonry with setting templates.

### 3.3 INSTALLATION

- A. Install components plumb and level, accurately fitted, free from distortion or defects.
- B. Provide anchors, plates, angles, hangers, and struts required for connecting stairs to structure.
- C. Allow for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.

- D. Provide welded field joints where specifically indicated on drawings. Perform field welding in accordance with AWS D1.1/D1.1M.
- E. Other field joints may be either welded or bolted provided the result complies with the limitations specified for jointing quality levels.
- F. Obtain approval prior to site cutting or creating adjustments not scheduled.
- G. After erection, prime welds, abrasions, and surfaces not shop primed or galvanized, except surfaces to be in contact with concrete.

### 3.4 TOLERANCES

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

### END OF SECTION

## SECTION 10 5113 - METAL LOCKERS

### PART 1 GENERAL

#### 1.1 SECTION INCLUDES

- A. Metal lockers.
- B. Locker benches.

#### 1.2 REFERENCE STANDARDS

- A. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design.
- B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- C. ICC A117.1 - Accessible and Usable Buildings and Facilities.

#### 1.3 SUBMITTALS

- A. Product Data: Manufacturer's published data on locker construction, sizes and accessories.
- B. Shop Drawings: Indicate locker plan layout, numbering plan.
- C. Samples: Submit two samples 2 by 2 inches in size showing color and finish of metal locker material.

#### 1.4 DELIVERY, STORAGE, AND HANDLING

- A. Protect locker finish and adjacent surfaces from damage.

### PART 2 PRODUCTS

#### 2.1 MANUFACTURERS

- A. Metal Lockers:
  - 1. Art Metal Products: [www.artmetalproducts.com/#sle](http://www.artmetalproducts.com/#sle).
  - 2. Lockers MFG: [www.lockersmfg.com/#sle](http://www.lockersmfg.com/#sle).
  - 3. Penco Products, Inc: [www.pencoproducts.com/#sle](http://www.pencoproducts.com/#sle).

#### 2.2 LOCKER APPLICATIONS

- A. Student Lockers: Metal lockers, free-standing with matching closed base.
  - 1. Configuration: Single and double-tier where indicated on the drawings.
  - 2. Fittings: Size and configuration as indicated on drawings.
    - a. Hat shelf.
    - b. Hooks: One double prong.
  - 3. Ventilation: Louvers at top and bottom of door panel.
  - 4. Locking: Padlock hasps, for padlocks provided by Owner.
  - 5. Provide sloped top.

- B. Staff Lockers: Metal lockers, free-standing with matching closed base.
  - 1. Width: 12 inches.
  - 2. Depth: 12 inches.
  - 3. Height: 72 inches.
  - 4. Configuration: Single tier.
  - 5. Fittings: Size and configuration as indicated on drawings.
    - a. Hat shelf.
    - b. Single shoe shelf.
    - c. Hooks: One double prong.
  - 6. Ventilation: Louvers at top and bottom of door panel.
  - 7. Locking: Padlock hasps, for padlocks provided by Owner.
  - 8. Provide sloped top.
- C. Locker Benches: Stationary type; bench top of laminated birch; painted steel pedestals.
  - 1. Accessibility: Comply with ICC A117.1 and ADA Standards.

## 2.3 METAL LOCKERS

- A. Accessibility: Comply with ICC A117.1 and ADA Standards.
- B. Lockers: Factory assembled, made of formed sheet steel, ASTM A653/A653M SS Grade 33/230, with G60/Z180 coating, stretcher leveled; metal edges finished smooth without burrs; baked enamel finished inside and out.
  - 1. Where ends or sides are exposed, provide flush panel closures.
  - 2. Provide filler strips where indicated, securely attached to lockers.
  - 3. Color: To be selected by Architect.
- C. Locker Body: Formed and flanged; with steel stiffener ribs; electric spot welded.
  - 1. Body and Shelves: 24 gage, 0.0239 inch.
  - 2. Base: 20 gage, 0.036 inch.
  - 3. Metal Base Height: 4 inch.
- D. Frames: Formed channel shape, welded and ground flush, welded to body, resilient gaskets and latching for quiet operation.
  - 1. Door Frame: 16 gage, 0.0598 inch, minimum.
- E. Doors: Hollow double pan, sandwich construction, 1-3/16 inch thick; welded construction, channel reinforced top and bottom with intermediate stiffener ribs, grind and finish edges smooth.
  - 1. Door Outer Face: 18 gage, 0.0478 inch, minimum.
  - 2. Door Inner Face: 20 gage, 0.0359 inch, minimum.
  - 3. Form recess for operating handle and locking device.
  - 4. Multi-point Latch: 2 latch hooks for doors under 48"; 3 latch hooks for doors over 48".
    - a. Spring-activated, nylon slide type; enclosed within the lock channel.
    - b. Finger lift control type; nylon covered steel: 14 gage, 0.078125" inch, minimum.
- F. Hinges: Heavy duty, 7-knuckle type; two for doors under 42 inches high; three for doors over 42 inches high.
- G. Sloped Top: 20 gage, 0.0359 inch, with closed ends.
- H. Trim: 20 gage, 0.0359 inch.

- I. Coat Hooks: Stainless steel or zinc-plated steel.
- J. Number Plates: Provide rectangular shaped aluminum plates. Form numbers 1 inch high of block font style with ADA designation, in contrasting color.
- K. Locks: Padlocks to be provided by Owner.

## **PART 3 EXECUTION**

### **3.1 EXAMINATION**

- A. Verify that prepared bases are in correct position and configuration.
- B. Verify bases and embedded anchors are properly sized.

### **3.2 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.
- B. Place and secure on prepared base.
- C. Install lockers plumb and square.
- D. Secure lockers with anchor devices to suit substrate materials. Minimum Pullout Force: 100 pounds.
  - 1. Attach where indicated by manufacturer and at top to prevent tipping.
- E. Bolt adjoining locker units together to provide rigid installation.
- F. Install end panels, filler panels, and sloped tops.
- G. Install fittings if not factory installed.
- H. Replace components that do not operate smoothly.

### **3.3 CLEANING**

- A. Clean locker interiors and exterior surfaces.

## **END OF SECTION**

## SECTION 11 3013 - RESIDENTIAL APPLIANCES

### PART 1 GENERAL

#### 1.1 SECTION INCLUDES

- A. Kitchen appliances.
- B. Laundry appliances.

#### 1.2 REFERENCE STANDARDS

- A. UL (DIR) - Online Certifications Directory.

#### 1.3 SUBMITTALS

- A. Product Data: Manufacturer's data indicating dimensions, capacity, and operating features of each piece of residential equipment specified.
- B. Copies of Warranties: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

#### 1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.
- B. Electric Appliances: Listed and labeled by UL (DIR) and complying with NEMA Standards (National Electrical Manufacturers Association).

#### 1.5 WARRANTY

- A. Provide five (5) year manufacturer warranty on refrigeration system of refrigerators.
- B. Provide ten (10) year manufacturer warranty on magnetron tube of microwave ovens.

### PART 2 PRODUCTS

#### 2.1 KITCHEN APPLIANCES

- A. **Provide Equipment Eligible for Energy Star Rating: Energy Star Rated.**
- B. **Provide all units from a single manufacturer to greatest extent possible, and with uniform color, unless indicated otherwise.**
- C. Refrigerator: Free-standing, top-mounted freezer, and frost-free.
  - 1. Capacity: Total minimum storage of 18 cubic ft; minimum 15 percent freezer capacity.
  - 2. Energy Usage: Minimum 20 percent more energy efficient than energy efficiency standards set by U.S. Department of Energy (DOE).
  - 3. Features: Include glass shelves and automatic icemaker.
    - a. Icemaker: Provide documentation demonstrating air-cooled or closed-loop cooling system.

4. Exterior Finish: Porcelain enameled steel, color white or black.
5. Manufacturers:
  - a. Frigidaire Home Products; FFHT1821TW: [www.frigidaire.com/#sle](http://www.frigidaire.com/#sle).
  - b. Whirlpool Corp; WRT138FZDW: [www.whirlpool.com/#sle](http://www.whirlpool.com/#sle).

- D. Refrigerator, Medical: Free-standing, undercounter, and frost-free.
  1. Capacity: Total minimum storage of 10.1 cubic ft.
  2. Energy Usage: Energy Star Qualified, minimum.
  3. Exterior Finish: Porcelain enameled steel, color white.
  4. Manufacturers:
    - a. Accucold; FFAR10LOCKER: [www.accucold.com](http://www.accucold.com).
    - b. Substitutions: Not permitted.

- E. Ice Maker, Medical: Free-standing, undercounter.
  1. Capacity: 25 pounds.
  2. Width: 15 inches.
  3. Manufacturers:
    - a. Accucold; BIM44GADA: [www.accucold.com](http://www.accucold.com).
    - b. Whirlpool Corp; WUI75X15HW: [www.whirlpool.com](http://www.whirlpool.com).

- F. Range: Electric, free-standing, with glass-ceramic cooktop.
  1. Size: 30 inches wide.
  2. Oven: Self-cleaning with electronic ignition.
  3. Elements: Four (4).
  4. Controls: Solid state electronic.
  5. Features: Include storage drawer, oven door window, and oven light.
  6. Exterior Finish: Porcelain enameled steel, color white or black.
  7. Manufacturers:
    - a. Frigidaire Home Products; FFEH3054UW: [www.frigidaire.com/#sle](http://www.frigidaire.com/#sle).
    - b. Whirlpool Corp; WEE510S0FW: [www.whirlpool.com/#sle](http://www.whirlpool.com/#sle).

- G. Cooking Exhaust: Range hood.
  1. Size: 30 inches wide.
  2. Fan: Two-speed, 250 cfm
  3. Exhaust: Recirculating.
  4. Features: Include cooktop light and removable grease filter.
  5. Exterior Finish: Painted steel, color white or black.
  6. Manufacturers:
    - a. Frigidaire Home Products; FHWC3025MW: [www.frigidaire.com/#sle](http://www.frigidaire.com/#sle).
    - b. Whirlpool Corp; WVU17UC0JW: [www.whirlpool.com/#sle](http://www.whirlpool.com/#sle).

- H. Microwave: Countertop.
  1. Capacity: 1.5 cubic ft.
  2. Power: 1200 watts.
  3. Features: Include turntable.
  4. Exterior Finish: White or Black.
  5. Manufacturers:
    - a. Frigidaire Home Products; FFCE1439LB: [www.frigidaire.com/#sle](http://www.frigidaire.com/#sle).
    - b. Whirlpool Corp; WMC30516HW: [www.whirlpool.com/#sle](http://www.whirlpool.com/#sle).

## 2.2 LAUNDRY APPLIANCES

- A. Provide Equipment Eligible for Energy Star Rating: Energy Star Rated.

**B. Clothes Washer: Front-loading.**

1. **Size: Full-size.**
2. Controls: Solid state electronic.
3. Cycles: Include normal.
4. Motor Speed: Single-speed.
5. Features: Include optional second rinse, bleach dispenser, fabric softener dispenser, self-cleaning lint filter, sound insulation, and end of cycle signal.
6. Finish: Painted steel, color white.
7. **Manufacturers:**
  - a. GE Appliances; GFW430SSMWW: [www.geappliances.com/#sle](http://www.geappliances.com/#sle).
  - b. Whirlpool Corp; WFW560CHW: [www.whirlpool.com/#sle](http://www.whirlpool.com/#sle).

**C. Clothes Dryer: Electric, stationary.**

1. **Size: Full-size.**
2. Controls: Solid state electronic, with electronic moisture-sensing dry control.
3. **Temperature Selections: Three.**
4. Cycles: Include normal, permanent press, knit/delicate, and air only.
5. Features: Include interior light, reversible door, sound insulation, and end of cycle signal.
6. Finish: Painted steel, color white.
7. **Manufacturers:**
  - a. GE Appliances; GFD43ESSMWW: [www.geappliances.com/#sle](http://www.geappliances.com/#sle).
  - b. Whirlpool Corp; WED560LHW: [www.whirlpool.com/#sle](http://www.whirlpool.com/#sle).

**PART 3 EXECUTION****3.1 EXAMINATION**

- A. Verify utility rough-ins are provided and correctly located.

**3.2 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.
- B. Anchor built-in equipment in place.

**3.3 ADJUSTING**

- A. Adjust equipment to provide efficient operation.

**3.4 CLEANING**

- A. Remove packing materials from equipment and properly discard.
- B. Wash and clean equipment.

**END OF SECTION**

## **SECTION 11 6623 - GYMNASIUM EQUIPMENT**

### **PART 1 GENERAL**

#### **1.1 SECTION INCLUDES**

- A. Basketball backboards, goals, and support framing.
- B. Gymnasium exercise equipment.
- C. Floor sleeves for net and goal posts.
- D. Wall mounted protection pads.
- E. Gym divider curtains.
- F. Volleyball nets and posts.

#### **1.2 REFERENCE STANDARDS**

- A. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
- B. AWS D1.1/D1.1M - Structural Welding Code - Steel.
- C. NFPA 70 - National Electrical Code.
- D. NFPA 101 - Life Safety Code.

#### **1.3 ADMINISTRATIVE REQUIREMENTS**

- A. Large Components: Ensure that large components can be moved into final position without damage to other construction.
- B. Electrically Operated Equipment: Coordinate location and electrical characteristics of service connection.

#### **1.4 SUBMITTALS**

- A. Product Data: Provide manufacturer's data showing configuration, sizes, materials, finishes, hardware, and accessories; include:
  - 1. Electrical characteristics and connection locations.
  - 2. Fire rating certifications.
  - 3. Structural steel welder certifications.
  - 4. Manufacturer's installation instructions.
- B. Erection Drawings: Detailed dimensional requirements for proper location of equipment.
- C. Samples: Submit samples of wall pad coverings in manufacturer's available range of colors and textures.
- D. Operating and maintenance data, for each operating equipment item.

- E. Warranty: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

## 1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of the type specified with minimum three years of documented experience.

## 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to project site in manufacturer's original packaging with factory original labels attached.
- B. Store products indoors and elevated above floor; prevent warping, twisting, or sagging.
- C. Store products in accordance with manufacturer's instructions; protect from extremes of weather, temperature, moisture, and other damage.

# PART 2 PRODUCTS

## 2.1 MANUFACTURERS

- A. Gymnasium Equipment:
  - 1. Draper, Inc: [www.draperinc.com/#sle](http://www.draperinc.com/#sle).
  - 2. IPI by Bison, Inc: [www.ipibybison.com/#sle](http://www.ipibybison.com/#sle).
  - 3. Performance Sports Systems: [www.perfsports.com/#sle](http://www.perfsports.com/#sle).

## 2.2 GENERAL REQUIREMENTS

- A. See drawings for sizes and locations, unless noted otherwise.
- B. Where mounting dimensions or sizes are not indicated, comply with applicable requirements of the following:
  - 1. National Federation of State High School Associations (NFHS) sports rules.
- C. Provide mounting plates, brackets, and anchors of sufficient size and strength to securely attach equipment to building structure; comply with requirements of contract documents.
- D. Hardware: Heavy duty steel hardware, as recommended by manufacturer.
- E. Electrical Wiring and Components: Comply with NFPA 70; provide UL-listed equipment.
- F. Structural Steel Fabrications: Welded in accordance with AWS D1.1/D1.1M, using certified welders.

## 2.3 DIVIDER CURTAINS

- A. Gymnasium Divider Curtains:

1. Curtain Material: Class A rated, self-extinguishing vinyl coated polyester meeting NFPA 101.
  - a. Upper Section: 9 oz/sq yd vinyl mesh fabric.
    - 1) Color: White.
  - b. Lower Section: 18 oz/sq yd solid vinyl coated polyester.
    - 1) Color: As selected from manufacturer's full line.
2. Operation: Vertical lift roll-up, curtain coils on bottom rail.
  - a. Provide safety lock for drive system.
3. Controls: Keyed wall switch; provide Best core.
4. Manufacturers:
  - a. Draper, Inc; Roll Up, Motorized: [www.draperinc.com/#sle](http://www.draperinc.com/#sle).
  - b. Performance Sports Systems; 4030 Roll-Up Curtain: [www.perfsports.com](http://www.perfsports.com).
  - c. Porter Athletic Equipment Company; 90675-000 Roll-Up Curtain: [www.porterathletic.com](http://www.porterathletic.com).

## 2.4 BASKETBALL

- A. Basketball System: Backstop assembly, backboard, and goal.
- B. Ceiling-Suspended Backstop Assemblies: Capable of mounting both rectangular and fan-shaped backboards.
  1. Framing: Center strut; forward folding framing.
  2. Folding Control System: Electric hoist that folds backstop with 115 volt actuator, integral limit switches that provide automatic shut-off in both positions, and safety catch with automatic reset.
    - a. Provide key switch with Best core.
  3. Height Adjuster: Raises or lowers assembly by 2 feet to adjust goal height.
  4. Height Control System: Electric hoist that adjusts backstop with 115 volt actuator, and integral limit switches that provide automatic shut-off in both positions.
  5. Framing Color: Manufacturer's standard.
  6. Manufacturers:
    - a. Draper, Inc; EZ Fold Ceiling Suspended Forward-Folding: [www.draperinc.com/#sle](http://www.draperinc.com/#sle).
    - b. Performance Sports Systems; 3107 Dual Post Front-Braced Front-Folding Ceiling Hung: [www.perfsports.com](http://www.perfsports.com).
    - c. Porter Athletic Equipment; 949 Series Ceiling Suspended Forward Fold, Front-Braced: [www.porterathletic.com](http://www.porterathletic.com).
- C. Backboards: Tempered Glass (main goals) and Steel (side goals), rectangular shaped.
  1. Frame: Brushed aluminum edge, steel mounting.
  2. Markings: Painted.
  3. Provide safety padding for bottom edge of backboard.
  4. Color: As selected from manufacturer's standard selection.
- D. Goals: Steel rim, mounted to backboard, with attached nylon net; complete with mounting hardware.
  1. Net Attachment Device: Tube-tie.
  2. Breakaway mechanism, adjustable.
  3. Finish: Powder coat orange.

## 2.5 FLOOR-MOUNTED EQUIPMENT

- A. Volley Ball Nets and Posts: One court system of adjustable posts, net, and tensioning winch meeting requirements for FIVB, USA Volleyball, NCAA and NFHS competition requirements; two sets.

1. Posts: 3-1/2 inch O.D. schedule 80 aluminum tube with 1 inch height adjustments between 42 and 96 inches.
  2. Net: 4 inch square #36 nylon cord with vinyl coated polyester hem, double stitched around the perimeter.
  3. Tensioning Winch: Manual crank heavy duty, self-locking worm gear mechanism.
  4. Manufacturers:
    - a. Draper, Inc; Power Volleyball System (PVS): [www.draperinc.com/#sle](http://www.draperinc.com/#sle).
    - b. IPI by Bison, Inc; VB1000NS Centerline Aluminum: [www.ipibybison.com/#sle](http://www.ipibybison.com/#sle).
    - c. Performance Sports Systems; 6005 Rallyline Volleyball System: [www.perfsports.com](http://www.perfsports.com).
- B. Floor Sleeves for Posts: Metal sleeve, with latch cover, cast into concrete subfloor to hold poles for nets and goals; installed flush with finish floor surface.
1. Latch Cover: Chrome plated, round; tamper resistant lock with key.
  2. Sleeve: Aluminum.
  3. Depth of Sleeve: 9 inches from floor surface to bottom, including latch cover.

## 2.6 EXERCISE EQUIPMENT

- A. Chinning Bar: Wall mounted steel bar, parallel to floor; adjustable for height.
1. Bar Diameter: 1 inch.
  2. Steel Bar Finish: Zinc-plated.
  3. Steel Frame Finish: Powder coating, color as selected from manufacturer's full line.
- B. Traverse Climbing Wall: Modular climbing wall with mat-locking system.
1. Section Dimensions: 96 inches high by 48 inches long.
  2. Overall Dimensions: 96 inches high by 432 inches (36 feet) long.
  3. Mat-Locking System: Vinyl-coated urethane foam.
    - a. Size: 72 inches high by 432 inches (36 feet) long.
    - b. Thickness: 2 inches.
    - c. Hardware: Manufacturer's standard.
    - d. Color: As selected from manufacturer's full range.
  4. Manufacturers:
    - a. Everlast Climbing, a Playcore Company; Chroma Climbing Wall: [www.everlastclimbing.com/](http://www.everlastclimbing.com/).
    - b. Spectrum Sports International; Modular Climbing Panels: [www.spectrumsports.com/](http://www.spectrumsports.com/).

## 2.7 WALL PADDING

- A. Wall Padding: Foam filling bonded to backing board, wrapped in covering; each panel fabricated in one piece.
1. Surface Burning Characteristics: Flame spread index (FSI) of 25 or less, smoke developed index (SDI) of 450 or less, Class A, when tested in accordance with ASTM E84 as a complete panel.
  2. Covering: Vinyl-coated polyester fabric, mildew and rot resistant; stapled to back of board.
    - a. Color: As selected from manufacturer's standard range.
    - b. Texture: Embossed leather-look.
    - c. Fabric Weight: 14 oz/sq yd.
  3. Foam: Open cell polychloroprene (Neoprene) 5.5 pcf nominal density.
  4. Foam Thickness: 2 inches.
  5. Backing Board: Plywood.
  6. Mounting: Permanent; using screws.
  7. Manufacturers:
    - a. Draper, Inc; EcoVision Wall Pad: [www.draperinc.com/#sle](http://www.draperinc.com/#sle).

- b. Performance Sports Systems; 4130 Standard Foam Wall Pad: [www.perfsports.com](http://www.perfsports.com).
- c. Porter Athletic Equipment; 575 - FireSafe Wall Pad: [www.porterathletic.com](http://www.porterathletic.com).

## **PART 3 EXECUTION**

### **3.1 EXAMINATION**

- A. Take field measurements to ensure proper fitting of work. If taking field measurements before fabrication will delay work, allow for adjustments within recommended tolerances.
- B. Inspect areas and conditions before installation, and notify Architect in writing of unsatisfactory or detrimental conditions.
- C. Do not proceed with this work until conditions have been corrected; commencing installation constitutes acceptance of work site conditions.
- D. Verify that electrical services are correctly located and have proper characteristics.

### **3.2 INSTALLATION**

- A. Install in accordance with contract documents and manufacturer's instructions.
- B. Coordinate installation of inserts and anchors that must be built in to flooring or subflooring.
- C. Install equipment rigid, straight, plumb, and level.
- D. Secure equipment with manufacturer's recommended anchoring devices.
- E. Install wall padding securely, with edges tight to wall and without wrinkles in fabric covering.
- F. Separate dissimilar metals to prevent electrolytic corrosion.

### **3.3 ADJUSTING**

- A. Verify proper placement of equipment.
- B. Verify proper placement of equipment anchors and sleeves, and use actual movable equipment to be anchored if available.
- C. Adjust operating equipment for proper operation; remove and replace equipment causing noise or vibration; lubricate equipment as recommended by manufacturer.

### **3.4 CLEANING**

- A. Remove masking or protective covering from finished surfaces.
- B. Clean equipment in accordance with manufacturer's recommendations.

### **3.5 PROTECTION**

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

B. Replace damaged products before Date of Substantial Completion.

**END OF SECTION**

## **SECTION 32 3223 - PRECAST MODULAR BLOCK RETAINING WALL**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY**

- A. This Section includes precast concrete modular retaining walls, without soil reinforcement as noted in the civil drawings. Three precast concrete modular block manufacturers used as a basis of design are as follows:
  - 1. Redi-Rock:
    - a. 46" wide by 18" high
    - b. Limestone with quarried stone texture (for pricing purposes only)
  - 2. Magnum Stone:
    - a. 48" wide by 24" high
    - b. New Ledge Face Pattern (for pricing purposes only)
  - 3. Stone Strong:
    - a. 2', 4' or 8' wide by 18" high
    - b. Chiseled Granite pattern (for pricing purposes only)
  - 4. Equivalent product may be submitted.
  - 5. If soil reinforcing with grid is required or is more efficient, notify engineer for approval prior to bidding.
- B. Related Requirements:
  - 1. Section 31 20 00 "Earthmoving" for excavation and backfill behind retaining walls.

#### **1.2 ACTION SUBMITTALS**

- A. Product Data: For each type of product.
  - 1. Precast modular block system brochure.
  - 2. Precast modular block concrete test results including compressive strength tests, air content, slump.
  - 3. Geotextile fabric liner.
- B. Sustainability Requirements for Submittals: Refer to Section 01 3329 - Sustainability Requirements – LEED v4/v4.1" for additional submittals that may apply to products specified in this section.
- C. Samples: For each color and texture of concrete unit specified.
- D. Shop Drawing Submittal: For precast concrete modular retaining walls.
  - 1. Retaining wall design calculations, signed and sealed by the manufacturer's engineer.
  - 2. Retaining wall construction shop drawings, signed and sealed by the manufacturer's engineer (licensed in the State of Maryland).
    - a. Include sections and plan views indicating the plan layout, height, backfill slope, and construction details.

- b. Include sufficient information to show grading and drainage of the site is understood.
- c. Indicate that soil information in the supplemental geotechnical report and structural drawings is being utilized in design (soil bearing pressure, soil shear capacity, etc.).

### 1.3 INFORMATIONAL SUBMITTALS

- A. Contractor Qualifications: Retaining wall installer shall provide documentation showing experience on similar sized wall projects constructed in the past three (3) years.
- B. Research/Evaluation Reports: For modular retaining wall units and soil reinforcement, from ICC-ES.
- C. Preconstruction test reports.
- D. Field quality-control reports.

### 1.4 QUALITY ASSURANCE

- A. Testing Agency Qualifications: Qualified according to ASTM E 329 for testing indicated.
- B. Bearing subgrade and backfill shall be tested by the testing agency for compliance with the shop drawing requirements for material properties and proper compaction.
- C. Samples: Provide precast concrete block face shell samples for stain color and texture approval.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Basis of Design: Design of precast concrete modular retaining walls is based on products indicated in Section 1.1A. If comparable products of another manufacturer are proposed, provide design catalog to architect to select block size, shape, stain color and surface pattern.
- B. Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design precast concrete modular retaining walls.
- C. Compliance Review: Qualified professional engineer responsible for precast concrete modular retaining wall design shall review and approve submittals and source and field quality-control reports for compliance of materials and construction with design.
- D. Structural Performance: Engineering design shall be based on the loads listed in the structural drawing.

### 2.2 PRECAST CONCRETE RETAINING WALL BLOCKS

- A. Concrete Units:
  - 1. Wall units shall conform to ASTM C1776 - Standard Specification for Wet-Cast Precast Modular Retaining Wall Units.
  - 2. Concrete for precast modular blocks shall have a minimum 28-day compressive strength of 4,500 psi. Entrained air content shall be between 5 and 7%.

3. Units shall be reinforced according to manufacturer's requirements. All reinforcing shall have a minimum yield strength of 60 ksi. Minimum clear cover to reinforcement shall be 1½ inches.
  4. The face pattern shall be selected from the manufacturer's standard molds. See Section 1.1A for preliminary selection of textures/patterns.
  5. The color of the units shall be natural gray. A concrete stain shall be field applied to color the units as specified by the Engineer or Owner per Section 2.2C below.
- B. Geogrid: If geogrid reinforcement is required, it shall be as shown in the plans or as detailed in the shop drawings. Substitution of a different type of geogrid shall not be allowed unless approved of the Architect/Engineer or Owner after submittal of shop drawings and test data.
  - C. Color: Manufacturer to recommend stain color and to submit to Architect. Final stain will be selected by Architect from manufacturer's full range.
  - D. Shape and Texture: Provide units matching basic shape, dimensions, and face texture of basis-of-design product.

## 2.3 INSTALLATION MATERIALS

- A. Pins and Clips: Product supplied by modular retaining wall unit manufacturer for use with units provided, made from nondegrading material (polymer reinforced with glass fibers, e.g.).
- B. Cap Adhesive: Product supplied or recommended by precast concrete modular retaining wall unit manufacturer for adhering cap units to units below.
- C. Drainage Fill: Coarse crushed stone or gravel with requirements in Section 31 20 00 "Earthmoving" for drainage course.
- D. Impervious Cap: Clayey gravel and sand mixture capable of compacting to a dense state.
- E. Drainage Geotextile: Nonwoven needle-punched geotextile, manufactured for subsurface drainage applications, made from polyolefins or polyesters; with elongation greater than 50 percent.
  1. Apparent Opening Size: No. 70 to 100 (0.212- to 0.150-mm) sieve, maximum; ASTM D 4751.
  2. Minimum Grab Tensile Strength: 110 lb (49.9 kg); ASTM D 4632.

## PART 3 - EXECUTION

### 3.1 RETAINING WALL INSTALLATION

- A. General: Place units according to precast concrete modular retaining wall unit manufacturer's written instructions.
  1. Lay units in bond pattern recommended for the units selected.
  2. Form corners and ends by using special precast concrete corner or end units.
- B. Wall Base: Provide concrete pad footing as noted in the Structural drawings.
  1. Contractor's Option: Granular Pad with Filter Fabric. If permitted by the manufacturer's design engineer, in lieu of a concrete pad, a dense graded crushed aggregate pad may be utilized. The Granular Pad must be separated from the drainage backfill above by a soil separating filter fabric. Compact base material to thickness indicated and with not less than 95 percent maximum dry unit weight according to ASTM D 698.

- C. First Course: Place first course of precast concrete modular retaining wall units for full length of wall. Place units in firm contact with each other, properly aligned and level.
  - 1. If Contractor's Wall Base Option is used, tamp units into leveling base as necessary to bring tops of units into a level plane.
- D. Subsequent Courses: Remove excess fill and debris from tops of units in course below. Place units in firm contact and properly aligned.
  - 1. If precast units require unit fill, see Section 3.2.
  - 2. Use standard minimum batter unless noted otherwise in the Structural drawings.
- E. Cap Units: Place cap units and secure with cap adhesive.

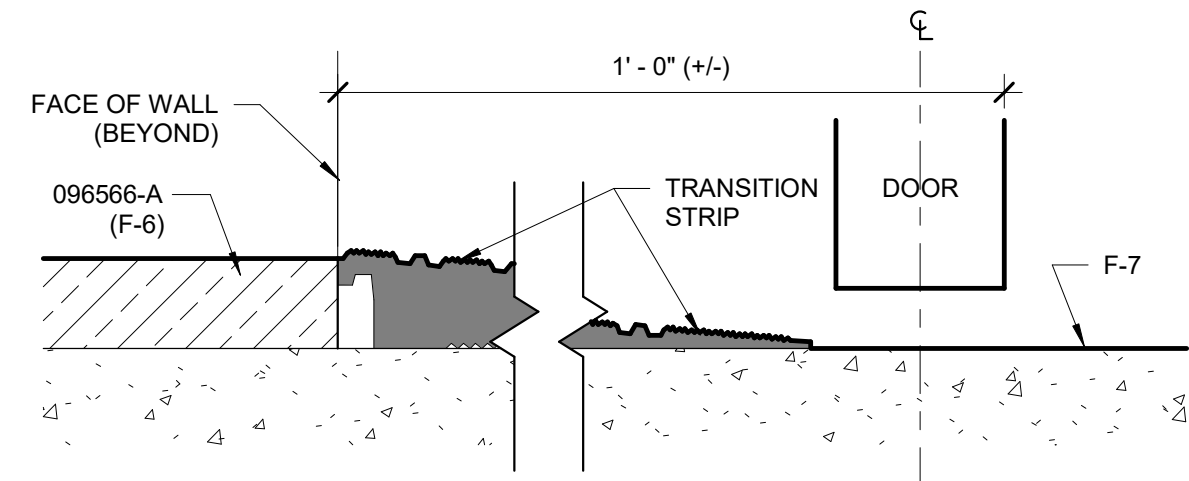
### 3.2 FILL PLACEMENT

- A. General: Comply with requirements in Structural drawings and with precast concrete modular retaining wall unit manufacturer's written instructions.
- B. Fill voids between and within units with drainage fill. Place fill as each course of units is laid.
- C. Place, spread, and compact drainage fill and soil fill in uniform lifts for full width and length of embankment as wall is laid. Place and compact fills without disturbing alignment of units. Where both sides of wall are indicated to be filled, place fills on both sides at same time. Begin at wall, and place and spread fills toward embankment.
  - 1. Use only hand-operated compaction equipment within 48 inches (1200 mm) of wall, or one-half of height above bottom of wall, whichever is greater.
  - 2. Compact reinforced-soil fill to not less than 95 percent maximum dry unit weight according to ASTM D 698.
    - a. In areas where only hand-operated compaction equipment is allowed, compact fills to not less than 90 percent maximum dry unit weight according to ASTM D 698.
  - 3. Compact nonreinforced-soil fill to comply with Section 31 20 00 "Earthmoving."
- D. Place drainage geotextile against back of wall, and place layer of drainage fill at least 24 inches wide behind drainage geotextile to within 12 inches of finished grade. Place another layer of drainage geotextile between drainage fill below and impervious soil fill above.
- E. Place impervious fill over top edge of drainage fill layer.

### 3.3 FIELD QUALITY CONTROL

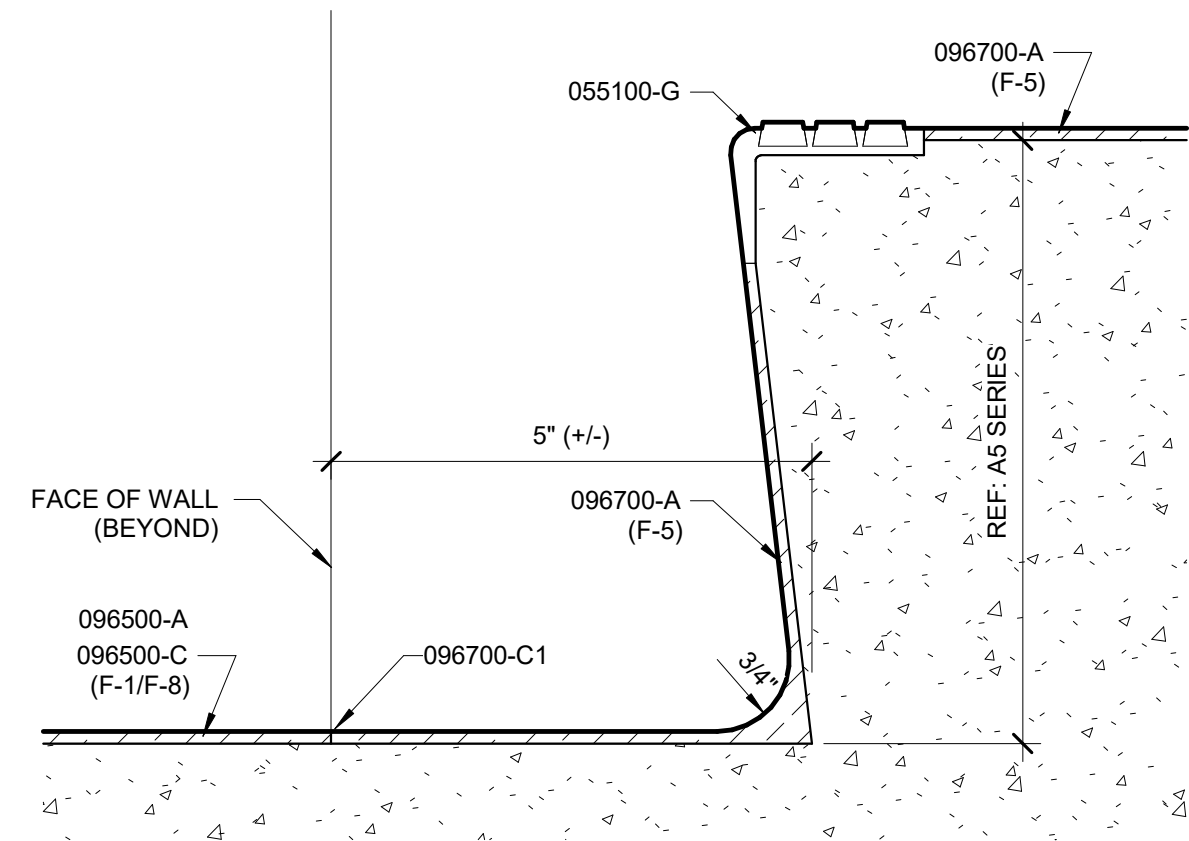
- A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.
- B. Comply with requirements in Section 31 20 00 "Earthmoving" for field quality control.
  - 1. In each compacted backfill layer, perform at least one field in-place compaction test for each 24 inches of fill depth and each 50 feet or less of precast concrete modular retaining wall length.

### END OF SECTION



1  
ADD6.1 6" = 1'-0"  
14/A9.14

TRANSITION DETAIL



2  
ADD6.1 6" = 1'-0"  
16/A9.14

TRANSITION DETAIL

FLOORING TRANSITION / EDGE STRIP SCHEDULE

| FINISH (A) | FINISH (B) | MANUFACTURER / STYLE   | DETAIL       | KEYNOTE   |
|------------|------------|--|--------------|-----------|
| F-1        | F-2        | JOHNSONITE CTA-XX-H  | SEE 13/A8.2  | 096500-D  |
| F-1        | F-3        | MANNINGTON "THE EQUALIZER" TRANSITION                            | SEE 13/A9.14 | 096623-C1 |
| F-1        | F-4        | JOHNSONITE CD-XX   | SEE 1/A5.2   | 096500-D  |
| 6          | F-5        | STONE THRESHOLD (RESTROOMS ONLY)                                 | SEE 14/A8.2  | 096700-B  |
|            |            | DIVIDER STRIP  | SEE 16/A9.14 | 096700-C1 |
| 6          | F-6        | MANNINGTON REDUCER 176 AND MANNINGTON "THE EQUALIZER" TRANSITION | SEE 13/A8.2  | 096500-D  |
|            |            | JOHNSONITE SSR-XX-B  |              |           |
| F-1        | F-7        | JOHNSONITE SSR-XX-B  |              |           |
| F-2        | F-3        | MANNINGTON "THE EQUALIZER" TRANSITION                            | SEE 13/A9.14 | 096623-C1 |
| 6          | F-3        | PEMKO RR2 RUBBER RAMP  | SEE 15/A9.14 |           |
| 6          | F-6        | PEMKO SBR1F RUBBER RAMP  | SEE 14/A9.14 |           |
| F-8        | F-2        | JOHNSONITE CTA-XX-H  | SEE 13/A8.2  | 096500-D  |
| F-8        | F-3        | MANNINGTON "THE EQUALIZER" TRANSITION                            | SEE 13/A9.14 | 096623-C1 |
| F-8        | F-4        | JOHNSONITE CD-XX   | SEE 1/A5.2   | 096500-D  |
| 6          | F-5        | STONE THRESHOLD (RESTROOMS ONLY)                                 | SEE 14/A8.2  | 096700-B  |
|            |            | DIVIDER STRIP  | SEE 16/A9.14 | 096700-C1 |
| F-8        | F-6        | JOHNSONITE CTA-XX-K  | SEE 13/A8.2  | 096500-D  |
| F-8        | F-7        | JOHNSONITE SSR-XX-B  |              |           |

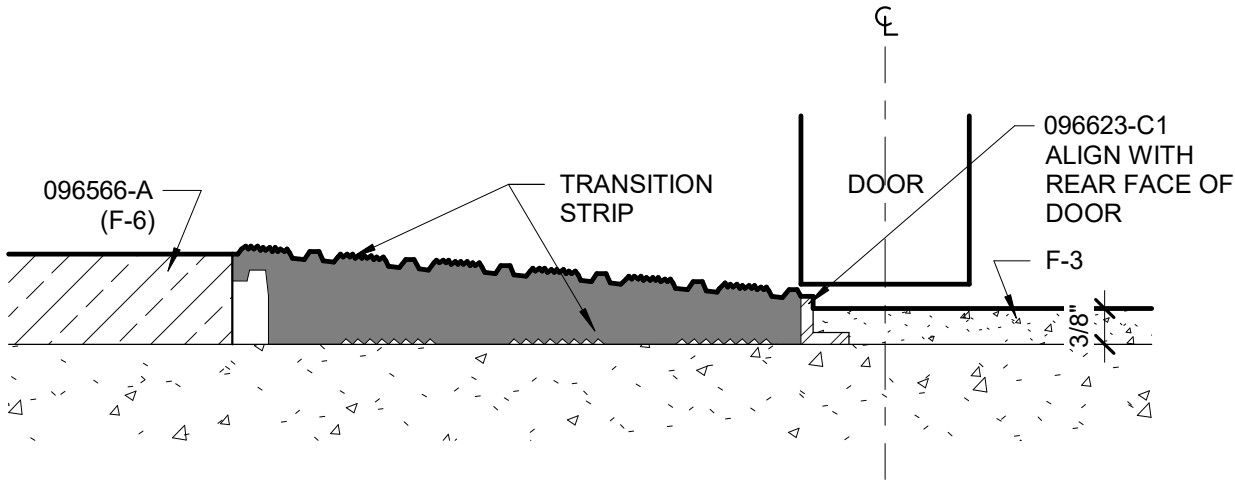
NOTES:

1. THRESHOLDS IDENTIFIED IN 087100 OVERRIDE THE ABOVE.
2. CENTER TRANSITIONS BELOW CENTER OF DOOR LEAF, UNLESS NOTED OTHERWISE.

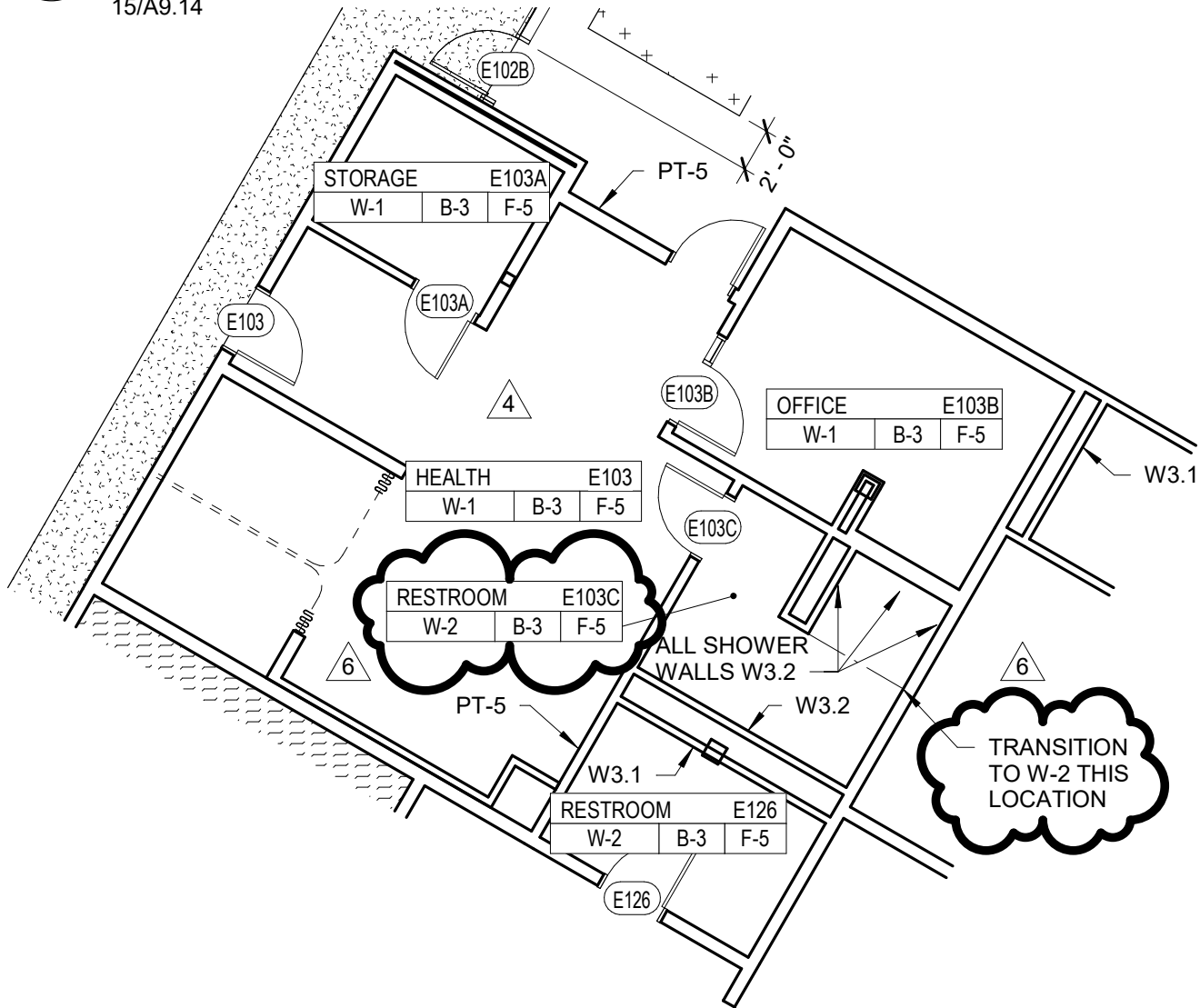
KEYNOTES (FOR REFERENCE ONLY)

- 055100-G EMBEDDED NOSING
- 096500-A VINYL COMPOSITION TILE (REFER TO A9 SERIES FOR COLORS AND INSTALLATION PATTERNS)
- 096500-C LUXURY VINYL TILE (REFER TO A9 SERIES FOR COLORS AND INSTALLATION PATTERNS)
- 096500-D TRANSITION/EDGE STRIP
- 096566-A RUBBER SHEET FLOORING
- 096623-C1 DIVIDER STRIP & REDUCER
- 096700-A FLUID-APPLIED FLOORING
- 096700-B STONE THRESHOLD
- 096700-C1 DIVIDER STRIP


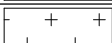
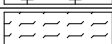

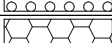
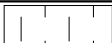

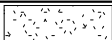





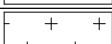
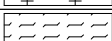


|  |                     |                    |                      |            |
|--|---------------------|--------------------|----------------------|------------|
| DRAWING:<br>MISC. DETAILS                          | REV #<br>6          | DATE<br>04/22/2020 | Addendum<br>#6       | G W<br>W O |
| PROJECT:<br>WAVERLEY ELEMENTARY SCHOOL REPLACEMENT | SCALE: As indicated |                    | SKETCH NO.<br>ADD6.1 |            |
|  | JOB NO. #18045      |                    |                      |            |



1 **TRANSITION DETAIL**  
ADD6.2 6" = 1'-0"  
15/A9.14



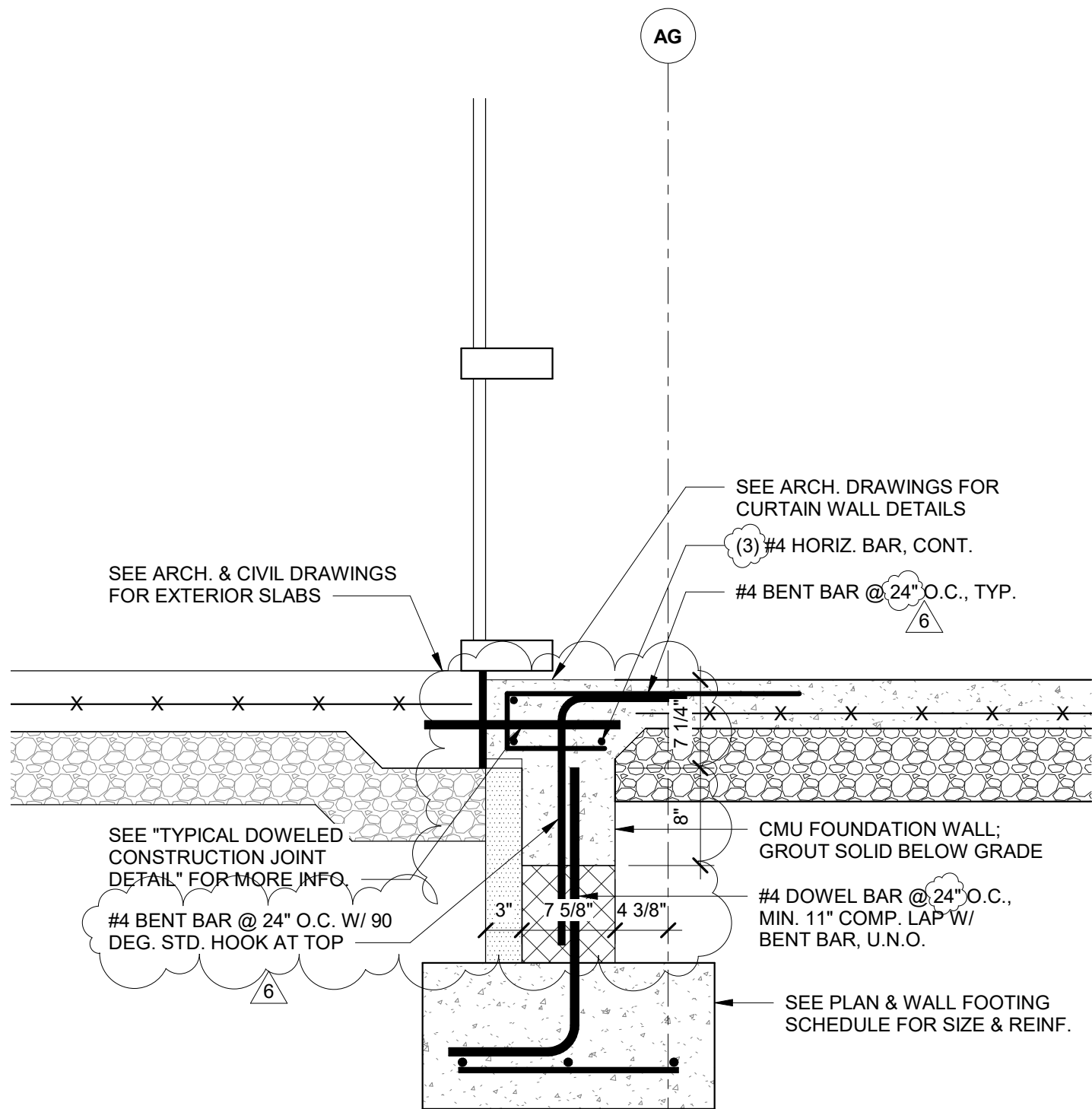
2 **PARTIAL FINISH PLAN**  
ADD6.2 1/8" = 1'-0"  
FROM 1/A9.5

| FLOORING LEGEND   |      |                                |
|---|------|--------------------------------|
| HATCH / TYPE  |      | NUMBER / COLOR                 |
| FLOORING (F-1)  |      |                                |
|    | F1.1 | Z2513 - CIRQUE WHITE           |
|    | F1.2 | Z1860 - SOFT COOL GRAY         |
|    | F1.3 | Z7506 - COLORADO STONE         |
|    | F1.4 | Z1812 - LEMON YELLOW           |
|    | F1.5 | Z7510 - KICKIN' KIWI           |
| FLOORING (F-2)  |      |                                |
|    | F2.1 | CIRCUIT - BINARY CODE 12405    |
|    | F2.2 | CIRCUIT - DIGITAL SIGNAL 13402 |
| FLOORING (F-3)  |      |                                |
|    | F3.1 | CARTE BLANCHE - KRT 1805       |
|    | F3.2 | PORCELAIN PASSION - KRT 1816   |
| FLOORING (F-4)  |      |                                |
|    | F4.1 | CARTE BLANCHE - KRT 1805       |
| FLOORING (F-6)  |      |                                |
|    | F6.1 | L92 - DARK MAPLE               |
|   | F6.2 | L70 - LIGHT GREY               |
| FLOORING (F-8)  |      |                                |
|  | F8.1 | SP001 - DARK WHITE             |
|  | F8.2 | SP032 - FORMSTONE              |
|  | F8.3 | SP022 - RESERVOIR ON TAP       |
|  | F8.4 | SP010 - BLACK-EYED SUSAN       |
|  | F8.5 | SP024 - LAND-HO                |

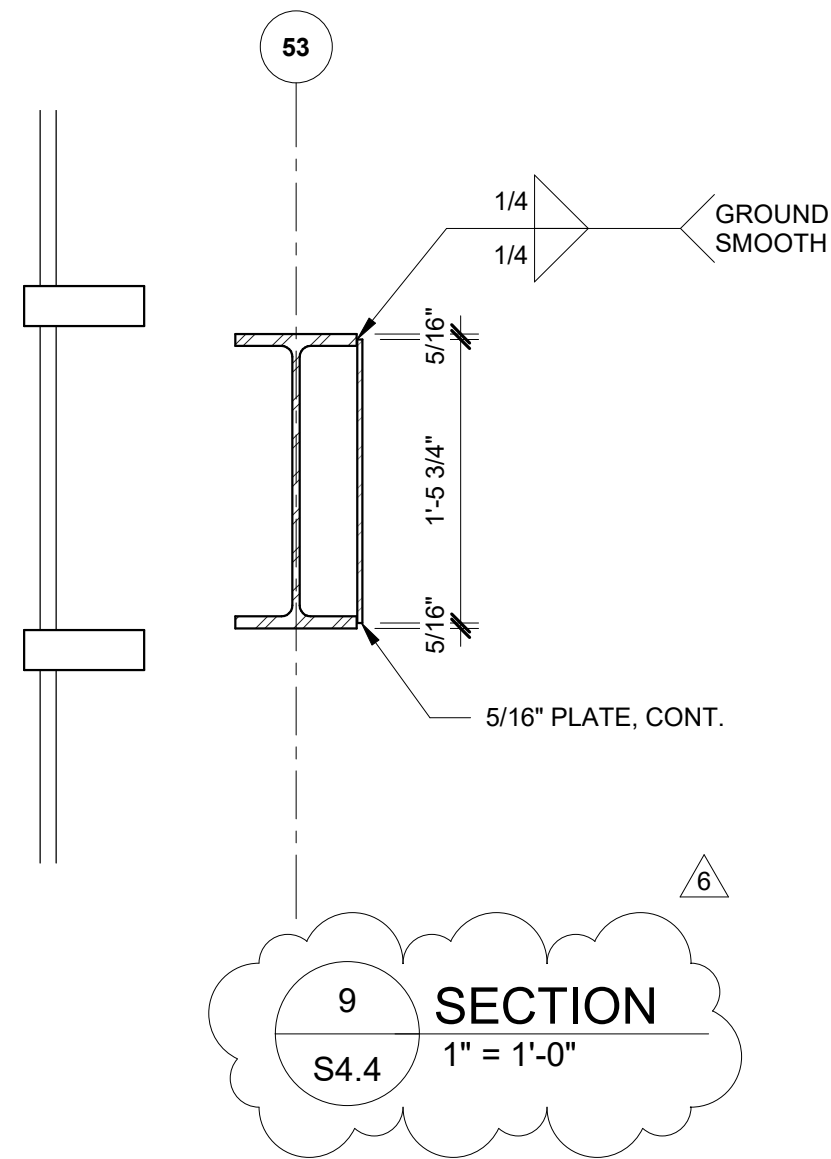
KEYNOTES (FOR REFERENCE ONLY)

- 096566-A RUBBER SHEET FLOORING
- 096623-C1 DIVIDER STRIP & REDUCER

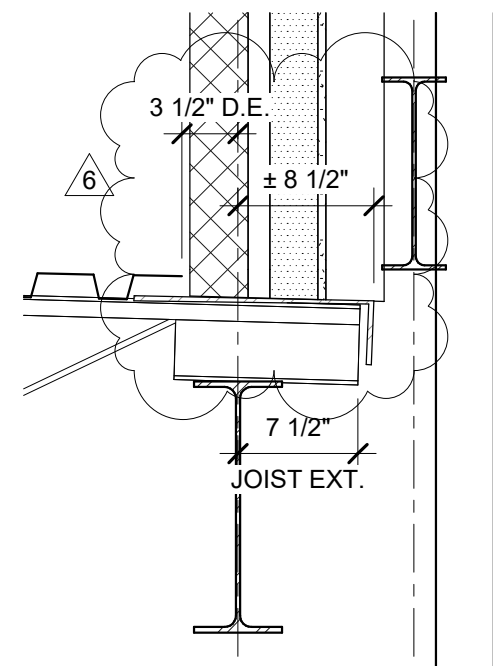
|   |                     |                    |                      |            |
|---|---------------------|--------------------|----------------------|------------|
| DRAWING:<br>MISC. DETAILS                             | REV #<br>6          | DATE<br>04/22/2020 | Addendum<br>#6       | G W<br>W O |
|   | SCALE: As indicated |                    |                      |            |
| PROJECT:<br>WAVERLEY ELEMENTARY SCHOOL<br>REPLACEMENT | JOB NO.             | #18045             | SKETCH NO.<br>ADD6.2 |            |
|   |                     |                    |                      |            |



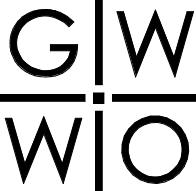
1 SECTION  
S3.4 1" = 1'-0"

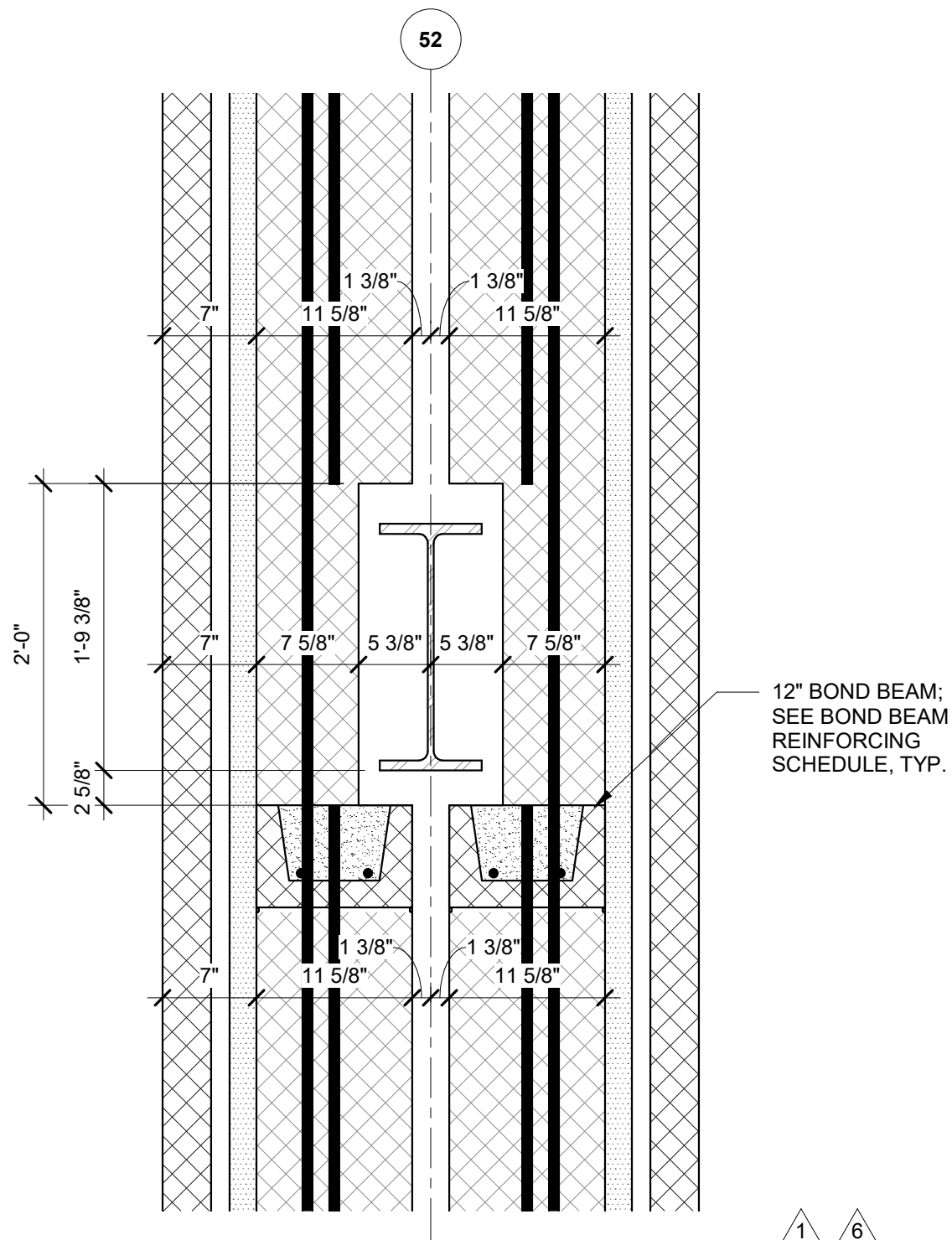


9 SECTION  
S4.4 1" = 1'-0"

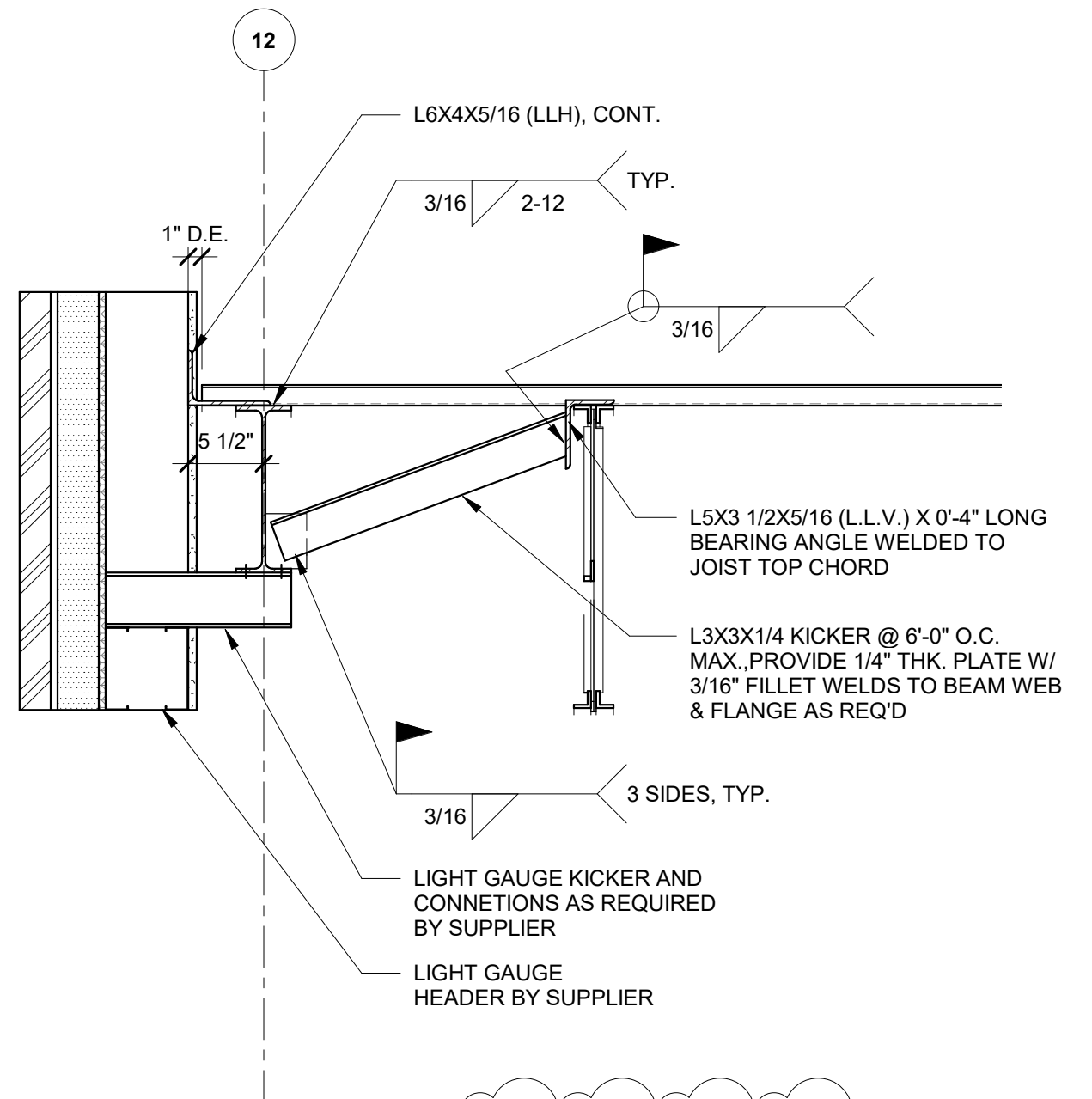


7 SECTION  
S4.6 1" = 1'-0"

|   |            |                    |                      |   |
|---|------------|--------------------|----------------------|---|
| DRAWING:<br>STRUCTURAL DETAILS                        | REV #<br>6 | DATE<br>04/22/2020 | Addendum<br>#6       |  |
| PROJECT:<br>WAVERLEY ELEMENTARY SCHOOL<br>REPLACEMENT | SCALE:     |                    | SKETCH NO.<br>ADD6.3 |   |
|   | JOB NO.    | #18045             |                      |   |

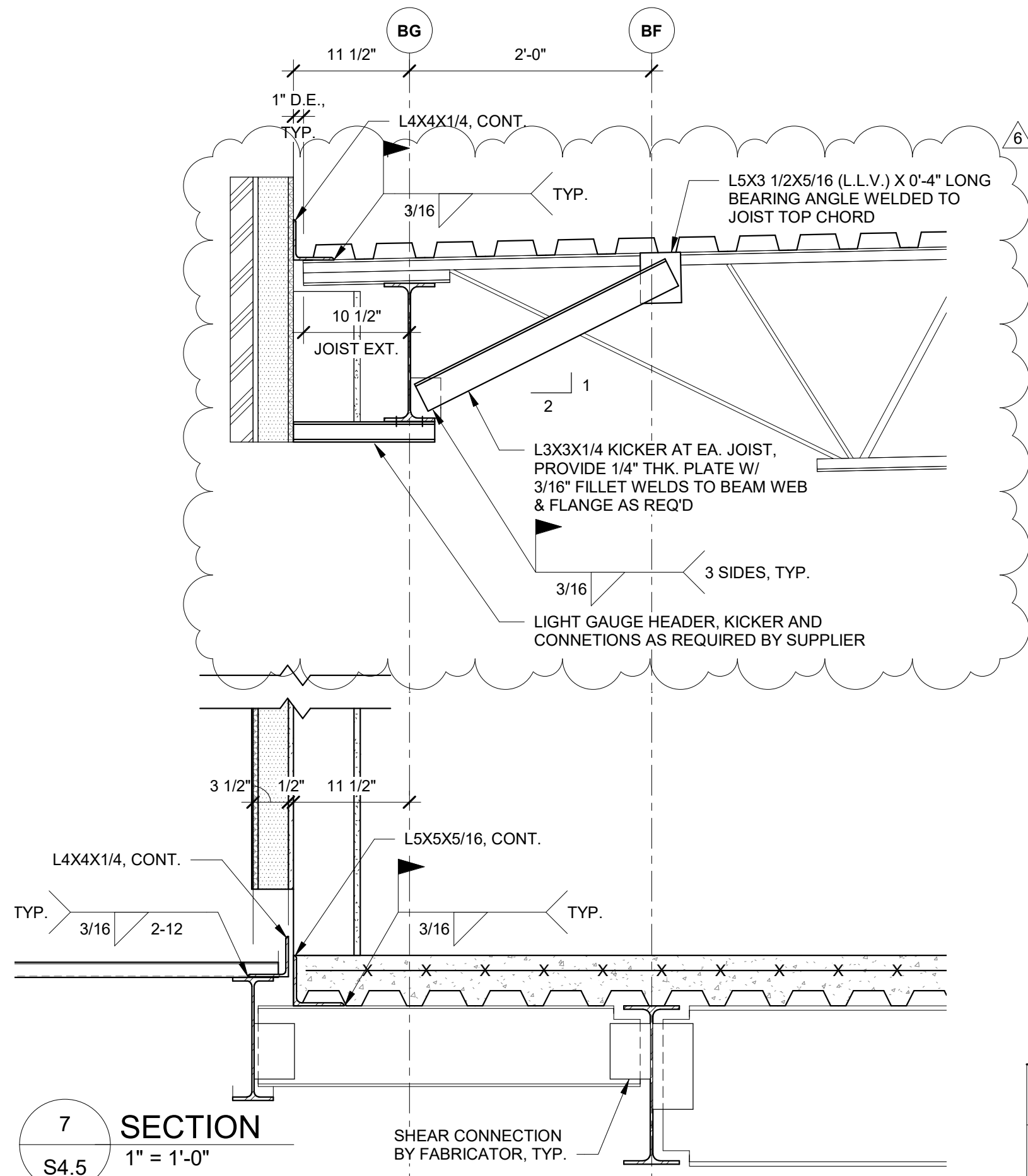


8 SECTION  
S4.4 1" = 1'-0"

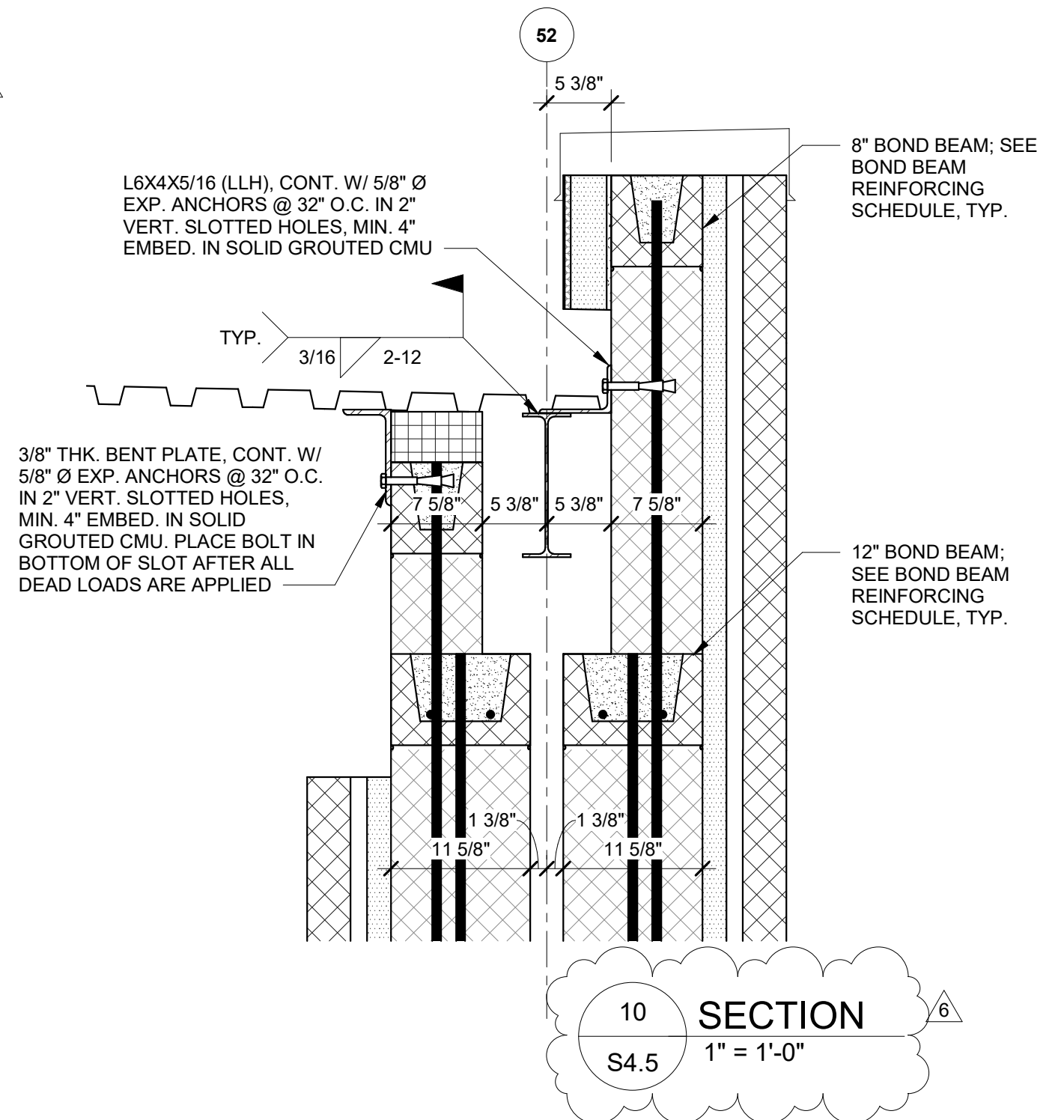


9 SECTION  
S4.5 1" = 1'-0"

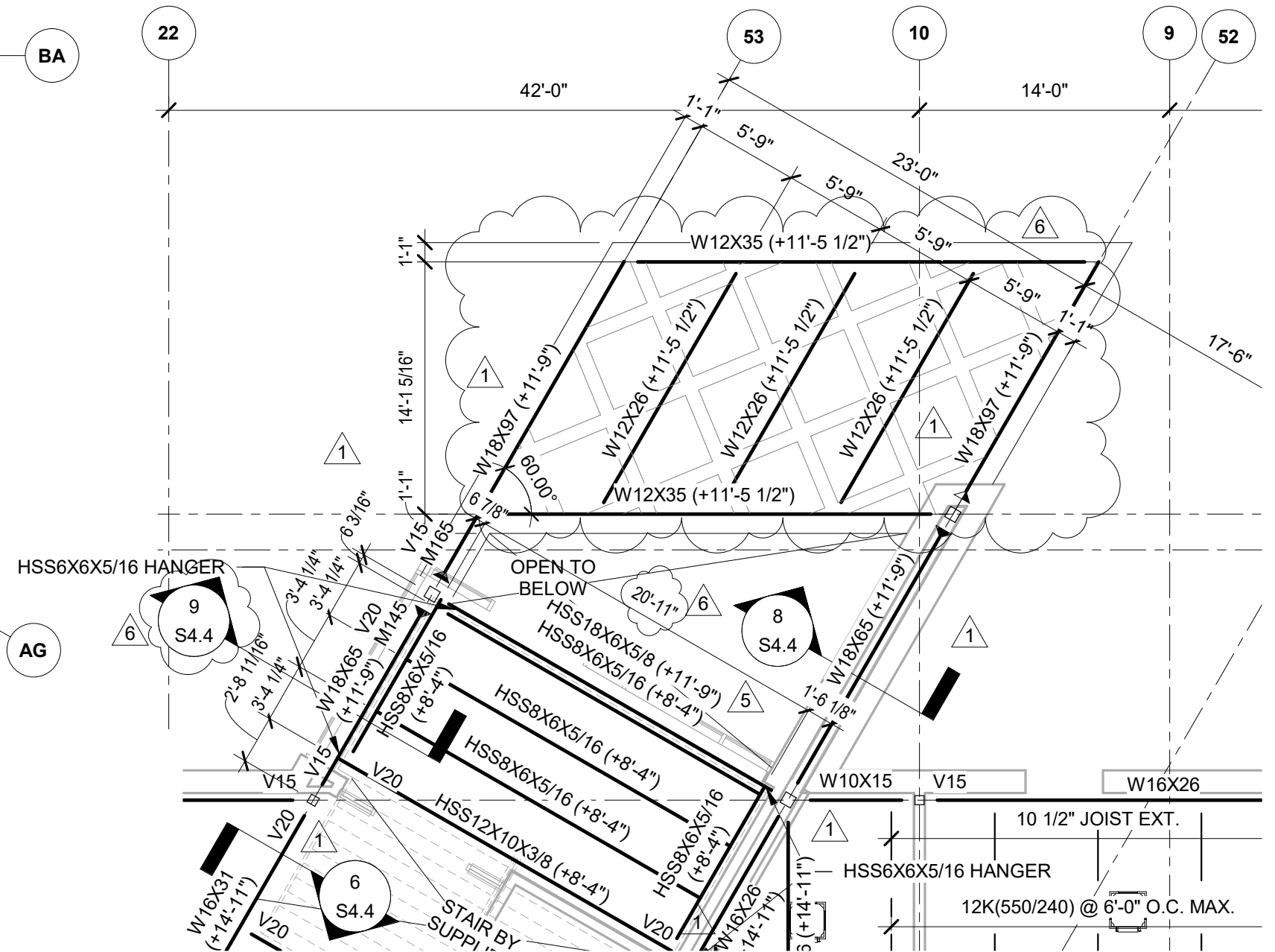
|   |            |                    |                      |   |
|---|------------|--------------------|----------------------|---|
| DRAWING:<br>STRUCTURAL DETAILS                        | REV #<br>6 | DATE<br>04/22/2020 | Addendum<br>#6       | <div><div>G</div><div>W</div><div>W</div><div>O</div></div> |
|   | SCALE:     |                    |                      |   |
| PROJECT:<br>WAVERLEY ELEMENTARY SCHOOL<br>REPLACEMENT | JOB NO.    | #18045             | SKETCH NO.<br>ADD6.4 |   |
|   |            |                    |                      |   |



7 SECTION  
S4.5 1" = 1'-0"



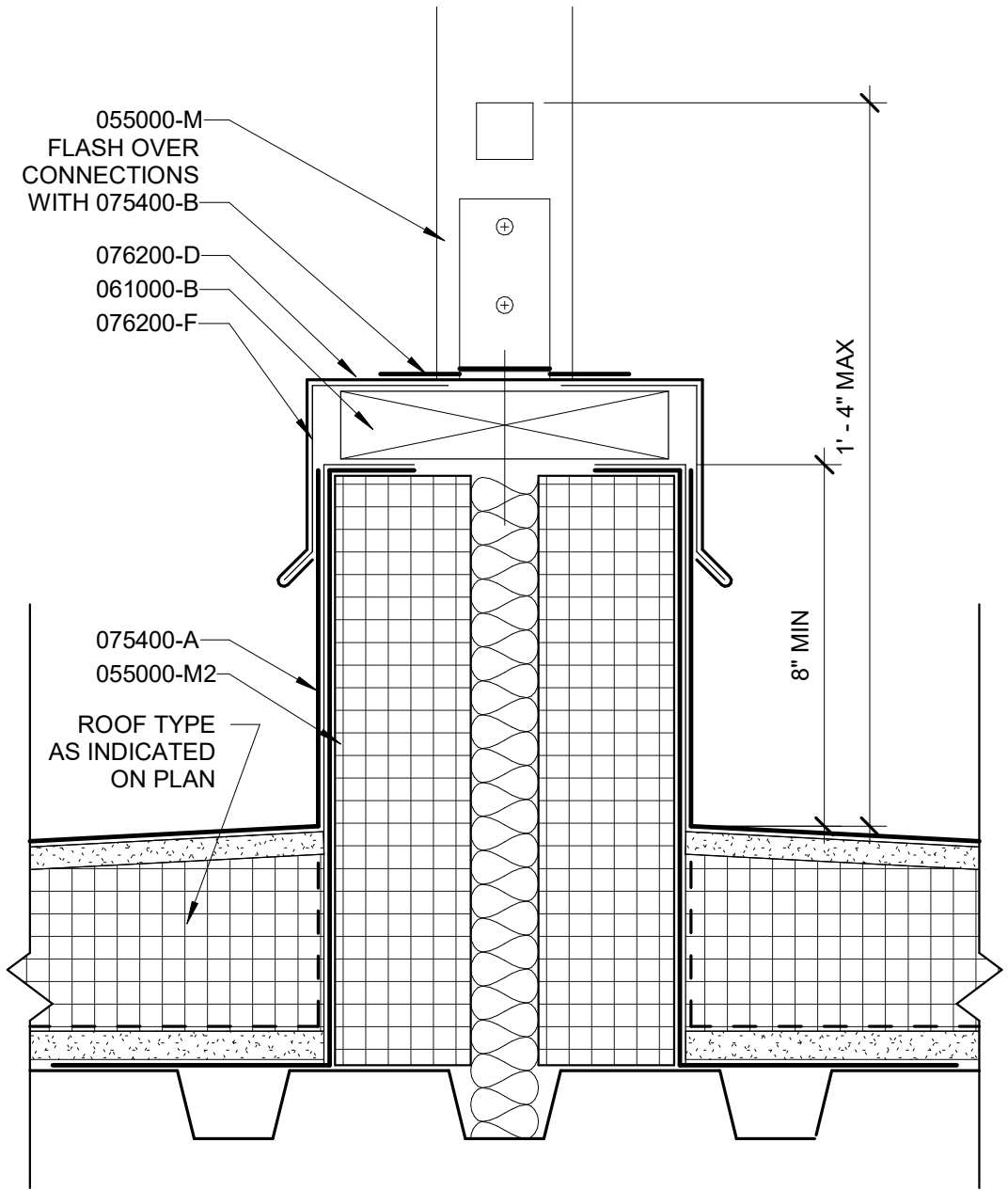
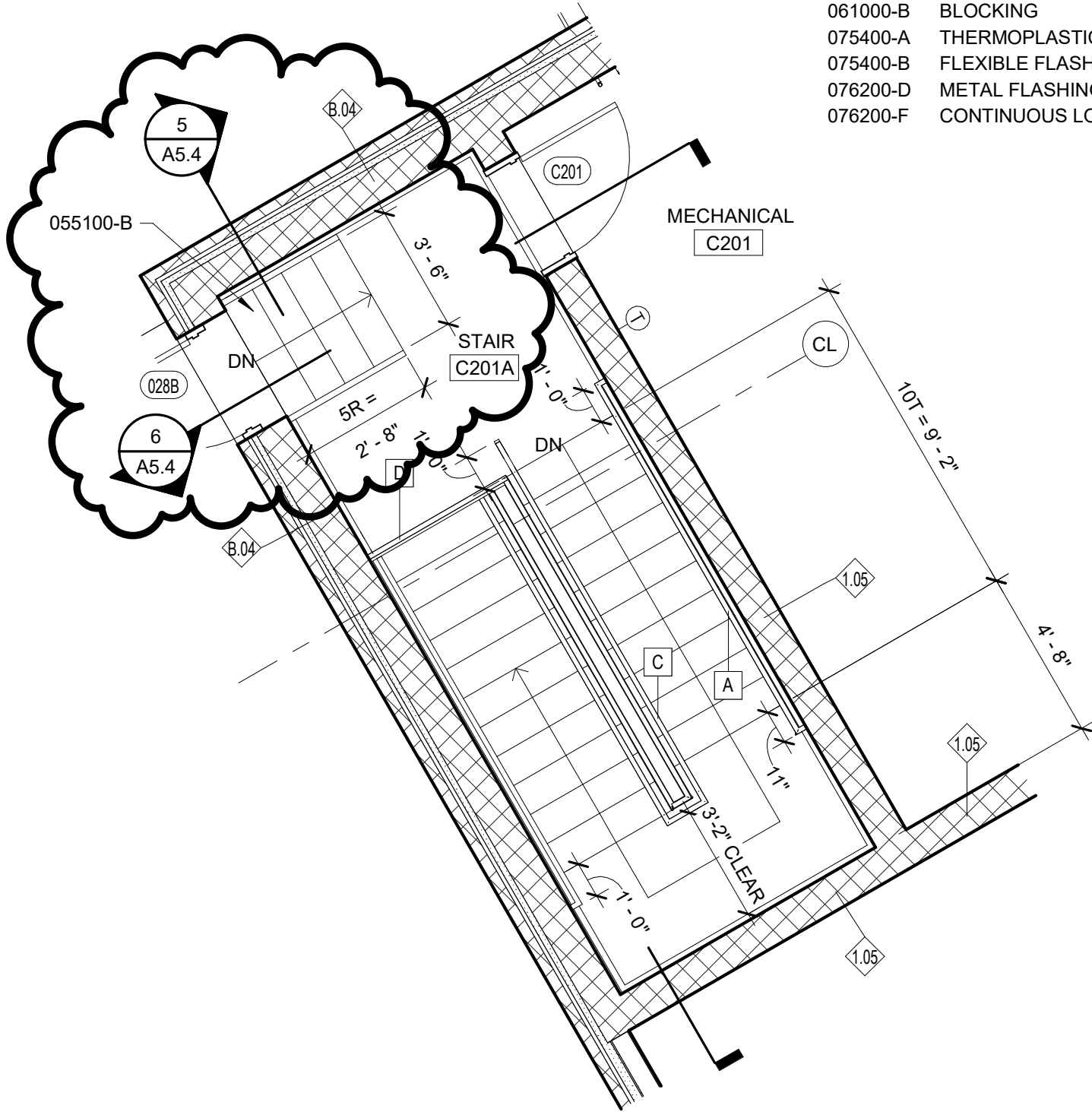
|  |         |            |            |  |
|--|---------|------------|------------|--|
| DRAWING:                               | REV #   | DATE       | Addendum   | <div> <div>G W</div> <div>W O</div> </div> |
| STRUCTURAL DETAILS                     | 6       | 04/22/2020 | #6         |  |
| PROJECT:                               | SCALE:  |            | SKETCH NO. |  |
| WAVERLEY ELEMENTARY SCHOOL REPLACEMENT | JOB NO. | #18045     | ADD6.5     |  |



|   |   |
|---|---|
| G | W |
| W | O |

KEYNOTES (FOR REFERENCE ONLY)

- 055000-M PREFABRICATED ALUMINUM LADDER  
055000-M2 PREFABRICATED INSULATED SUPPORT RAIL  
055100-B METAL STAIRS WITH METAL TREADS  
061000-B BLOCKING  
075400-A THERMOPLASTIC (TPO) MEMBRANE  
075400-B FLEXIBLE FLASHING  
076200-D METAL FLASHING  
076200-F CONTINUOUS LOCKING METAL CLEAT



2 ROOF LADDER SUPPORT, TYP  
ADD6.7 3" = 1'-0"

1 SECOND FLOOR PLAN - AREA C - PENTHOUSE STAIR  
ADD6.7 1/4" = 1'-0"  
4/A5.4

DRAWING:  
PENTHOUSE STAIR PLAN

PROJECT:  
WAVERLEY ELEMENTARY SCHOOL  
REPLACEMENT

REV # 6  
DATE 04/22/2020

SCALE: As indicated

JOB NO. #18045

Addendum #6

SKETCH NO. ADD6.7



| DOAS – AIR COOLED CONDENSING UNIT SCHEDULE |                   |               |                             |               |          |           |            |          |          |              |             |                     |
|--|-------------------|---------------|-----------------------------|---------------|----------|-----------|------------|----------|----------|--------------|-------------|---------------------|
| UNIT                                       | AREA SERVED       | UNIT LOCATION | COOLING CAPACITY (45°)(BTU) | AIR FLOW RATE | OAT (°F) | EER/IEER  | ELECTRICAL |          |          | WEIGHT (LBS) | EMER. POWER | BASED ON MITSUBISHI |
|  |                   |               |                             |               |          |           | MCA        | MAX FUSE | V/ø/Hz   |              |             |                     |
| ACCU-1                                     | OFFICE ADMIN      | ROOF          | 240,000                     | 22,600        | 95       | 12/18.1   | 20/20      | 25/25    | 460/3/60 | 1800         | NO          | PUHY-P240YKMU-A     |
| ACCU-2                                     | RESOURCE CENTER   | ROOF          | 96,000                      | 6,200         | 95       | 13.7/20.7 | 15         | 20       | 460/3/60 | 1000         | NO          | PUHY-P96YKMU-A      |
| ACCU-3                                     | 1ST FLR. AREA F   | ROOF          | 192,000                     | 17,500        | 95       | 12.5/19.1 | 20/12      | 25/15    | 460/3/60 | 1500         | NO          | PUHY-P192YKMU-A     |
| ACCU-4                                     | 1ST FLR. AREA B/F | ROOF          | 192,000                     | 17,500        | 95       | 12.5/19.1 | 20/12      | 25/15    | 460/3/60 | 1500         | NO          | PUHY-P192YKMU-A     |
| ACCU-5                                     | 1ST FLR. AREA A   | ROOF          | 192,000                     | 17,500        | 95       | 12.5/19.1 | 20/12      | 25/15    | 460/3/60 | 1500         | NO          | PUHY-P192YKMU-A     |
| ACCU-6                                     | 1ST FLR. AREA A/B | ROOF          | 192,000                     | 17,500        | 95       | 12.5/19.1 | 20/12      | 25/15    | 460/3/60 | 1500         | NO          | PUHY-P192YKMU-A     |
| ACCU-7                                     | 2ND FLR. ARA F    | ROOF          | 144,000                     | 11,300        | 95       | 11.8/20.2 | 24         | 30       | 460/3/60 | 1500         | NO          | PUHY-P144YKMU-A     |
| ACCU-8                                     | 2ND FLR. ARA B/F  | ROOF          | 144,000                     | 11,300        | 95       | 11.8/20.2 | 24         | 30       | 460/3/60 | 1500         | NO          | PUHY-P144YKMU-A     |
| ACCU-9                                     | 2ND FLR. AREA A   | ROOF          | 240,000                     | 22,600        | 95       | 12/18.1   | 20/20      | 25/25    | 460/3/60 | 1800         | NO          | PUHY-P240YKMU-A     |
| ACCU-10                                    | 2ND FLR. AREA A/B | ROOF          | 192,000                     | 17,500        | 95       | 12.5/19.1 | 20/12      | 25/15    | 460/3/60 | 1500         | NO          | PUHY-P192YKMU-A     |
| ACCU-11                                    | CAFETERIA         | ROOF          | 240,000                     | 22,600        | 95       | 12/18.1   | 20/20      | 25/25    | 460/3/60 | 1800         | NO          | PUHY-P240YKMU-A     |
| ACCU-12                                    | GYM               | ROOF          | 240,000                     | 22,600        | 95       | 12/18.1   | 20/20      | 25/25    | 460/3/60 | 1800         | NO          | PUHY-P240YKMU-A     |

- NOTES:
1. PROVIDE HOT GAS REHEAT FOR ALL UNITS.
  2. COORDINATE ALL CAPACITY REQUIREMENTS WITH INDOOR AIR HANDLING UNITS
  3. PROVIDE HAIL GUARD FOR ALL UNITS
  4. PROVIDE PHASE LOSS PROTECTION
  5. ALL UNITS SHALL BE PROVIDED WITH A MINIMUM OF 2 INDEPENDENT REFRIGERATION CIRCUITS
  6. ONE CIRCUIT MINIMUM SHALL UTILIZE A VARIABLE SPEED OR VARIABLE CAPACITY COMPRESSOR FOR PART LOAD CONDITIONS
  7. INSTALL REFRIGERANT PIPING AND ACCESSORIES PER THE MANUFACTURERS RECOMMENDATIONS
  8. COOLING CAPACITIES ARE BASED ON A MAXIMUM OF 45°F SATURATED SUCTION TEMPERATURE

|   |            |                    |                |                               |
|---|------------|--------------------|----------------|-------------------------------|
| DRAWING:<br>DOAS SCHEDULE                             | REV #<br>6 | DATE<br>04/22/2020 | Addendum<br>#6 | <div>G W</div> <div>W O</div> |
| PROJECT:<br>WAVERLEY ELEMENTARY SCHOOL<br>REPLACEMENT | SCALE:     |                    | SKETCH NO.     |                               |
|   | JOB NO.    | #18045             | ADD6.8         |                               |

DUCTLESS SPLIT SYSTEM SCHEDULE

| No<br>(SS-X) | SERVICE       | LOCATION   |           | MAX<br>CFM | REFRIGERANT<br>TYPE | COOLING<br>CAPACITY<br>(BTUs) | HEATING<br>CAPACITY<br>(BTUs) | INDOOR CONDITIONS |                | OUTDOOR<br>EAT DB<br>(°F) | ELECTRICAL |      |                    | INDOOR UNIT TYPE | INDOOR UNIT<br>SIZE<br>(L X W X H) | OUTDOOR UNIT<br>MAX OPERATING WT<br>(LBS) | BASED ON MITSUBISHI         |             |  |
|--------------|---------------|------------|-----------|------------|---------------------|-------------------------------|-------------------------------|-------------------|----------------|---------------------------|------------|------|--------------------|------------------|------------------------------------|---|-----------------------------|-------------|--|
|              |               | EVAPORATOR | CONDENSER |            |                     |                               |                               | EAT DB<br>(°F)    | EAT WB<br>(°F) |                           | V/ø/Hz     | MCA  | EMERGENCY<br>POWER |                  |                                    |   | EVAPORATOR                  | CONDENSER   | SPLIT SYSTEM<br>CONDENSING<br>UNIT No. |
| 1            | STORAGE A103A | A103A      | ROOF      | 562        | 410                 | 18000                         | 21000                         | 80                | 67             | 95                        | 208/1/60   | 10   | NO                 | WALL MOUNTED     | 37"x10"x12"                        | 90  | MSZ-WR18NA                  | MUZ-WR18NA  | SSCU-1                                 |
| 2            | STORAGE F117A | F117A      | ROOF      | 562        | 410                 | 18000                         | 21000                         | 80                | 67             | 95                        | 208/1/60   | 10   | NO                 | WALL MOUNTED     | 37"x10"x12"                        | 90  | MSZ-WR18NA                  | MUZ-WR18NA  | SSCU-2                                 |
| 3            | MDF C121      | C121       | PH101     | 775        | 410                 | 24000                         | -                             | 80                | 67             | 95                        | 208/1/60   | 10   | YES                | WALL MOUNTED     | 46"x12"x14"                        | 151                                       | PKA-A24KA7                  | PUR-A24NA7  | SSCU-3                                 |
| 4            | OFFICE C105A  | C105A      | ROOF      | 335        | 410                 | 9000                          | 11000                         | 80                | 67             | 95                        | 208/1/60   | 22.1 | NO                 | CEILING MOUNTED  | 24"x24"x10"                        | 140                                       | SLZ-KF09NA-TH<br>PLA-A18EA7 | MXZ-2C30NA2 | SSCU-4                                 |
| 5            | STORAGE C106  | C106       | ROOF      | 600        | 410                 | 18000                         | 19000                         | 80                | 67             | 95                        | 208/1/60   | 17.2 | NO                 | CEILING MOUNTED  | 33"x33"x10"                        | 150                                       | SLZ-KF09NA-TH<br>PLA-A18EA7 | MXZ-2C30NA2 | SSCU-4                                 |
| 6            | OFFICE C105   | C105       | ROOF      | 335        | 410                 | 9000                          | 11000                         | 80                | 67             | 95                        | 208/1/60   |      | NO                 | CEILING MOUNTED  | 24"x24"x10"                        |   | SLZ-KF09NA-TH               | MXZ-2C20NA2 | SSCU-5                                 |
| 7            | STORAGE C104  | C104       | ROOF      | 335        | 410                 | 9000                          | 11000                         | 80                | 67             | 95                        | 208/1/60   |      | NO                 | CEILING MOUNTED  | 24"x24"x10"                        |   | SLZ-KF09NA-TH               | SUZ-KA09NA2 | SSCU-6                                 |
| 8            | OFFICE D104   | D104       | ROOF      | 335        | 410                 | 9000                          | 11000                         | 80                | 67             | 95                        | 208/1/60   |      | NO                 | CEILING MOUNTED  | 24"x24"x10"                        | 90  | SLZ-KF09NA-TH               | SUZ-KA09NA2 | SSCU-6                                 |
| 9            | OFFICE C110   | C110       | ROOF      | 335        | 410                 | 9000                          | 11000                         | 80                | 67             | 95                        | 208/1/60   | 9    | NO                 | CEILING MOUNTED  | 24"x24"x10"                        | 90  | SLZ-KF09NA-TH               | SUZ-KA09NA2 | SSCU-7                                 |
| 10           | IDF A204A     | A204A      | ROOF      | 399        | 410                 | 12000                         | 14500                         | 80                | 67             | 95                        | 208/1/60   | 9    | YES                | WALL MOUNTED     | 32"x9"x11"                         | 73  | MSZ-WR12NA                  | MUZ-WR12NA  | SSCU-8                                 |
| 11           | IDF F218B     | F218B      | ROOF      | 399        | 410                 | 12000                         | 14500                         | 80                | 67             | 95                        | 208/1/60   | 9    | YES                | WALL MOUNTED     | 32"x9"x11"                         | 73  | MSZ-WR12NA                  | MUZ-WR12NA  | SSCU-9                                 |

- NOTES: 1. BASED ON MITSUBISHI ELECTRIC WITH ADVANCED MICROPROCESSOR CONTROLLER, OR EQUAL OF DAIKIN INVERTER DRIVEN COMPRESSOR R410A REFRIGERANT AND DEHUMIDIFICATION MODE, 165' REFRIGERANT LINE LENGTH, 100' LIFT
2. FOR CONDENSING UNITS LOCATED ON ROOF, PROVIDE LOW AMBIENT CONTROL (COOLING TO 0°F OUTDOOR AIR TEMPERATURE) AND WIND BAFFLE.

VARIABLE REFRIGERANT CONDENSING UNIT SCHEDULE

| UNIT    | AREA SERVED         | UNIT LOCATION | COOLING<br>CAPACITY<br>(BTU) | OAT (°F) | HEATING<br>CAPACITY<br>(BTU) | OAT (°F) | EER/IEER  | COP <sup>1</sup><br>@ 47°F | ELECTRICAL |             |          | WEIGHT<br>(LBS) | EMER.<br>POWER | BASED ON<br>MITSUBISHI |
|---------|---------------------|---------------|------------------------------|----------|------------------------------|----------|-----------|----------------------------|------------|-------------|----------|-----------------|----------------|------------------------|
|         |                     |               |                              |          |                              |          |           |                            | MCA        | MAX<br>FUSE | V/ø/Hz   |                 |                |                        |
| COND-1  | OFFICE/ADMIN        | ROOF          | 312,000                      | 95       | 350,000                      | 10       | 10.9/26.1 | 3.36                       | 57/49      | 90/80       | 208/3/60 | 1500            | NO             | PURY-EP312TSNU-A       |
| COND-2  | RESOURCE CENTER     | ROOF          | 216,000                      | 95       | 243,000                      | 10       | 13.5/30.4 | 3.89                       | 41/31      | 60/45       | 208/3/60 | 1300            | NO             | PURY-EP216TSNU-A       |
| COND-3  | 1ST FLR. AREA F     | ROOF          | 240,000                      | 95       | 270,000                      | 10       | 12.2/27.4 | 3.58                       | 41/41      | 60/60       | 208/3/60 | 1400            | NO             | PURY-EP240TSNU-A       |
| COND-4  | 1ST FLR. AREA A B/F | ROOF          | 240,000                      | 95       | 270,000                      | 10       | 12.2/27.4 | 3.58                       | 41/41      | 60/60       | 208/3/60 | 1400            | NO             | PURY-EP240TSNU-A       |
| COND-5  | 1ST FLR. AREA A     | ROOF          | 240,000                      | 95       | 270,000                      | 10       | 12.2/27.4 | 3.58                       | 41/41      | 60/60       | 208/3/60 | 1400            | NO             | PURY-EP240TSNU-A       |
| COND-6  | 1ST FLR. AREA A/B   | ROOF          | 264,000                      | 95       | 295,000                      | 10       | 11.9/27.4 | 3.53                       | 49/41      | 80/60       | 208/3/60 | 1400            | NO             | PURY-EP264TSNU-A       |
| COND-7  | 2ND FLR. AREA F     | ROOF          | 264,000                      | 95       | 295,000                      | 10       | 11.9/27.4 | 3.53                       | 49/41      | 80/60       | 208/3/60 | 1400            | NO             | PURY-EP264TSNU-A       |
| COND-8  | 2ND FLR. AREA B/F   | ROOF          | 264,000                      | 95       | 295,000                      | 10       | 11.9/27.4 | 3.53                       | 49/41      | 80/60       | 208/3/60 | 1400            | NO             | PURY-EP264TSNU-A       |
| COND-9  | 2ND FLR. AREA A     | ROOF          | 288,000                      | 95       | 323,000                      | 10       | 11.5/27.4 | 3.46                       | 49/49      | 80/80       | 208/3/60 | 1400            | NO             | PURY-EP288TSNU-A       |
| COND-10 | 2ND FLR. AREA A/B   | ROOF          | 336,000                      | 95       | 378,000                      | 10       | 10.3/24.9 | 3.29                       | 57/57      | 90/90       | 208/3/60 | 1600            | NO             | PURY-EP336TSNU-A       |
| COND-11 | KITCHEN & STAGE     | ROOF          | 120,000                      | 95       | 135,000                      | 10       | 13.8/30.1 | 4.04                       | 41         | 60          | 208/3/60 | 800             | NO             | PURY-EP120TNU-A        |

- NOTES:
1. COOLING BASED ON EAT AT 80°F DB/67°FWB INDOOR COIL, 95°F OUTSIDE AIR TEMP
2. HEATING BASED ON 70°F DB EAT INDOOR COIL
3. PROVIDE LOW AMBIENT HOOD KIT WITH WIND BAFFLES DOWN TO -10°F

DRAWING:  
MECHANICAL SCHEDULES

PROJECT:  
WAVERLEY ELEMENTARY SCHOOL  
REPLACEMENT

REV #  
6

DATE  
04/22/2020

SCALE:

JOB NO. #18045

Addendum  
#6

SKETCH NO.  
ADD6.9



Branch Panel: KP

LOCATION: DISHWASHING FS108  
SUPPLY FROM: MSB  
MOUNTING: Recessed

VOLTAGE: 480/277 Wye  
PHASE: 3  
WIRES: 4

A.I.C. RATING: 14 kAIC  
MAINS RATING: 400 A  
MCB RATING: 300 A  
NEUTRAL RATING: 100%

Notes:

| CKT                   | CIRCUIT                                  | WIRE SIZE                 | P | CB            | A        |                  | B        |                     | C        |           | CB   | P | WIRE SIZE              | CIRCUIT                                | CKT   |
|-----------------------|--|---------------------------|---|---------------|----------|------------------|----------|---------------------|----------|-----------|------|---|------------------------|--|-------|
| KP-1                  | 480V UTILITY RACEWAY (12) - KITCHEN C102 | (4) #4/0 + #4GW - 2-1/2"C | 3 | 225 A         | 40.7...  | 10.1 kVA         |          |                     |          |           | 50 A | 3 | (3) #6 + #10GW - 3/4"C | BOOSTER HEATER (26)- DISHWASHING FS108 | KP-2  |
| KP-3                  |  |                           |   |               |          |                  | 40.7 kVA | 10.1 kVA            |          |           |      |   |                        |  | KP-4  |
| KP-5                  |  |                           |   |               |          |                  |          |                     | 40.7 kVA | 10.1...   |      |   |                        |  | KP-6  |
| KP-7                  | DISHMACHINE - DISHWASHING FS108          | (3) #10 + #10GW - 3/4"C   | 3 | 25 A          | 5.1 kVA  |                  |          |                     |          |           |      |   |                        |  | KP-8  |
| KP-9                  |  |                           |   |               |          |                  | 5.1 kVA  |                     |          |           |      |   |                        | KP-10                                  |       |
| KP-11                 |  |                           |   |               |          |                  |          |                     | 5.1 kVA  |           |      |   |                        | KP-12                                  |       |
| KP-13                 | SPARE                                    | --                        | 1 | 20 A          | 0.0 kVA  |                  |          |                     |          |           |      |   |                        |  | KP-14 |
| KP-15                 | SPARE                                    | --                        | 1 | 20 A          |          |                  | 0.0 kVA  |                     |          |           |      |   |                        |  | KP-16 |
| KP-17                 | SPARE                                    | --                        | 1 | 20 A          |          |                  |          |                     | 0.0 kVA  |           |      |   |                        |  | KP-18 |
| KP-19                 | SPARE                                    | --                        | 1 | 20 A          | 0.0 kVA  |                  |          |                     |          |           |      |   |                        |  | KP-20 |
| KP-21                 | SPARE                                    | --                        | 1 | 20 A          |          |                  | 0.0 kVA  |                     |          |           |      |   |                        |  | KP-22 |
| KP-23                 | SPARE                                    | --                        | 1 | 20 A          |          |                  |          |                     | 0.0 kVA  |           |      |   |                        |  | KP-24 |
| KP-25                 |  |                           |   |               |          |                  |          |                     |          |           |      |   |                        |  | KP-26 |
| KP-27                 |  |                           |   |               |          |                  |          |                     |          |           |      |   |                        |  | KP-28 |
| KP-29                 |  |                           |   |               |          |                  |          |                     |          |           |      |   |                        |  | KP-30 |
| Total Connected Load: |  |                           |   |               | 167.4... | 55.8 kVA         | 55.8 kVA | 55.8 kVA            |          |           |      |   |                        |  |       |
| Legend:               |  |                           |   |               |          |                  |          |                     |          |           |      |   |                        |  |       |
| LOAD CLASSIFICATION   |  | CONNECTED LOAD            |   | DEMAND FACTOR |          | ESTIMATED DEMAND |          | PANELBOARD TOTALS   |          |           |      |   |                        |  |       |
| EQUIPMENT -           |  | 122.4 kVA                 |   | 100.00%       |          | 122.4 kVA        |          | Total Conn. Load:   |          | 167.4 kVA |      |   |                        |  |       |
| REC -                 |  | 0.0 kVA                   |   | 0.00%         |          | 0.0 kVA          |          | Total Est. Demand:  |          | 167.4 kVA |      |   |                        |  |       |
| MECHANICAL -          |  | 0.0 kVA                   |   | 0.00%         |          | 0.0 kVA          |          | Total Conn.:        |          | 201 A     |      |   |                        |  |       |
| LTG. -                |  | 0.0 kVA                   |   | 0.00%         |          | 0.0 kVA          |          | Total Est. Demand.: |          | 201 A     |      |   |                        |  |       |
|                       |  |                           |   |               |          |                  |          |                     |          |           |      |   |                        |  |       |

DRAWING:  
ELECTRICAL SCHEDULES

PROJECT:  
WAVERLEY ELEMENTARY SCHOOL  
REPLACEMENT

REV #  
6

DATE  
04/22/2020

SCALE:

JOB NO. #18045

Addendum  
#6

SKETCH NO.  
ADD6.10

G|W

W|O

Branch Panel: KR

LOCATION: DISHWASHING FS108  
SUPPLY FROM: TKR  
MOUNTING: Recessed

VOLTAGE: 120/208 Wye  
PHASE: 3  
WIRES: 4

A.I.C. RATING: 10 kAIC  
MAINS RATING: 225 A  
MCB RATING: 225 A  
NEUTRAL RATING: 100%

Notes:

| CKT   | CIRCUIT                                     | WIRE SIZE               | P | CB   | A       |         | B       |         | C       |         | CB   | P | WIRE SIZE               | CIRCUIT                       | CKT   |
|-------|---|-------------------------|---|------|---------|---------|---------|---------|---------|---------|------|---|-------------------------|-------------------------------|-------|
| KR-1  | REC (1) - RECEIVING FS109                   | (2) #12 #12GW - 3/4"C   | 1 | 20 A | 1.0 kVA | 1.0 kVA |         |         |         |         | 20 A | 1 | (2) #12 #12GW - 3/4"C   | REC (10) - KITCHEN C102       | KR-2  |
| KR-3  | REC (10) - KITCHEN C102                     | (2) #12 #12GW - 3/4"C   | 1 | 20 A |         |         | 1.0 kVA | 1.8 kVA |         |         | 20 A | 1 | (2) #12 #12GW - 3/4"C   | REC (17) - KITCHEN C102       | KR-4  |
| KR-5  | REC (10) - KITCHEN C102                     | (2) #12 #12GW - 3/4"C   | 1 | 20 A |         |         |         |         | 1.0 kVA | 1.0 kVA | 20 A | 1 | (2) #12 #12GW - 3/4"C   | REC (10) - KITCHEN C102       | KR-6  |
| KR-7  | REC (17) - KITCHEN C102                     | (2) #12 #12GW - 3/4"C   | 1 | 20 A | 1.8 kVA | 1.0 kVA |         |         |         |         | 20 A | 1 | (2) #12 + #12GW - 3/4"C | REC (10) - KITCHEN C102       | KR-8  |
| KR-9  | REC (10) - KITCHEN C102                     | (2) #12 + #12GW - 3/4"C | 1 | 20 A |         |         | 1.0 kVA | 0.9 kVA |         |         | 20 A | 1 | (2) #12 + #12GW - 3/4"C | REC (16) - KITCHEN C102       | KR-10 |
| KR-11 | REC (15) - KITCHEN C102                     | (3) #12 + #12GW - 3/4"C | 2 | 20 A |         |         |         |         | 0.8 kVA | 1.0 kVA | 20 A | 1 | (2) #12 #12GW - 3/4"C   | REC (18) - KITCHEN C102       | KR-12 |
| KR-13 |   |                         |   |      | 0.8 kVA | 0.8 kVA |         |         |         |         | 20 A | 2 | (3) #12 + #12GW - 3/4"C | REC (15) - KITCHEN C102       | KR-14 |
| KR-15 | REC (16) - KITCHEN C102                     | (2) #12 + #12GW - 3/4"C | 1 | 20 A |         |         | 0.9 kVA | 0.8 kVA |         |         | 20 A | 2 | (3) #12 + #12GW - 3/4"C | REC (15) - KITCHEN C102       | KR-16 |
| KR-17 | REC (23) - KITCHEN C102                     | (2) #12 + #12GW - 3/4"C | 1 | 20 A |         |         |         |         | 0.4 kVA | 0.2 kVA | 20 A | 1 | (2) #12 + #12GW - 3/4"C | REC (24) - KITCHEN C102       | KR-18 |
| KR-19 | REC (21) - KITCHEN C102                     | (2) #12 + #12GW - 3/4"C | 1 | 20 A | 0.5 kVA | 0.5 kVA |         |         |         |         | 20 A | 1 | (2) #12 + #12GW - 3/4"C | REC (21) - KITCHEN C102       | KR-20 |
| KR-21 | REC (22) - KITCHEN C102                     | (2) #12 + #12GW - 3/4"C | 1 | 20 A |         |         | 1.0 kVA | 0.2 kVA |         |         | 20 A | 1 | (2) #12 + #12GW - 3/4"C | REC (24) - KITCHEN C102       | KR-22 |
| KR-23 | REC (23) - KITCHEN C102                     | (2) #12 + #12GW - 3/4"C | 1 | 20 A |         |         |         |         | 0.4 kVA | 0.2 kVA | 20 A | 1 | (2) #12 + #12GW - 3/4"C | REC (24) - KITCHEN C102       | KR-24 |
| KR-25 | REC (23a) - KITCHEN C102                    | (2) #12 + #12GW - 3/4"C | 1 | 20 A | 0.4 kVA | 4.2 kVA |         |         |         |         | 50 A | 2 | (3) #6 + #10GW - 3/4"C  | REC (20) - KITCHEN C102       | KR-26 |
| KR-27 | REC (20) - KITCHEN C102                     | (3) #6 + #10GW - 3/4"C  | 2 | 50 A |         |         | 4.2 kVA | 4.2 kVA |         |         |      |   |                         |                               | KR-28 |
| KR-29 |   |                         |   |      |         |         |         |         | 4.2 kVA | 4.2 kVA | 20 A | 2 | (3) #6 + #10GW - 3/4"C  | REC (20) - KITCHEN C102       | KR-30 |
| KR-31 | REC (20) - KITCHEN C102                     | (3) #6 + #10GW - 3/4"C  | 2 | 50 A | 4.2 kVA | 4.2 kVA |         |         |         |         |      |   |                         |                               | KR-32 |
| KR-33 |   |                         |   |      |         |         | 4.2 kVA | 1.1 kVA |         |         | 20 A | 1 | (2) #12 #12GW - 3/4"C   | EQUIPMENT (19) - KITCHEN C102 | KR-34 |
| KR-35 | REC (22) - KITCHEN C102                     | (2) #12 #12GW - 3/4"C   | 1 | 20 A |         |         |         |         | 1.0 kVA | 3.1 kVA | 40 A | 2 | (3) #8 + #10GW - 3/4"C  | REC - LOCKERS C103            | KR-36 |
| KR-37 | REC (27) - LOCKERS C103                     | (2) #12 #12GW - 3/4"C   | 1 | 20 A | 1.8 kVA | 3.1 kVA |         |         |         |         |      |   |                         |                               | KR-38 |
| KR-39 | EQUIPMENT (31) - KITCHEN C102               | (3) #12 + #12GW - 3/4"C | 3 | 15 A |         |         | 0.9 kVA | 0.9 kVA |         |         | 15 A | 3 | (3) #12 + #12GW - 3/4"C | EQUIPMENT (29) - KITCHEN C102 | KR-40 |
| KR-41 |   |                         |   |      |         |         |         |         | 0.9 kVA | 0.9 kVA |      |   |                         |                               | KR-42 |
| KR-43 |   |                         |   |      | 0.9 kVA | 0.9 kVA |         |         |         |         |      |   |                         |                               | KR-44 |
| KR-45 | 120/208 UTILITY RACEWAY (11) - KITCHEN C102 | (4) #8 + #10GW - 3/4"C  | 3 | 40 A |         |         | 3.8 kVA | 0.2 kVA |         |         | 20 A | 1 | (2) #12 + #12GW - 3/4"C | AIR SCREEN (5)                | KR-46 |
| KR-47 |   |                         |   |      |         |         |         |         | 3.8 kVA | 2.4 kVA | 20 A | 1 | (2) #12 + #12GW - 3/4"C | AIR SCREEN (5)                | KR-48 |
| KR-49 |   |                         |   |      | 3.8 kVA | 2.4 kVA |         |         |         |         | 20 A | 1 | (2) #12 + #12GW - 3/4"C | AIR SCREEN (5)                | KR-50 |
| KR-51 | SPARE                                       | --                      | 1 | 20 A |         |         | 0.0 kVA | 0.7 kVA |         |         | 20 A | 1 | (2) #12 #12GW - 3/4"C   | MECHANICAL - ROOM C103, C103A | KR-52 |
| KR-53 | SPARE                                       | --                      | 1 | 20 A |         |         |         |         | 0.0 kVA |         |      |   |                         |                               | KR-54 |
| KR-55 | SPARE                                       | --                      | 1 | 20 A | 0.0 kVA |         |         |         |         |         |      |   |                         |                               | KR-56 |
| KR-57 | SPARE                                       | --                      | 1 | 20 A |         |         | 0.0 kVA |         |         |         |      |   |                         |                               | KR-58 |
| KR-59 | SPARE                                       | --                      | 1 | 20 A |         |         |         |         | 0.0 kVA |         |      |   |                         |                               | KR-60 |
| KR-61 | SPARE                                       | --                      | 1 | 20 A | 0.0 kVA |         |         |         |         |         |      |   |                         |                               | KR-62 |
| KR-63 | SPARE                                       | --                      | 1 | 20 A |         |         | 0.0 kVA |         |         |         |      |   |                         |                               | KR-64 |
| KR-65 | SPARE                                       | --                      | 1 | 20 A |         |         |         |         | 0.0 kVA |         |      |   |                         |                               | KR-66 |

Total Connected Load: 86.3... 33.2 kVA 27.7 kVA 25.4 kVA

Legend:

| LOAD CLASSIFICATION | CONNECTED LOAD | DEMAND FACTOR | ESTIMATED DEMAND | PANELBOARD TOTALS           |
|---------------------|----------------|---------------|------------------|-----------------------------|
| EQUIPMENT -         | 23.0 kVA       | 100.00%       | 23.0 kVA         | Total Conn. Load: 86.3 kVA  |
| REC -               | 62.6 kVA       | 57.99%        | 36.3 kVA         | Total Est. Demand: 60.0 kVA |
| MECHANICAL -        | 0.7 kVA        | 100.00%       | 0.7 kVA          | Total Conn.: 240 A          |
| LTG. -              | 0.0 kVA        | 0.00%         | 0.0 kVA          | Total Est. Demand.: 167 A   |
|                     |                |               |                  |                             |

DRAWING:  
ELECTRICAL SCHEDULES

PROJECT:  
WAVERLEY ELEMENTARY SCHOOL  
REPLACEMENT

REV # 6  
DATE 04/22/2020

SCALE:  
JOB NO. #18045

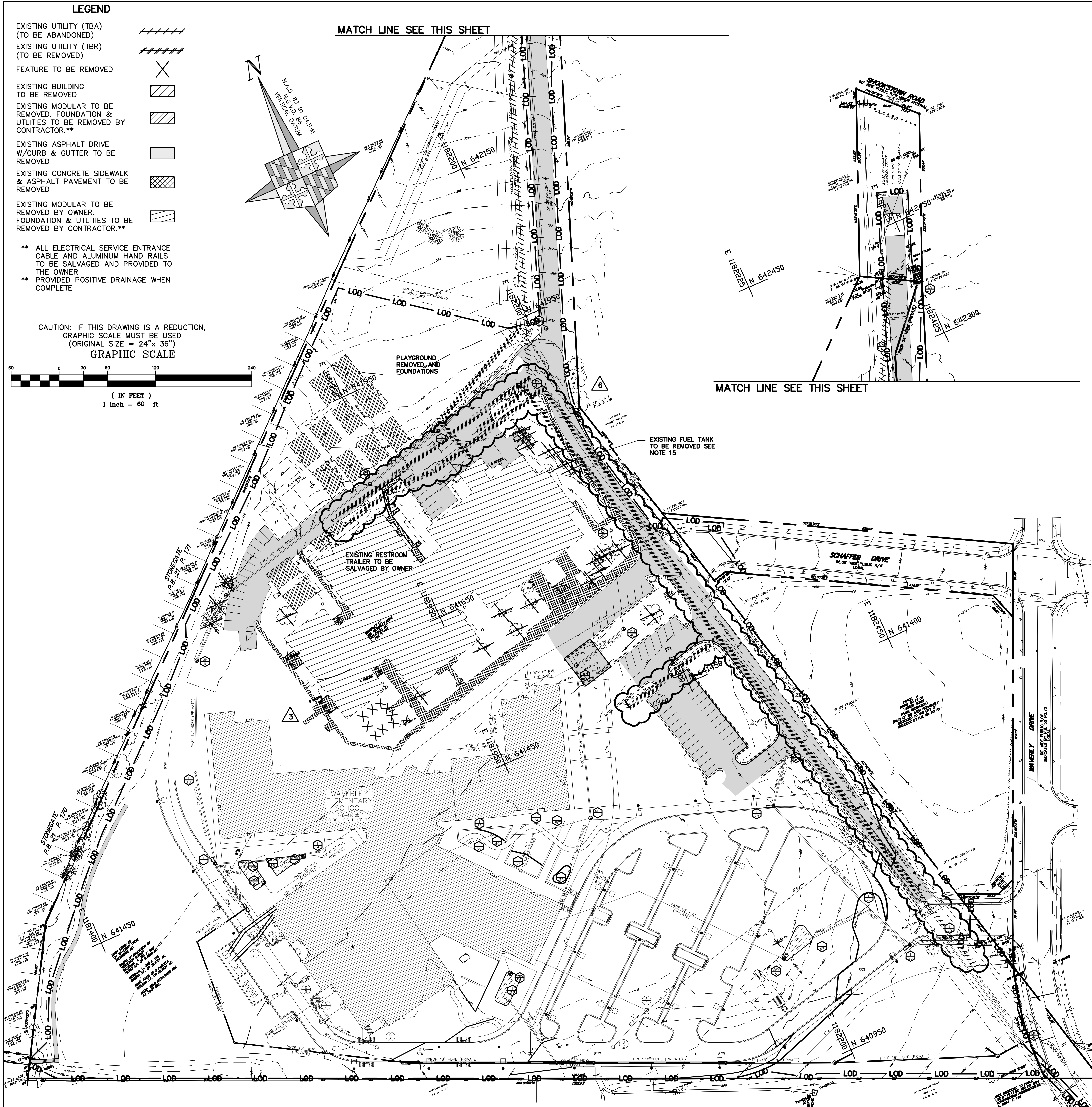
Addendum  
#6

SKETCH NO.  
ADD6.11



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**CITY OF FREDERICK**

APPROVED: \_\_\_\_\_ FOR CONSTRUCTION

DATE: \_\_\_\_\_

CITY ENGINEER: \_\_\_\_\_

CONSTRUCTION APPROVAL BY CITY ENGINEER VALID FOR A PERIOD OF TWO (2) YEARS FROM DATE OF APPROVAL. IF A BONA FIDE ATTEMPT TO COMMENCE CONSTRUCTION HAS NOT BEEN IN THIS TWO (2) YEARS PERIOD, CITY APPROVAL SHALL BE NULL AND VOID.

ALL APPROVALS ARE SUBJECT TO THE WATER ALLOCATION ORDINANCE AND IN NO WAY IMPLY ALLOCATION OF WATER. THE OWNER/DEVELOPER PROCEEDS WITH ANY IMPROVEMENTS AT HIS/HER SOLE RISK.

| REV. NO. | REVISION DESCRIPTION<br>(FOR REVISIONS TO PREVIOUSLY APPROVED PLANS) | CONSULTANT:<br>DATE AND INITIAL | CITY ENGINEER:<br>DATE AND INITIAL |
|----------|--|---------------------------------|------------------------------------|
|          |  |                                 |                                    |
|          |  |                                 |                                    |
|          |  |                                 |                                    |
|          |  |                                 |                                    |

**ISSUE FOR BID**

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800 WYMAN PARK DRIVE, SUITE 300  
BALTIMORE, MARYLAND 21211, 410-531-1099

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Revisions:

| No. | Date       | Description |
|-----|------------|-------------|
| 3   | 04/03/2020 | ADDENDUM #3 |
| 6   | 04/22/2020 | ADDENDUM #6 |

**Waverley Elementary School Replacement**

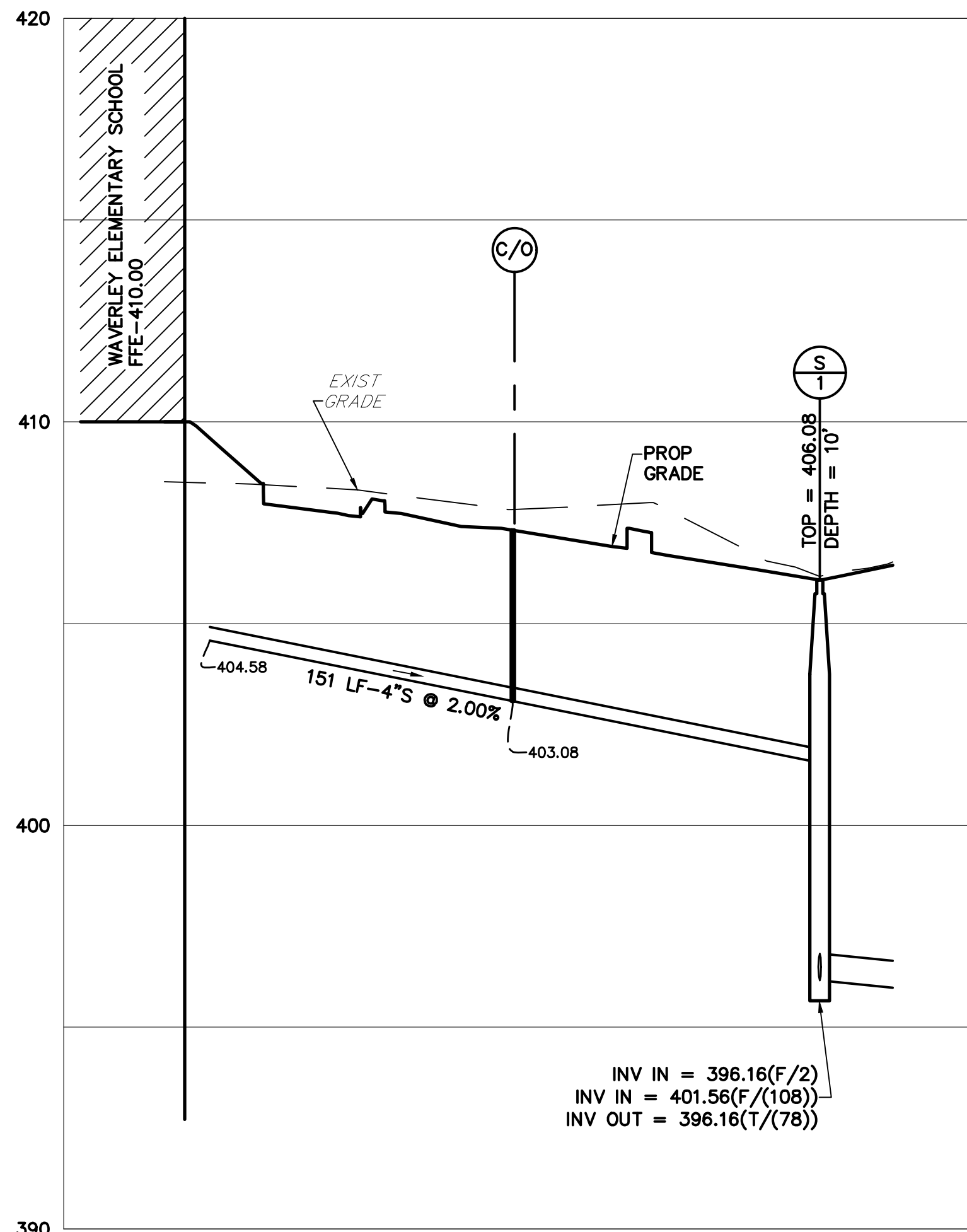
201 Waverley Drive, Frederick, MD  
TAX MAP: 406 PARCEL 1539, PB-100 P. 58 ELECTION DISTRICT: 02  
FREDERICK COUNTY PUBLIC SCHOOLS

| Job No.       | #18045                        | JEB                   | Drawn          |
|---------------|-------------------------------|-----------------------|----------------|
| Scale         | 1"=60'                        | JRB <td>Checked</td>  | Checked        |
| Date          | 03/16/2020                    | SPB <td>Approved</td> | Approved       |
| Drawing Title | PHASE 3<br>DEMOLITION<br>PLAN |                       | Drawing Number |

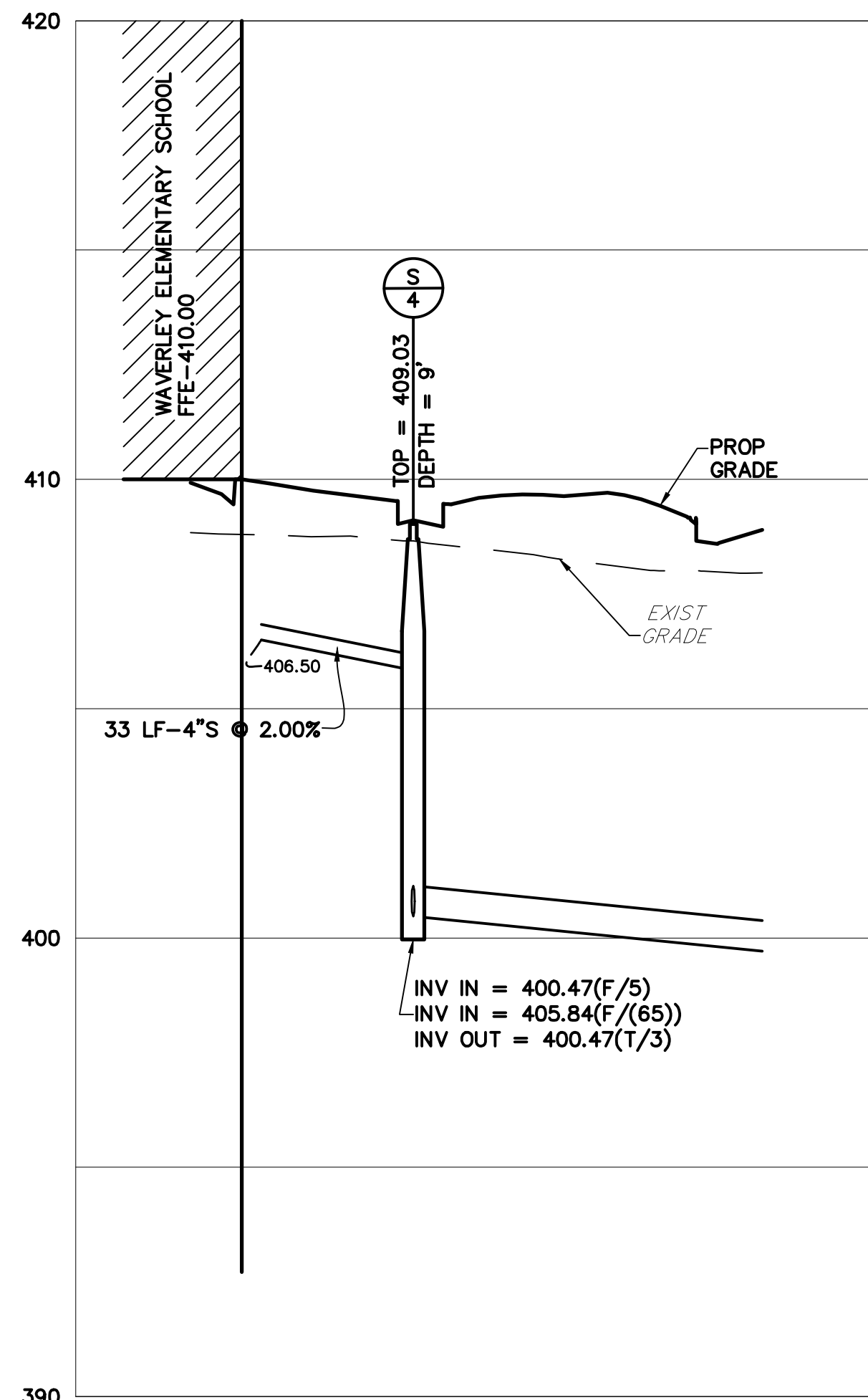
Sheet **C-1D** Of

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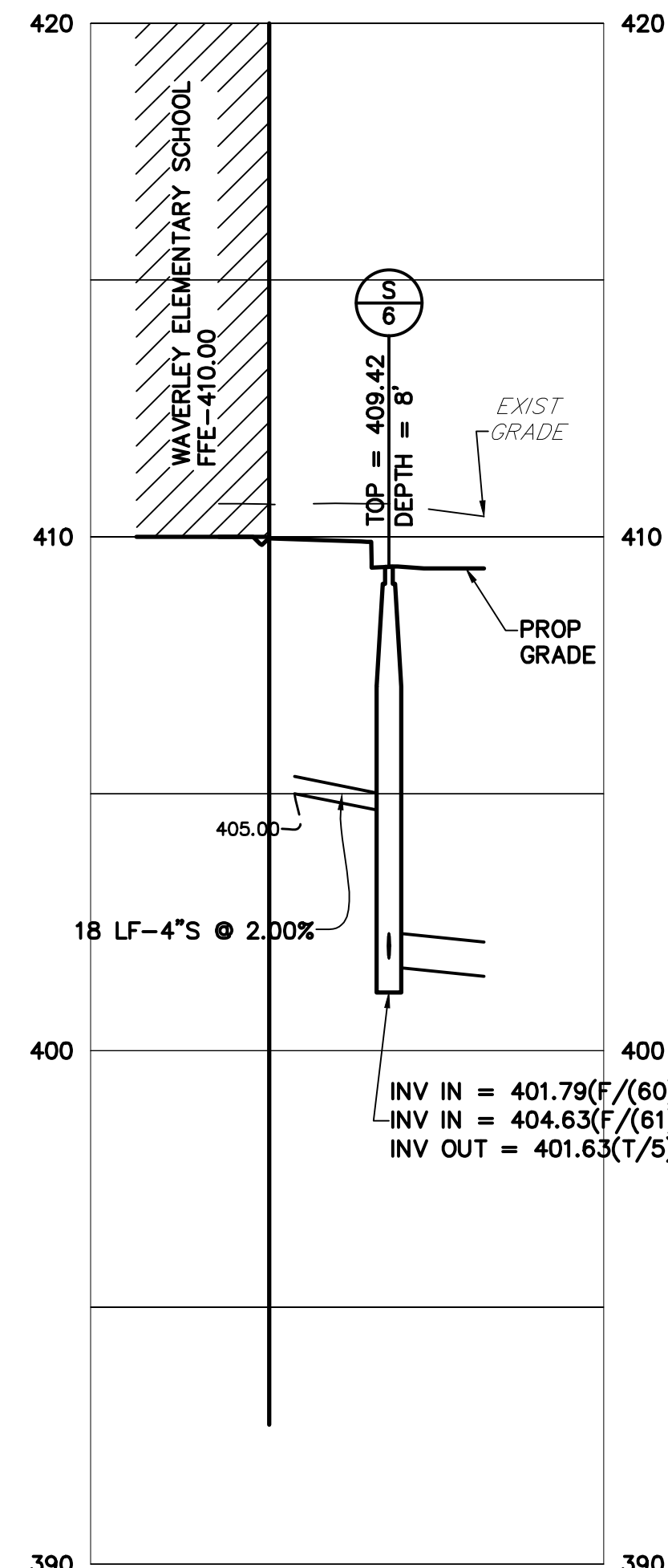
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**BUILDING TO S-1**  
SCALE: 1" = 30'(HORIZ) 1" = 3'(VERT)




**BUILDING TO S-4**  
SCALE: 1" = 30'(HORIZ) 1" = 3'(VERT)



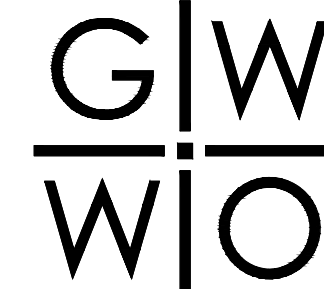
**BUILDING TO S-6**  
SCALE: 1" = 30'(HORIZ) 1" = 3'(VERT)

|   |  |                                 |                                    |
|---|--|---------------------------------|------------------------------------|
| CITY OF FREDERICK   |  |                                 |                                    |
| APPROVED: _____ FOR CONSTRUCTION  |  |                                 |                                    |
| DATE: _____   |  |                                 |                                    |
| CITY ENGINEER: _____  |  |                                 |                                    |
| CONSTRUCTION APPROVAL BY CITY ENGINEER VALID FOR A PERIOD OF TWO (2) YEARS FROM DATE OF APPROVAL. IF A BONA FIDE ATTEMPT TO COMMENCE CONSTRUCTION HAS NOT BEGUN IN THIS TWO (2) YEARS PERIOD, CITY APPROVAL SHALL BE NULL AND VOID. |  |                                 |                                    |
| ALL APPROVALS ARE SUBJECT TO THE WATER ALLOCATION ORDINANCE AND IN NO WAY IMPLY ALLOCATION OF WATER. THE OWNER/DEVELOPER PROCEEDS WITH ANY IMPROVEMENTS AT HIS/HER SOLE RISK.   |  |                                 |                                    |
| REV. NO.  | REVISION DESCRIPTION<br>(FOR REVISIONS TO PREVIOUSLY APPROVED PLANS) | CONSULTANT:<br>DATE AND INITIAL | CITY ENGINEER:<br>DATE AND INITIAL |
|   |  |                                 |                                    |
|   |  |                                 |                                    |
|   |  |                                 |                                    |
|   |  |                                 |                                    |
|   |  |                                 |                                    |

ISSUE FOR BID



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|            |            |             |
|------------|------------|-------------|
| Revisions: |            |             |
| No.        | Date       | Description |
| 3          | 04/03/2020 | ADDENDUM #3 |
| 6          | 04/22/2020 | ADDENDUM #6 |

**WAVERLEY ELEMENTARY  
SCHOOL REPLACEMENT**  
201 WAVERLEY DRIVE, FREDERICK, MD  
TAX MAP: 406 PARCEL 1639, PB-100 P. 58 ELECTION DISTRICT: 02  
FREDERICK COUNTY PUBLIC SCHOOLS

Job No. #18045 JEB

Scale 1"=60' JRB

Date 03/16/2020 SPB

Drawing Title SEWER PROFILES

Drawn JRB

Checked JRB

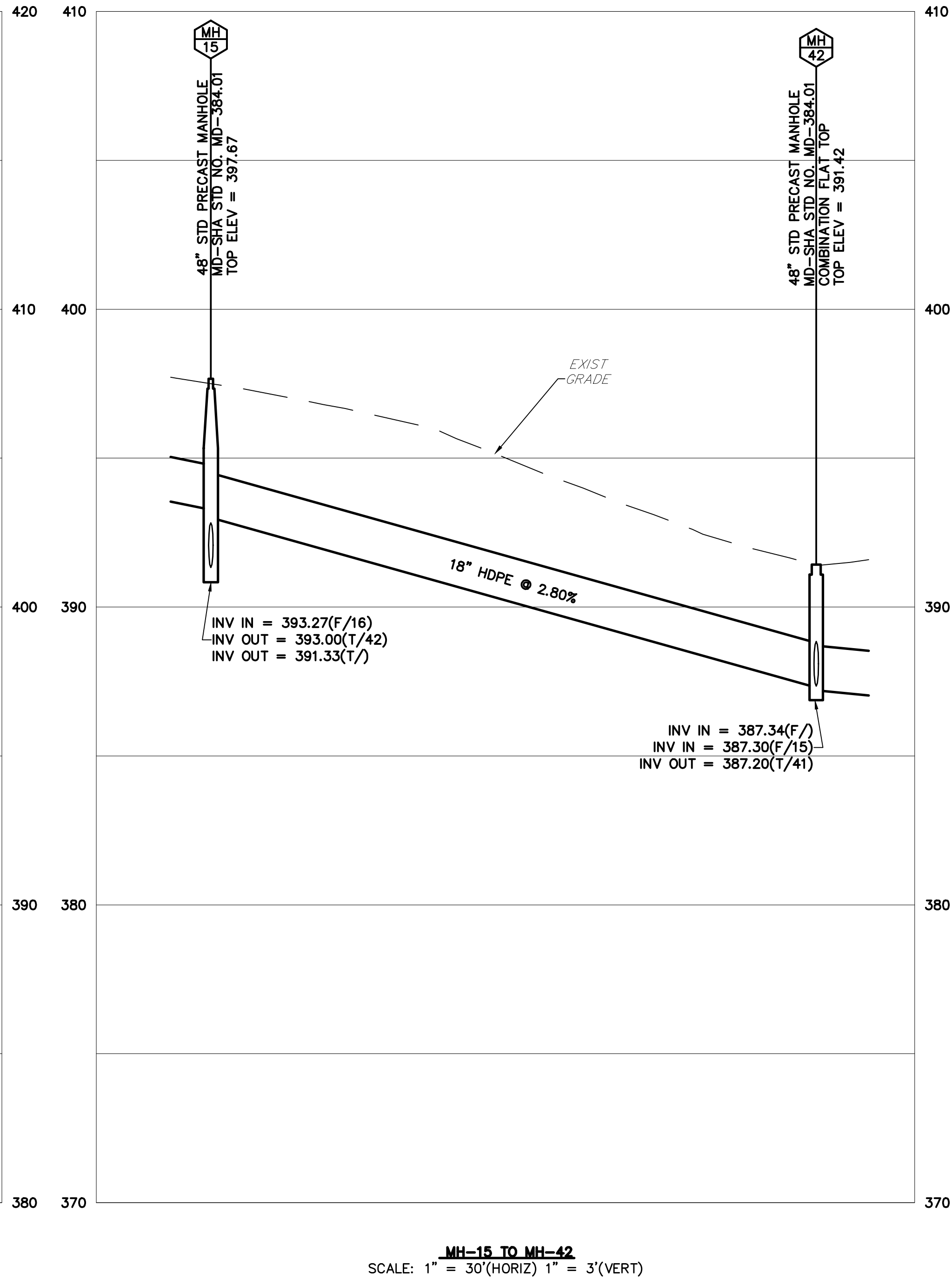
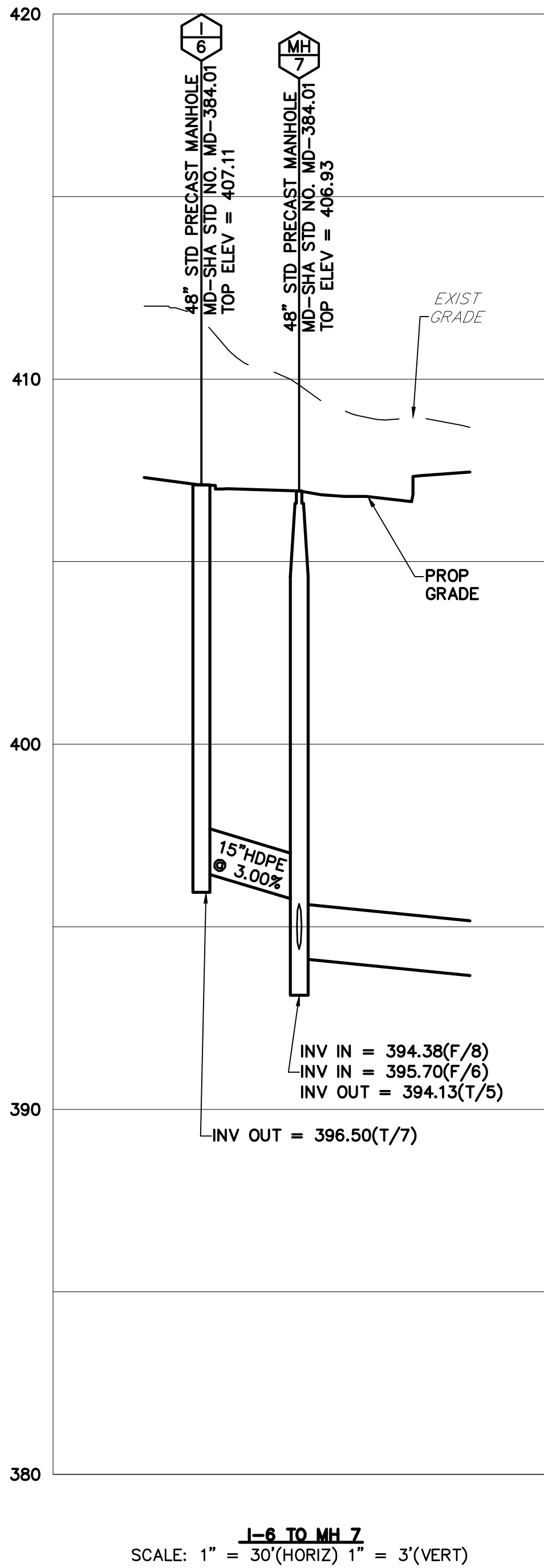
Approved SPB

Drawing Number C-3K.1


Sheet 8 of 8

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| CITY OF FREDERICK   |   |                              |                                 |
|---|---|------------------------------|---------------------------------|
| APPROVED: _____   |   | FOR CONSTRUCTION             |                                 |
| DATE: _____   |   |                              |                                 |
| CITY ENGINEER: _____  |   |                              |                                 |
| CONSTRUCTION APPROVAL BY CITY ENGINEER VALID FOR A PERIOD OF TWO (2) YEARS FROM DATE OF APPROVAL. IF A BONA FIDE ATTEMPT TO COMMENCE CONSTRUCTION HAS NOT BEGUN IN THIS TWO (2) YEARS PERIOD, CITY APPROVAL SHALL BE NULL AND VOID. |   |                              |                                 |
| ALL APPROVALS ARE SUBJECT TO THE WATER ALLOCATION ORDINANCE AND IN NO WAY IMPLY ALLOCATION OF WATER. THE OWNER/DEVELOPER PROCEEDS WITH ANY IMPROVEMENTS AT HIS/HER SOLE RISK.   |   |                              |                                 |
| REV. NO.  | REVISION DESCRIPTION (FOR REVISIONS TO PREVIOUSLY APPROVED PLANS) | CONSULTANT: DATE AND INITIAL | CITY ENGINEER: DATE AND INITIAL |
|   |   |                              |                                 |
|   |   |                              |                                 |
|   |   |                              |                                 |
|   |   |                              |                                 |
|   |   |                              |                                 |
|   |   |                              |                                 |



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Seal:

Seal:

| Revisions: |            |             |
|------------|------------|-------------|
| No.        | Date       | Description |
| 3          | 04/03/2020 | ADDENDUM #3 |
| 6          | 04/22/2020 | ADDENDUM #6 |

WAVERLEY ELEMENTARY  
SCHOOL REPLACEMENT

201 WAVERLEY DRIVE, FREDERICK, MD  
TAX MAP: 406 PARCEL 1639; PB 100 P. 58 ELECTION DISTRICT: 02  
FREDERICK COUNTY PUBLIC SCHOOLS

Job No. #18045 JEB

Scale 1"=60' JRB

Date 03/16/2020 SPB

Drawing Title STORMDRAIN PROFILES

Drawn JPB

Checked JPB

Approved JPB

Drawing Number C-4T

6

Sheet

of

## ABBREVIATIONS

## GENERAL NOTES

1. FASTENERS IN WOOD BLOCKING OR MASONRY SHALL BE HOT DIPPED GALVANIZED OR STAINLESS STEEL.
2. FASTENERS IN CONTACT WITH DISSIMILAR METALS SHALL BE STAINLESS STEEL.
3. FASTENERS SHALL BE NO MORE THAN 12" FROM THE END OF ANY BLOCKING SEGMENT.

## FASTENERS

FOR BLOCKING ATTACHMENT ONLY AND UNLESS NOTED OTHERWISE;  
SEE STRUCTURAL AND SPECIFICATIONS FOR ALL OTHER TYPES AND CONDITIONS.

## KEY TO SYMBOLS

CS, A, AR, AC AND AS SERIES DRAWINGS ONLY;  
SEE OTHER DISCIPLINES FOR SYMBOLS RELATED TO ALL OTHER DRAWING SERIES

## KEY TO MATERIALS

CS, A, AR, AC AND AS SERIES DRAWINGS ONLY;  
SEE OTHER DISCIPLINES FOR MATERIALS RELATED TO ALL OTHER DRAWING SERIES.

KEYNOTES - MASTER LIST

CS, A, AR, AC AND AS SERIES DRAWINGS ONLY;  
SEE OTHER DISCIPLINES FOR KEYNOTES RELATED TO ALL OTHER DRAWING SERIES.

THIS LIST IS GENERATED FROM THE GWVO TEMPLATE. KEYNOTES LISTED PERTAIN TO THIS PROJECT'S DESIGN.  
ANY GAP IN SEQUENCE IS DUE TO THE KEYNOTE NOT BEING USED.

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Seal:

# WAVERLEY ELEMENTARY SCHOOL REPLACEMENT

MARYLAND PSC NO. 10.058.21

FREDERICK COUNTY PUBLIC SCHOOLS

|         |              |     |          |
|---------|--------------|-----|----------|
| Job No. | #18045       | JTH | Drawn    |
| Scale   | As indicated | JTH | Checked  |
| Date    | 03/16/2020   | PLH | Approved |

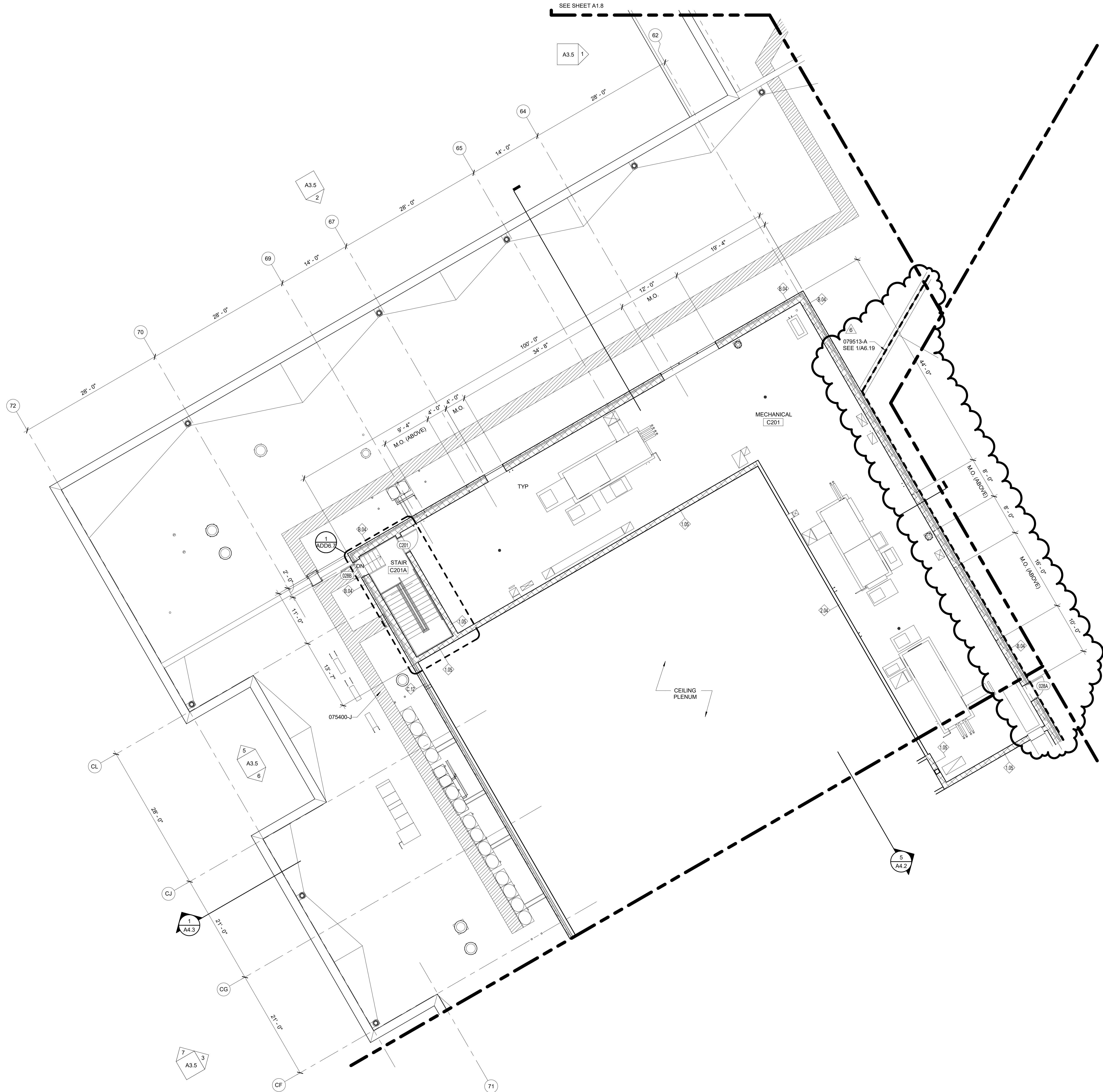
ABBREVIATIONS,  
KEYNOTES, &  
SYMBOLS

# CS.3

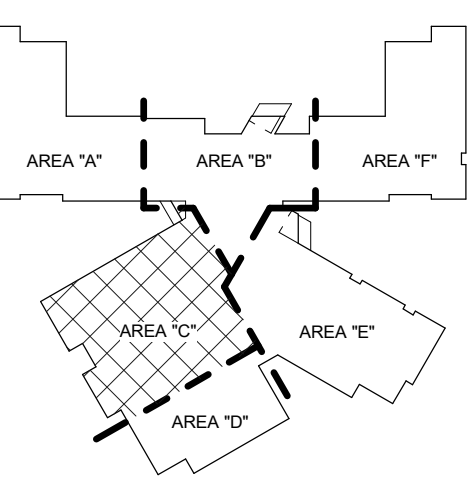
01

1  
A1.9  
1/8" = 1'-0"

SECOND FLOOR PARTIAL PLAN - AREA C



KEY PLAN:



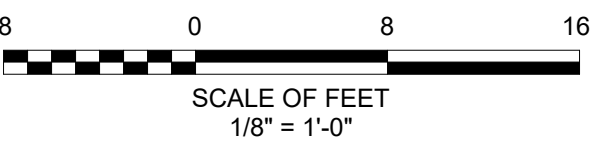
KEYNOTES LISTED ON THIS SHEET ARE FOR CONVENIENCE ONLY. REFER TO SHEET CS.3 FOR COMPLETE LIST

075400-J WALKWAY PAD  
079513-A EXTERIOR EXPANSION JOINT COVER SYSTEM

GENERAL NOTES:

1. ALL WINDOW DIMENSIONS ARE TO THE EDGE OF THE FINISHED MASONRY OPENING.

| NOTE # | DESCRIPTION  |
|--------|--|
| 1.1    | PROJECT WORK POINT (REFER TO A0.1 FOR CONTINUATION)          |
| 1.4    | CENTER WALL ON COLUMN  |
| 5.1    | PROJECT WORK POINT (REFER TO AS SERIES FOR MORE INFORMATION) |
| 9.1    | ALIGN ACP GRID TO FACE OF WALL                               |



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|-------|--|
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| Seal: |  |

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LICENSE NUMBER: 10810, EXPIRATION DATE: 11/04/2020

| Revisions: |            |             |
|------------|------------|-------------|
| No.        | Date       | Description |
| 6          | 04/22/2020 | Addendum #6 |

WAVERLEY ELEMENTARY  
SCHOOL REPLACEMENT

MARYLAND PSC NO. 10.058.21  
FREDERICK COUNTY PUBLIC SCHOOLS

|         |              |     |          |
|---------|--------------|-----|----------|
| Job No. | #18045       | JND | Drawn    |
| Scale   | As indicated | JTH | Checked  |
| Date    | 03/16/2020   | PLH | Approved |

Drawing Title Drawing Number

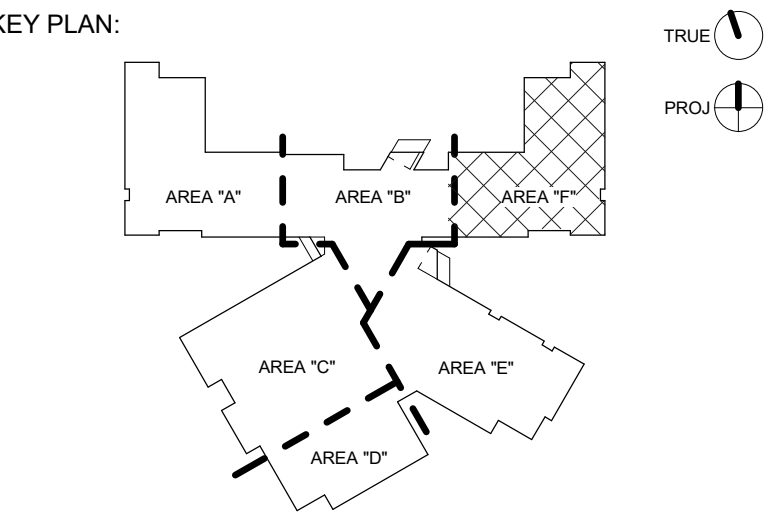
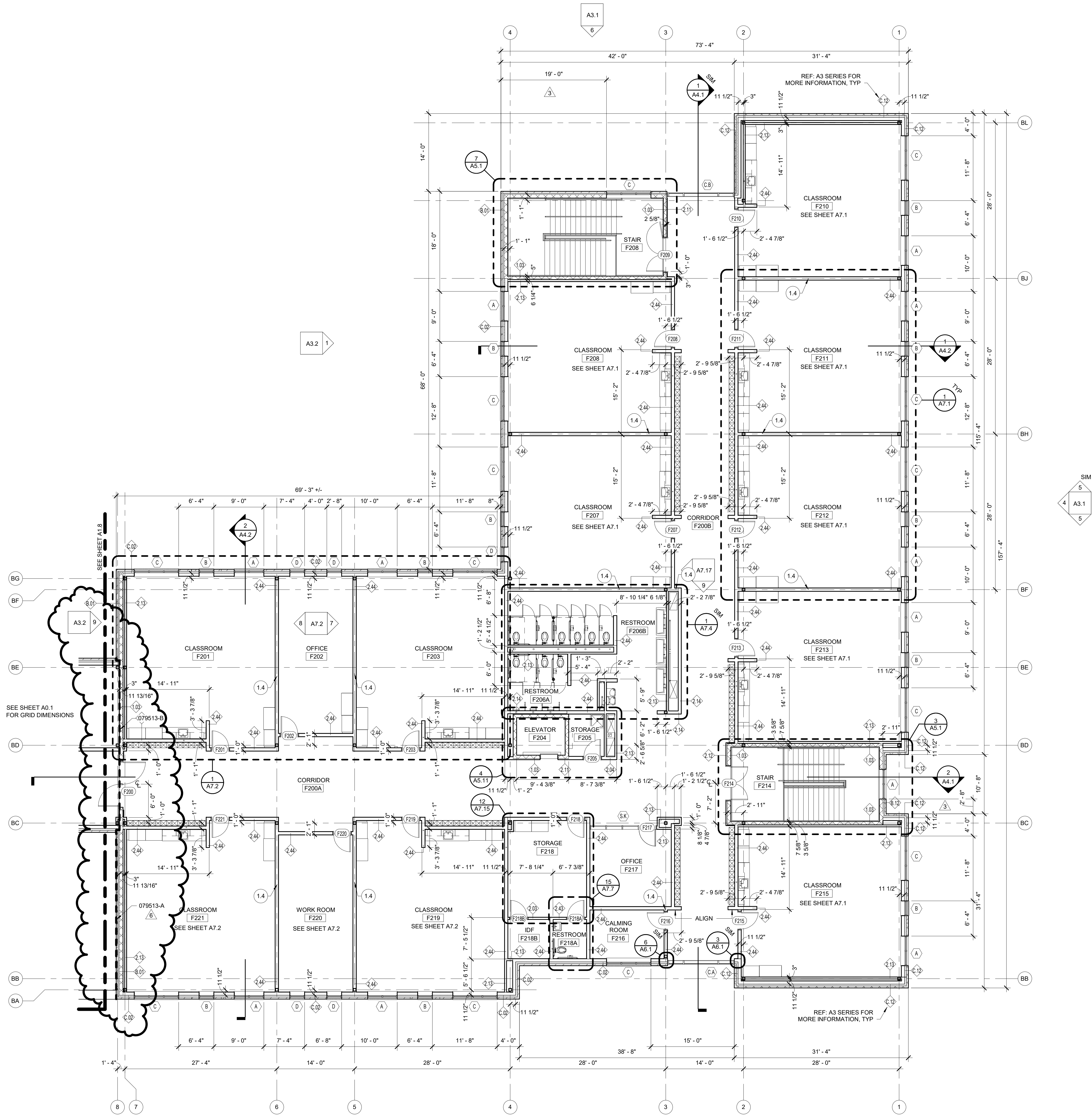
SECOND FLOOR PLAN  
- AREA C

A1.9

Sheet OF

1  
A1.10  
1/8" = 1'-0"

SECOND FLOOR PARTIAL PLAN - AREA F



KEYNOTES LISTED ON THIS SHEET ARE FOR CONVENIENCE ONLY. REFER TO SHEET CS.3 FOR COMPLETE LIST

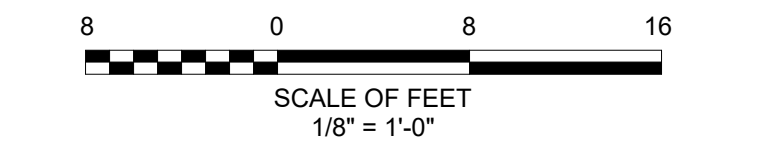
079513-A EXTERIOR EXPANSION JOINT COVER SYSTEM  
079513-B INTERIOR EXPANSION JOINT COVER SYSTEM

GENERAL NOTES:

1. ALL WINDOW DIMENSIONS ARE TO THE EDGE OF THE FINISHED MASONRY OPENING.

CONSTRUCTION NOTES

| NOTE # | DESCRIPTION  |
|--------|--|
| 1.1    | PROJECT WORK POINT (REFER TO A0.1 FOR CONTINUATION)          |
| 1.4    | CENTER WALL ON COLUMN  |
| 5.1    | PROJECT WORK POINT (REFER TO AS SERIES FOR MORE INFORMATION) |
| 9.1    | ALIGN ACP GRID TO FACE OF WALL                               |



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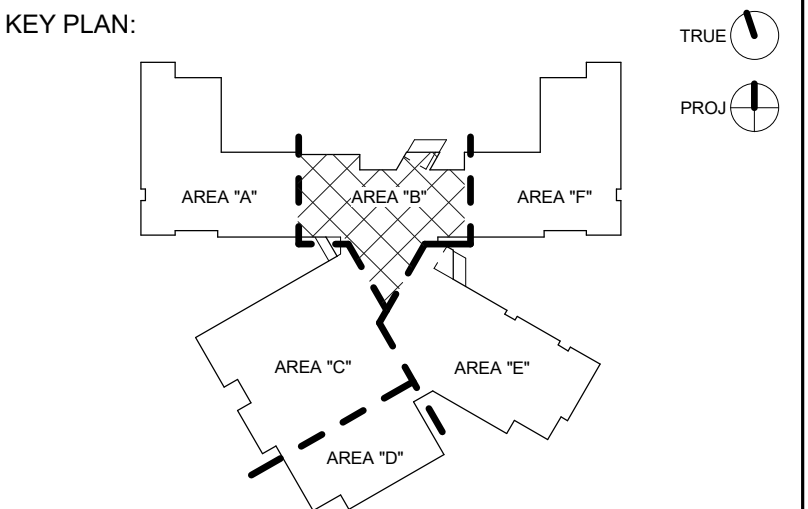
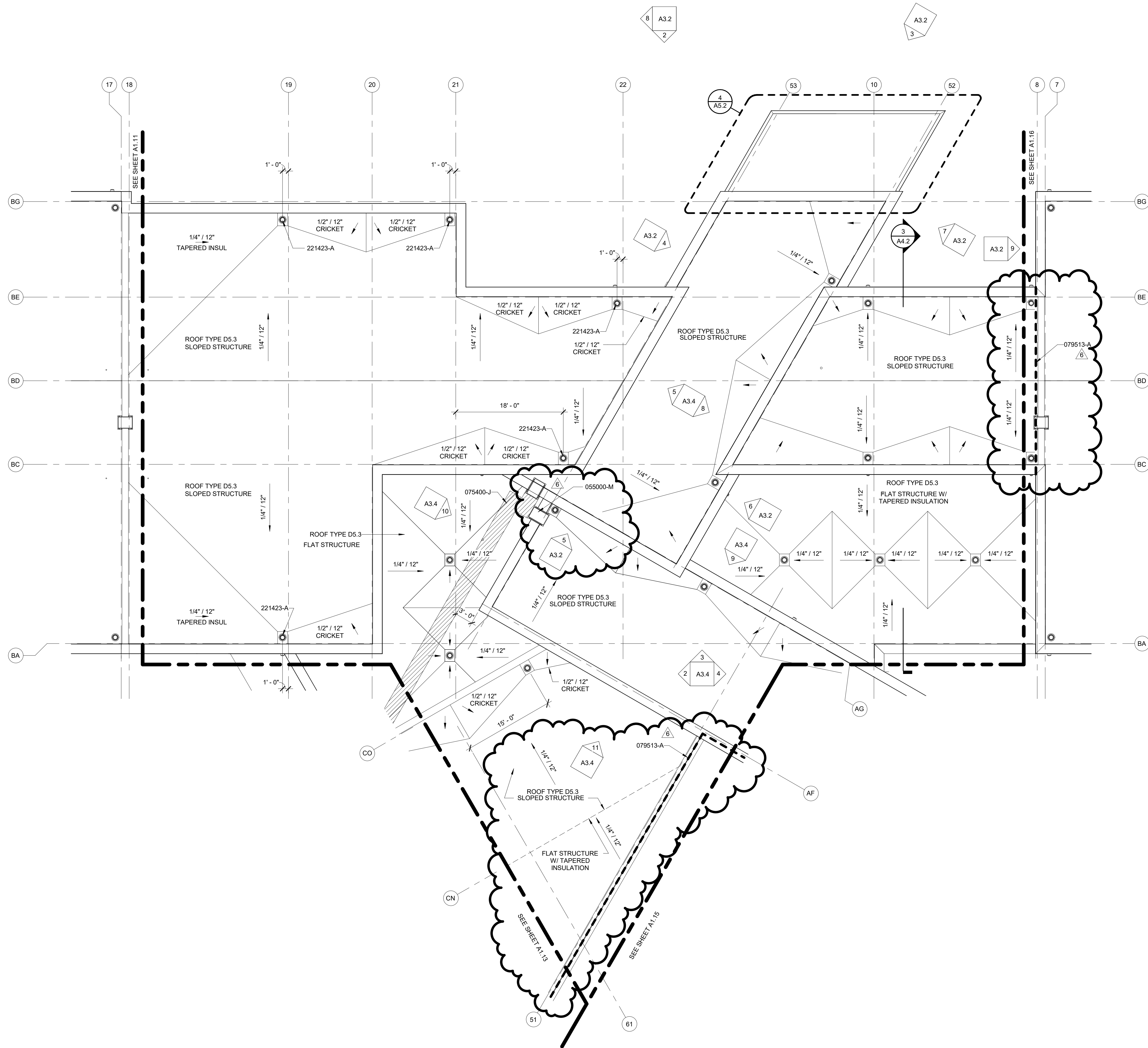
Revisions:

| No. | Date       | Description |
|-----|------------|-------------|
| 3   | 04/03/2020 | Addendum #3 |
| 6   | 04/22/2020 | Addendum #6 |

WAVERLEY ELEMENTARY  
SCHOOL REPLACEMENT

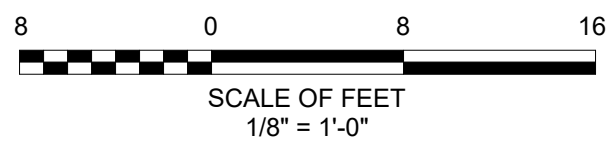
MARYLAND PSC NO. 10.058.21  
FREDERICK COUNTY PUBLIC SCHOOLS

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|----------------|----------------------------|-----|----------|
| Job No.        | #18045                     | JND | Drawn    |
| Scale          | As indicated               | JTH | Checked  |
| Date           | 03/16/2020                 | PLH | Approved |
| Drawing Title  | SECOND FLOOR PLAN - AREA F |     |          |
| Drawing Number | A1.10                      |     |          |
| Sheet          | OF                         |     |          |



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055000-M PREFABRICATED ALUMINUM LADDER  
075400-J WALKWAY PAD  
079513-A EXTERIOR EXPANSION JOINT COVER SYSTEM  
221423-A ROOF DRAIN (REFER TO AC SERIES & PLUMBING FOR MORE INFORMATION)



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| 6          | 04/22/2020 | Addendum #6 |

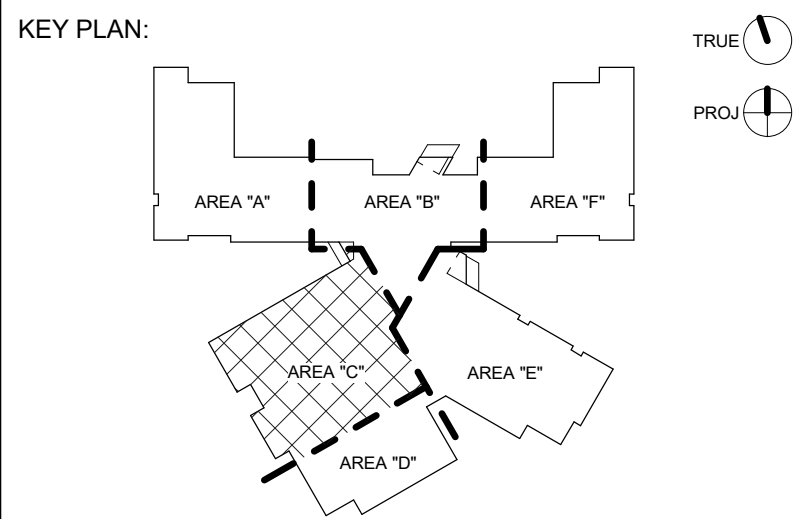
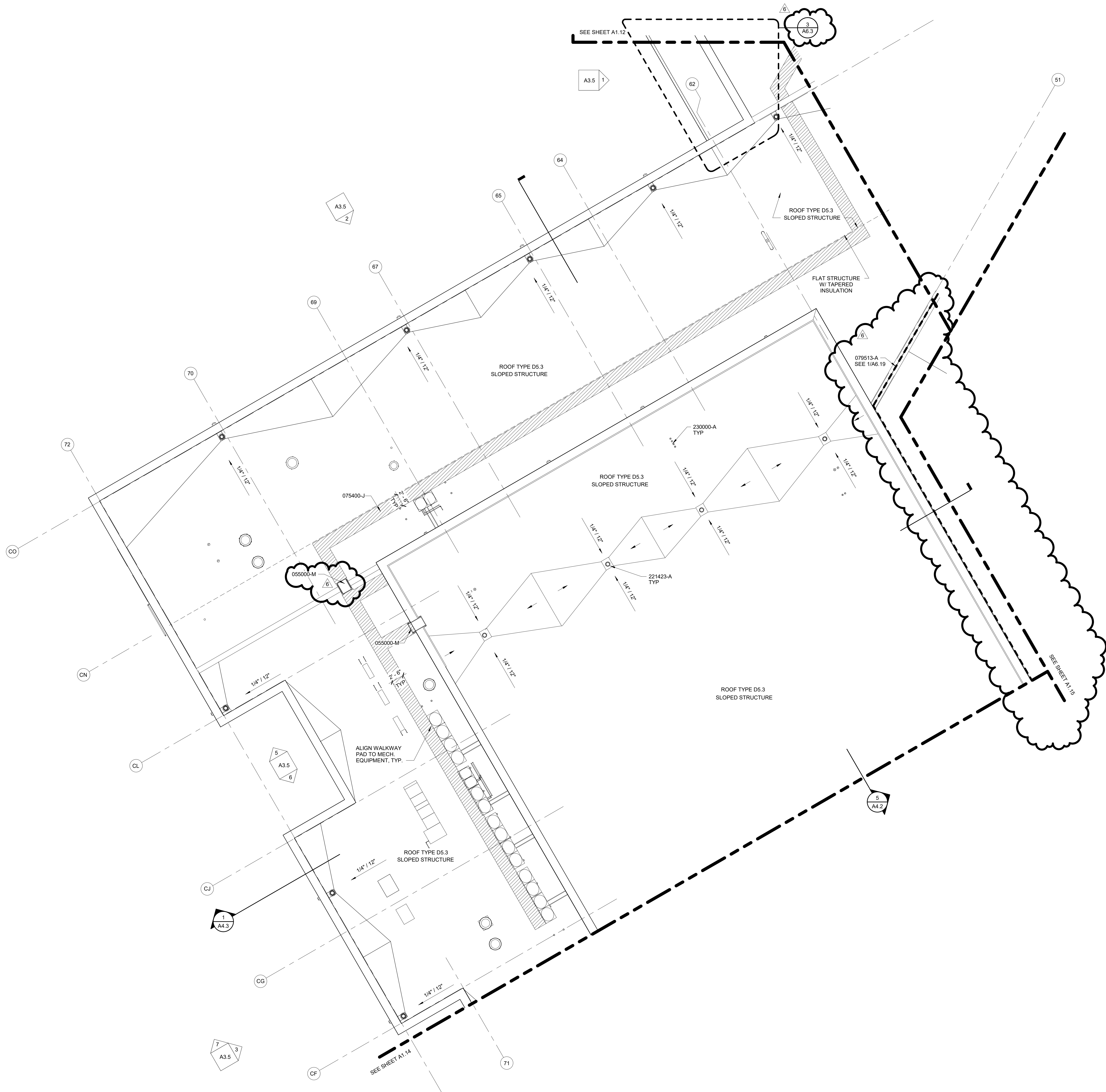
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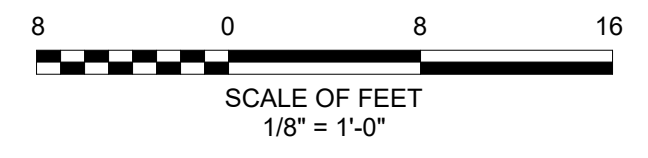
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| Job No.        | #18045             | JND | Drawn    |
| Scale          | 1/8" = 1'-0"       | JTH | Checked  |
| Date           | 03/16/2020         | PLH | Approved |
| Drawing Title  | Roof Plan - Area B |     |          |
| Drawing Number | A1.12              |     |          |

|       |  |    |
|-------|--|----|
| Sheet |  | Of |
|-------|--|----|


1  
A1.13  
ROOF PLAN - AREA C  
1/8" = 1'-0"



- KEYNOTES LISTED ON THIS SHEET ARE FOR CONVENIENCE ONLY. REFER TO SHEET CS.3 FOR COMPLETE LIST
- 055000-M PREFABRICATED ALUMINUM LADDER
  - 075400-J WALKWAY PAD
  - 079513-A EXTERIOR EXPANSION JOINT COVER SYSTEM
  - 221423-A ROOF DRAIN (REFER TO AC SERIES & PLUMBING FOR MORE INFORMATION)
  - 230000-A MECHANICAL (REFER TO MECHANICAL FOR MORE INFORMATION)



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|  | Seal: |

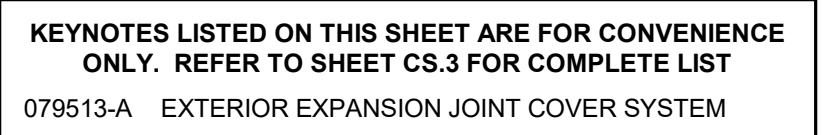
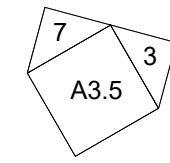
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LICENSE NUMBER: 10010, EXPIRATION DATE: 11/04/2020

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| No.        | Date       | Description |
| 6          | 04/22/2020 | Addendum #6 |

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MARYLAND PSC NO. 10.058.21  
FREDERICK COUNTY PUBLIC SCHOOLS

|                    |                |     |          |
|--------------------|----------------|-----|----------|
| Job No.            | #18045         | JND | Drawn    |
| Scale              | 1/8" = 1'-0"   | JTH | Checked  |
| Date               | 03/16/2020     | PLH | Approved |
| Drawing Title      | Drawing Number |     |          |
| ROOF PLAN - AREA C | <b>A1.13</b>   |     |          |
| Sheet              | Of             |     |          |



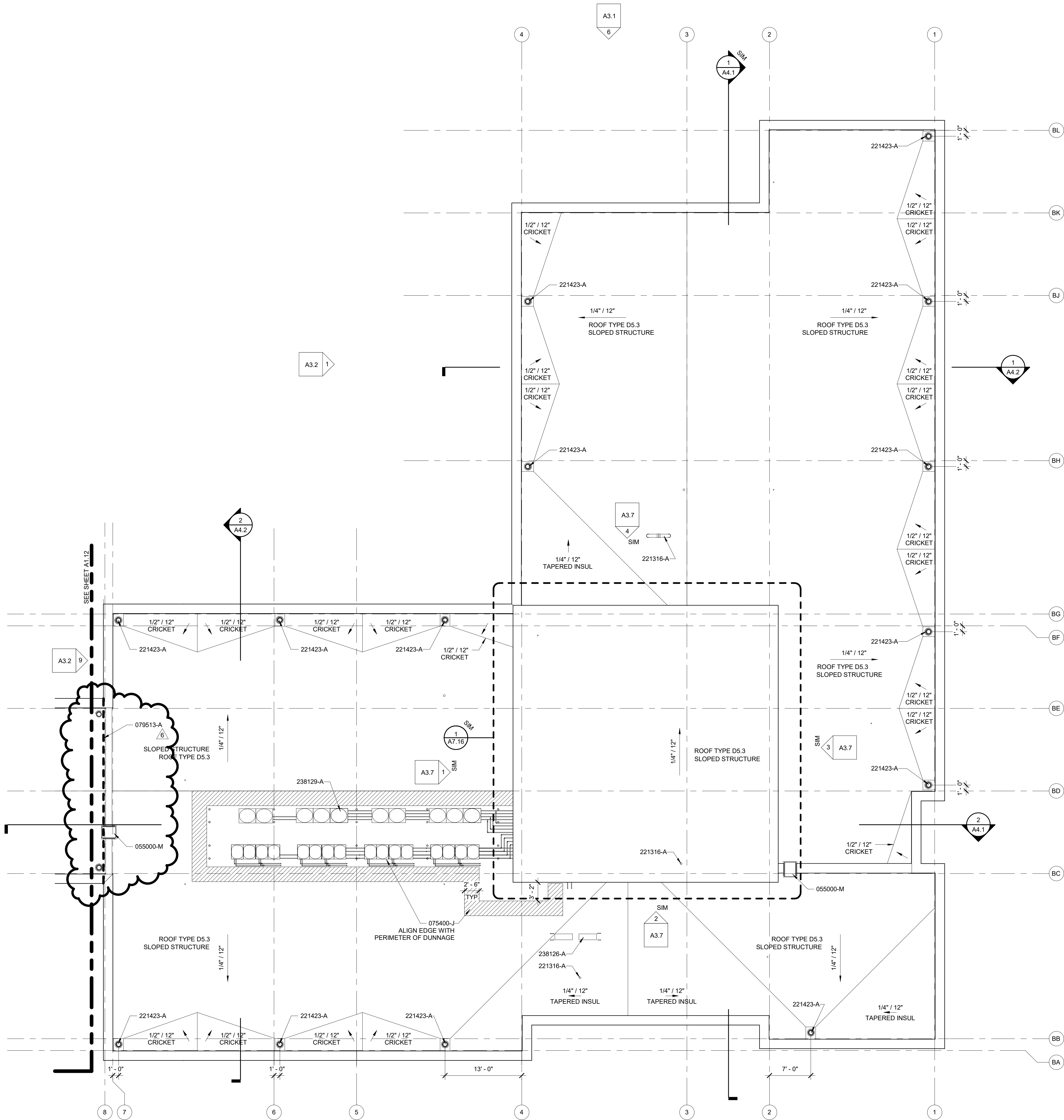
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|------------|------------|-------------|
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| No.        | Date       | Description |
| 6          | 04/22/2020 | Addendum #6 |

|                    |       |
|--------------------|-------|
| ROOF PLAN - AREA D | A1.14 |
| Sheet              | Of    |

1  
A1.16 / 1/8" = 1'-0"

ROOF PLAN - AREA F



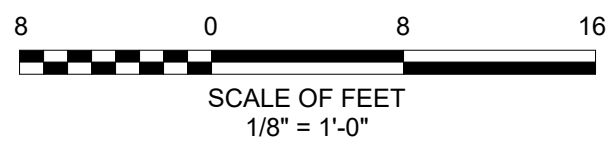
KEY PLAN:

TRUE

PROJ

KEYNOTES LISTED ON THIS SHEET ARE FOR CONVENIENCE ONLY. REFER TO SHEET CS.3 FOR COMPLETE LIST

- 055000-M PREFABRICATED ALUMINUM LADDER
- 075400-J WALKWAY PAD
- 079513-A EXTERIOR EXPANSION JOINT COVER SYSTEM
- 221316-A VENT THROUGH ROOF (REFER TO AC SERIES & PLUMBING FOR MORE INFORMATION)
- 221423-A ROOF DRAIN (REFER TO AC SERIES & PLUMBING FOR MORE INFORMATION)
- 238126-A CONDENSING UNIT (REFER TO MECHANICAL FOR MORE INFORMATION)
- 238129-A CONDENSING UNIT (REFER TO MECHANICAL FOR MORE INFORMATION)



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W|O

Seal:

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Revisions:

| No. | Date       | Description |
|-----|------------|-------------|
| 6   | 04/22/2020 | Addendum #6 |

WAVERLEY ELEMENTARY  
SCHOOL REPLACEMENT

MARYLAND PSC NO. 10.058.21  
FREDERICK COUNTY PUBLIC SCHOOLS

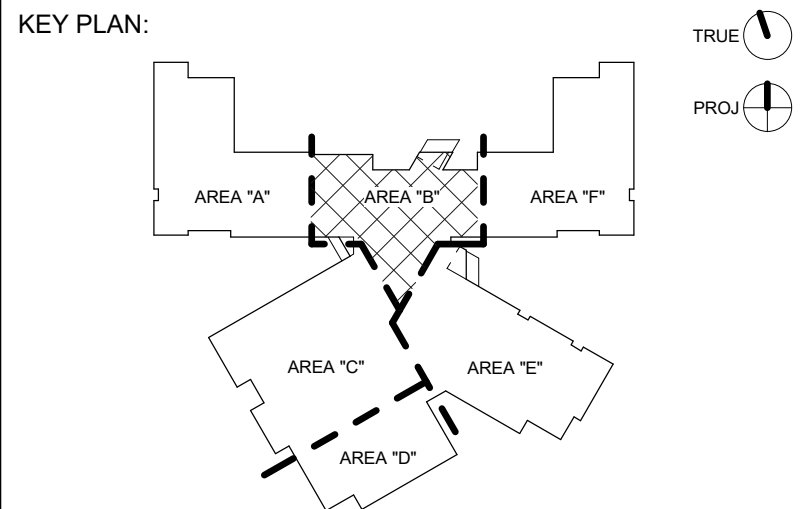
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| Scale          | 1/8" = 1'-0"       | JTH | Checked  |
| Date           | 03/16/2020         | PLH | Approved |
| Drawing Title  | ROOF PLAN - AREA F |     |          |
| Drawing Number | A1.16              |     |          |

Sheet

Of

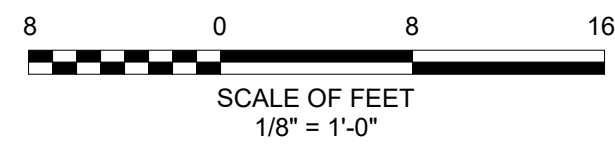


- GENERAL NOTES
1. IN FINISHED AREAS: ALL EXPOSED-STRUCTURE CEILINGS AND ALL AREAS ABOVE CEILING CLOUDS SHALL BE PAINTED, INCLUDING ALL SURFACES AND MECHANICAL EQUIPMENT, PIPING, HANGERS, DUCTS, STRUCTURAL COMPONENTS, DECKING, WALL, AND CEILING COMPONENTS. EXCEPTIONS: UNLESS OTHERWISE NOTED, PRE-FINISHED SURFACES, AND WHERE PAINTING IS PROHIBITED BY MANUFACTURER OR AUTHORITY HAVING JURISDICTION.
  2. EQ DESIGNATES EQUAL DIMENSIONS ALONG THAT DIMENSION STRING ONLY.
  3. ACOUSTICAL CEILING PANEL LAYOUTS SHALL BE CENTERED IN BOTH DIRECTIONS WITHIN AN AREA UNLESS NOTED OTHERWISE.
  4. UNLESS NOTED OTHERWISE, CENTER LIGHT FIXTURES IN ROOM IN BOTH DIRECTIONS, AND EVENLY SPACE WHERE APPLICABLE. WHERE THERE IS MORE THAN ONE FIXTURE, USE 1/2 EQ SPACING FOR END OF RUNS ADJACENT TO WALLS.
  5. WHERE AN ELECTRONIC DEVICE OR LIGHT FIXTURE IS SHOWN IN A CEILING PANEL, CENTER DEVICE WITHIN CEILING PANEL UNLESS INDICATED OTHERWISE, SUCH AS A LINEAR LIGHT FIXTURE ALIGNED WITH ONE SIDE OF A CEILING PANEL.
  6. PROVIDE 3" MIN. CLEAR BETWEEN LIGHT FIXTURES AND ABOVE CEILING INSULATION OR OTHER FLAMMABLE MATERIALS AT NON-IC FIXTURE LOCATIONS.
  7. MECH, ELEC, PLUMBING EQUIPMENT SHOWN FOR REFERENCE ONLY. SEE M, E, P DRAWINGS FOR FULL DESCRIPTION.
  8. UNLESS NOTED OTHERWISE OR REQUIRED BY CODE OR AHJ, CENTER SPRINKLER HEADS IN CEILING PANELS AND BULKHEADS IN BOTH DIRECTIONS AND SPACE EVENLY IN ROOM.
  9. WHEREVER AN EXIT SIGN IS LOCATED ABOVE A DOOR, GROUP OF DOORS OR ANOTHER OPENING, CENTER THE EXIT SIGN ABOVE THE OPENING UNLESS NOTED OTHERWISE.

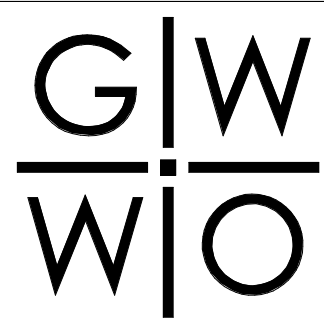


KEYNOTES LISTED ON THIS SHEET ARE FOR CONVENIENCE ONLY. REFER TO SHEET CS.3 FOR COMPLETE LIST

079513-B INTERIOR EXPANSION JOINT COVER SYSTEM



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|  | Seal: |

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|------------|------------|-------------|
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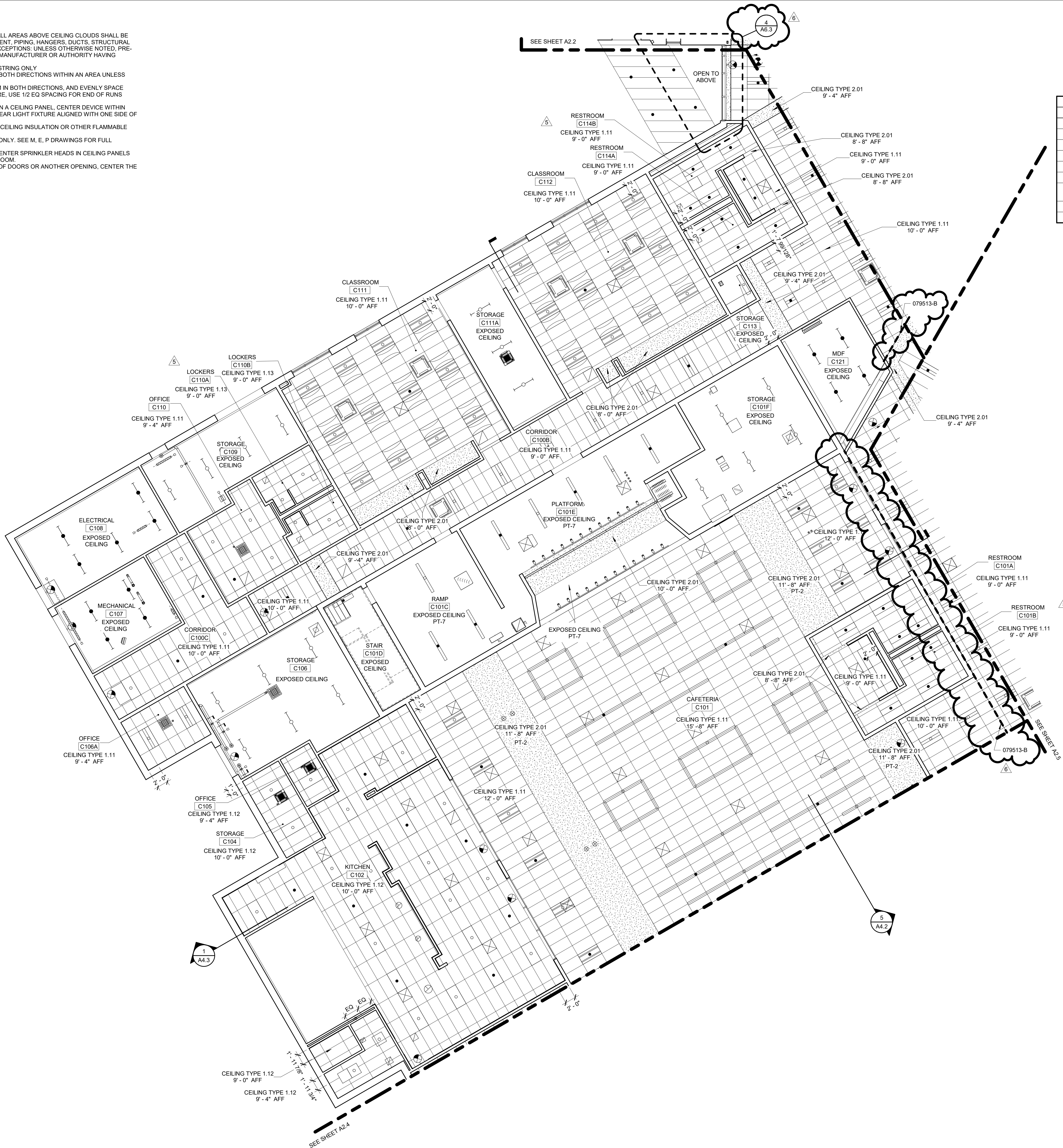
WAVERLEY ELEMENTARY  
SCHOOL REPLACEMENT

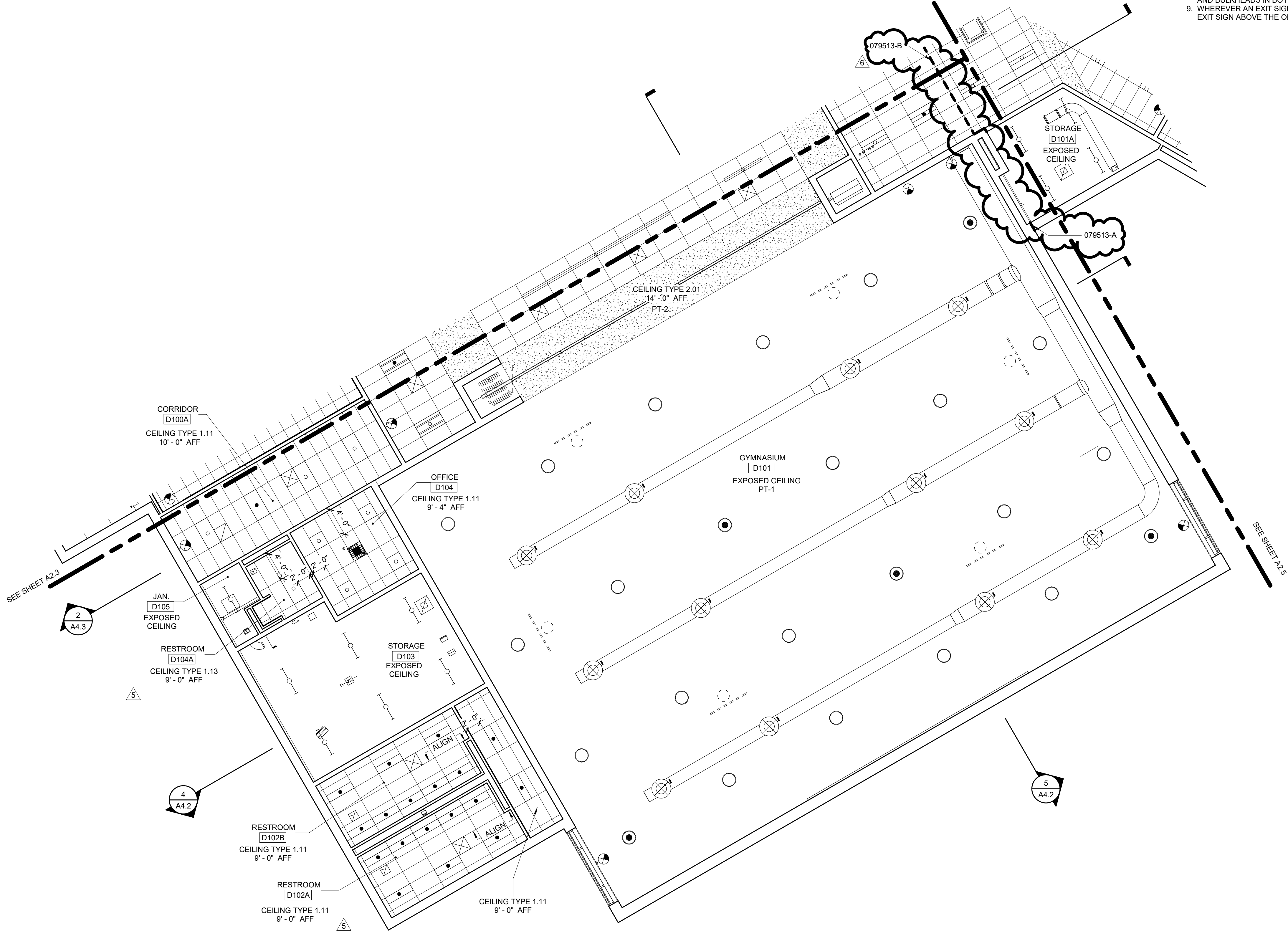
MARYLAND PSC NO. 10.058.21  
FREDERICK COUNTY PUBLIC SCHOOLS

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|---------|--------------|-----|----------|
| Job No. | #18045       | JND | Drawn    |
| Scale   | As indicated | JTH | Checked  |
| Date    | 03/16/2020   | PLH | Approved |

|   |                |
|---|----------------|
| Drawing Title                                       | Drawing Number |
| REFLECTED CEILING<br>PLAN - FIRST FLOOR -<br>AREA B | A2.2           |
| Sheet   | 01             |

- GENERAL NOTES
1. IN FINISHED AREAS: ALL EXPOSED-STRUCTURE CEILINGS AND ALL AREAS ABOVE CEILING CLOUDS SHALL BE PAINTED, INCLUDING ALL SURFACES AND MECHANICAL EQUIPMENT, PIPING, HANGERS, DUCTS, STRUCTURAL COMPONENTS, DECKING, WALL, AND CEILING COMPONENTS. EXCEPTIONS: UNLESS OTHERWISE NOTED, PRE-FINISHED SURFACES, AND WHERE PAINTING IS PROHIBITED BY MANUFACTURER OR AUTHORITY HAVING JURISDICTION.
  2. EQ DESIGNATES EQUAL DIMENSIONS ALONG THAT DIMENSION STRING ONLY.
  3. ACOUSTICAL CEILING PANEL LAYOUTS SHALL BE CENTERED IN BOTH DIRECTIONS WITHIN AN AREA UNLESS NOTED OTHERWISE.
  4. UNLESS NOTED OTHERWISE, CENTER LIGHT FIXTURES IN ROOM IN BOTH DIRECTIONS, AND EVENLY SPACE WHERE APPLICABLE. WHERE THERE IS MORE THAN ONE FIXTURE, USE 1/2 EQ SPACING FOR END OF RUNS ADJACENT TO WALLS.
  5. WHERE AN ELECTRONIC DEVICE OR LIGHT FIXTURE IS SHOWN IN A CEILING PANEL, CENTER DEVICE WITHIN CEILING PANEL UNLESS INDICATED OTHERWISE, SUCH AS A LINEAR LIGHT FIXTURE ALIGNED WITH ONE SIDE OF A CEILING PANEL.
  6. PROVIDE 3" MIN. CLEAR BETWEEN LIGHT FIXTURES AND ABOVE CEILING INSULATION OR OTHER FLAMMABLE MATERIALS AT NON-IC FIXTURE LOCATIONS.
  7. MECH, ELEC, PLUMBING EQUIPMENT SHOWN FOR REFERENCE ONLY. SEE M, E, P DRAWINGS FOR FULL DESCRIPTION.
  8. UNLESS NOTED OTHERWISE OR REQUIRED BY CODE OR AHJ, CENTER SPRINKLER HEADS IN CEILING PANELS AND BULKHEADS IN BOTH DIRECTIONS AND SPACE EVENLY IN ROOM.
  9. WHEREVER AN EXIT SIGN IS LOCATED ABOVE A DOOR, GROUP OF DOORS OR ANOTHER OPENING, CENTER THE EXIT SIGN ABOVE THE OPENING UNLESS NOTED OTHERWISE.

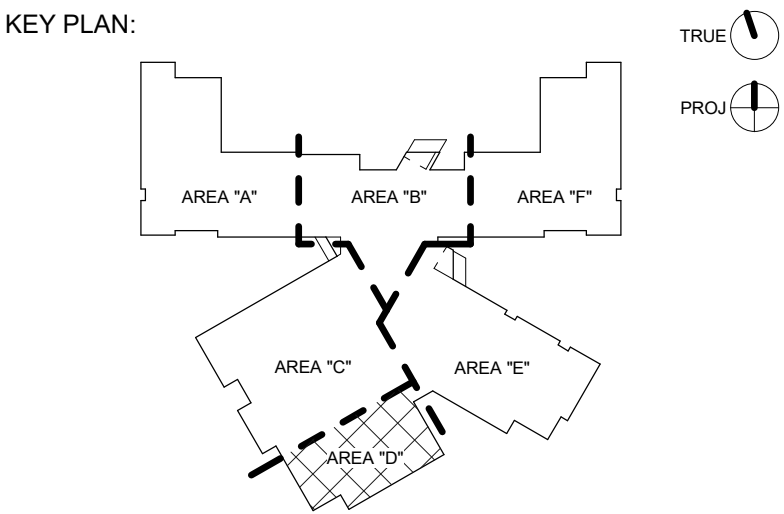




- GENERAL NOTES**
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  6. PROVIDE 3" MIN. CLEAR BETWEEN LIGHT FIXTURES AND ABOVE CEILING INSULATION OR OTHER FLAMMABLE MATERIALS AT NON-AC FIXTURE LOCATIONS.
  7. MECH, ELEC, PLUMBING EQUIPMENT SHOWN FOR REFERENCE ONLY. SEE M, E, P DRAWINGS FOR FULL DESCRIPTION.
  8. UNLESS NOTED OTHERWISE OR REQUIRED BY CODE OR AHJ, CENTER SPRINKLER HEADS IN CEILING PANELS AND BULKHEADS IN BOTH DIRECTIONS AND SPACE EVENLY IN ROOM.
  9. WHEREVER AN EXIT SIGN IS LOCATED ABOVE A DOOR, GROUP OF DOORS OR ANOTHER OPENING, CENTER THE EXIT SIGN ABOVE THE OPENING UNLESS NOTED OTHERWISE.

| PAINT SCHEDULE |  |
|----------------|--|
| ITEM           | MANUFACTURER / COLOR                       |
| PT-1           | SHERWIN WILLIAMS - SW 6252 ICE CUBE        |
| PT-2           | SHERWIN WILLIAMS - SW 6254 LAZY GRAY       |
| PT-3           | SHERWIN WILLIAMS - SW 9161 DUSTBLU         |
| PT-4           | SHERWIN WILLIAMS - SW 6772 CAY             |
| PT-4A          | SHERWIN WILLIAMS - SW 6494 LAKESHORE       |
| PT-5           | SHERWIN WILLIAMS - SW 6695 MIDDAY          |
| PT-5A          | SHERWIN WILLIAMS - SW 9019 GOLDEN PLUMERIA |
| PT-6           | SHERWIN WILLIAMS - SW 6709 GLEEFUL         |
| PT-7           | BLACK                                      |

**NOTE:** ALL WALLS TO BE PT-1 UNLESS NOTED OTHERWISE.




**KEYNOTES LISTED ON THIS SHEET ARE FOR CONVENIENCE ONLY. REFER TO SHEET CS.3 FOR COMPLETE LIST**

079513-A EXTERIOR EXPANSION JOINT COVER SYSTEM  
079513-B INTERIOR EXPANSION JOINT COVER SYSTEM

8 0 8 16  
SCALE OF FEET  
1/8" = 1'-0"

ISSUED FOR BID

|  |       |
|--|-------|
| <br>GWIO INC.<br>802 WYMAN PARK DRIVE, SUITE 300<br>BALTIMORE, MARYLAND 21211, 410-350-1909 | Seal: |
|  | Seal: |

© 2020 GWWO INC.

I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.  
LICENSE NUMBER: 10810, EXPIRATION DATE: 11/04/2020

| Revisions: |            |             |
|------------|------------|-------------|
| No.        | Date       | Description |
| 5          | 04/15/2020 | Addendum #5 |
| 6          | 04/22/2020 | Addendum #6 |

**WAVERLEY ELEMENTARY  
SCHOOL REPLACEMENT**

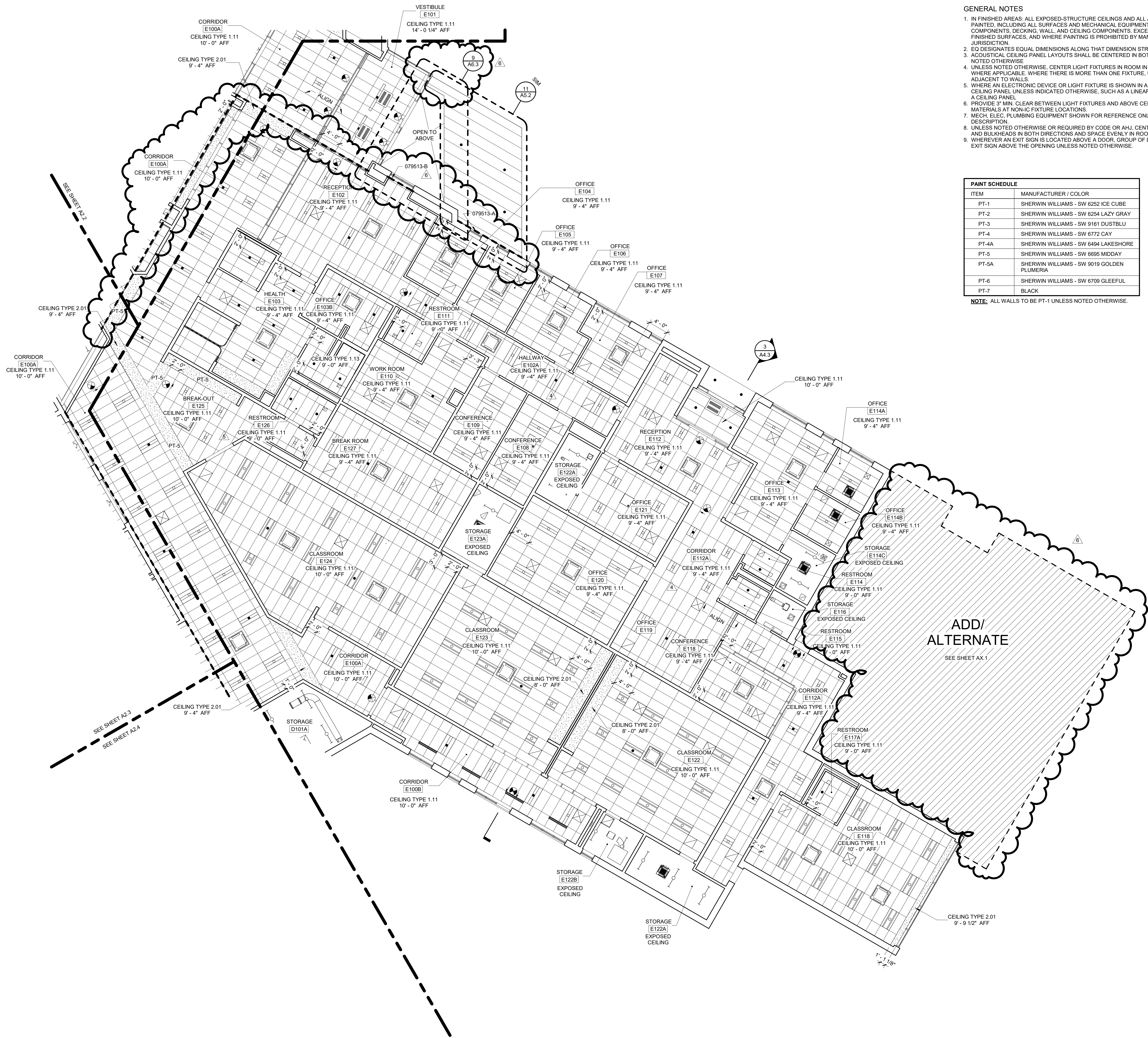
MARYLAND PSC NO. 10.058.21  
FREDERICK COUNTY PUBLIC SCHOOLS

|         |              |     |          |
|---------|--------------|-----|----------|
| Job No. | #18045       | JND | Drawn    |
| Scale   | As indicated | JTH | Checked  |
| Date    | 03/16/2020   | PLH | Approved |

Drawing Title  
REFLECTED CEILING  
PLAN - FIRST FLOOR -  
AREA D

Drawing Number  
**A2.4**

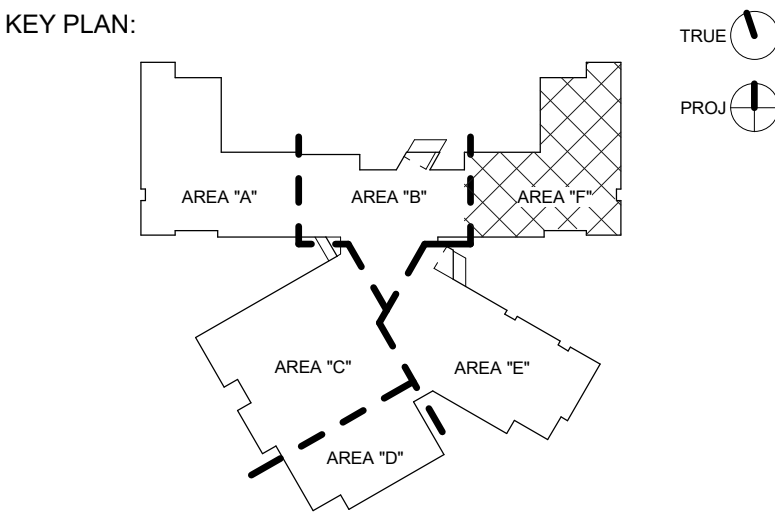
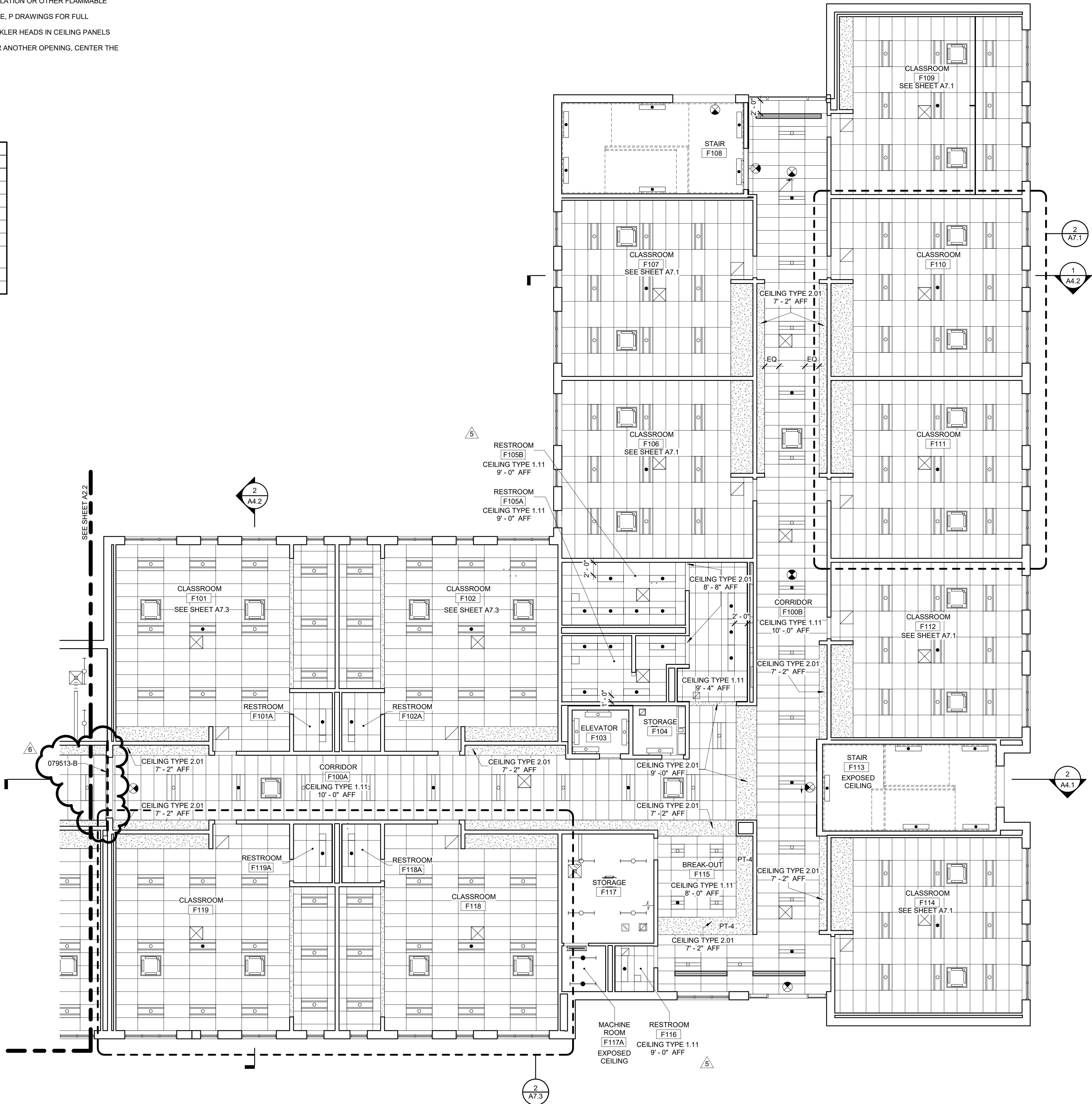
Sheet  
OF



- GENERAL NOTES
1. IN FINISHED AREAS: ALL EXPOSED-STRUCTURE CEILINGS AND ALL AREAS ABOVE CEILING CLOUDS SHALL BE PAINTED, INCLUDING ALL SURFACES AND MECHANICAL EQUIPMENT, PIPING, HANGERS, DUCTS, STRUCTURAL COMPONENTS, DECKING, WALL, AND CEILING COMPONENTS. EXCEPTIONS: UNLESS OTHERWISE NOTED, PRE-FINISHED SURFACES, AND WHERE PAINTING IS PROHIBITED BY MANUFACTURER OR AUTHORITY HAVING JURISDICTION.
  2. EQ DESIGNATES EQUAL DIMENSIONS ALONG THAT DIMENSION STRING ONLY.
  3. ACOUSTICAL CEILING PANEL LAYOUTS SHALL BE CENTERED IN BOTH DIRECTIONS WITHIN AN AREA UNLESS NOTED OTHERWISE.
  4. UNLESS NOTED OTHERWISE, CENTER LIGHT FIXTURES IN ROOM IN BOTH DIRECTIONS, AND EVENLY SPACE WHERE APPLICABLE. WHERE THERE IS MORE THAN ONE FIXTURE, USE 1/2 EQ SPACING FOR END OF RUNS ADJACENT TO WALLS.
  5. WHERE AN ELECTRONIC DEVICE OR LIGHT FIXTURE IS SHOWN IN A CEILING PANEL, CENTER DEVICE WITHIN CEILING PANEL UNLESS INDICATED OTHERWISE, SUCH AS A LINEAR LIGHT FIXTURE ALIGNED WITH ONE SIDE OF A CEILING PANEL.
  6. PROVIDE 3" MIN. CLEAR BETWEEN LIGHT FIXTURES AND ABOVE CEILING INSULATION OR OTHER FLAMMABLE MATERIALS AT NON-40° FIXTURE LOCATIONS.
  7. MECH, ELEC, PLUMBING EQUIPMENT SHOWN FOR REFERENCE ONLY. SEE M, E, P DRAWINGS FOR FULL DESCRIPTION.
  8. UNLESS NOTED OTHERWISE OR REQUIRED BY CODE OR AHJ, CENTER SPRINKLER HEADS IN CEILING PANELS AND BULKHEADS IN BOTH DIRECTIONS AND SPACE EVENLY IN ROOM.
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| PAINT SCHEDULE |  |
|----------------|--|
| ITEM           | MANUFACTURER / COLOR                       |
| PT-1           | SHERWIN WILLIAMS - SW 6252 ICE CUBE        |
| PT-2           | SHERWIN WILLIAMS - SW 6254 LAZY GRAY       |
| PT-3           | SHERWIN WILLIAMS - SW 9161 DUSTBLU         |
| PT-4           | SHERWIN WILLIAMS - SW 6772 CAY             |
| PT-4A          | SHERWIN WILLIAMS - SW 6494 LAKESHORE       |
| PT-5           | SHERWIN WILLIAMS - SW 6695 MIDDAY          |
| PT-5A          | SHERWIN WILLIAMS - SW 9019 GOLDEN PLUMERIA |
| PT-6           | SHERWIN WILLIAMS - SW 6709 GLEEFUL         |
| PT-7           | BLACK                                      |

NOTE: ALL WALLS TO BE PT-1 UNLESS NOTED OTHERWISE.



KEYNOTES LISTED ON THIS SHEET ARE FOR CONVENIENCE ONLY. REFER TO SHEET CS.3 FOR COMPLETE LIST

079513-B INTERIOR EXPANSION JOINT COVER SYSTEM

SCALE OF FEET  
1/8" = 1'-0"

ISSUED FOR BID

G|W  
W|O

GWWO INC.  
800 WYMAN PARK DRIVE, SUITE 300  
BALTIMORE, MARYLAND 21211, 410-330-1909

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LICENSE NUMBER: 10810, EXPIRATION DATE: 11/04/2020

| Revisions: |            |             |
|------------|------------|-------------|
| No.        | Date       | Description |
| 5          | 04/15/2020 | Addendum #5 |
| 6          | 04/22/2020 | Addendum #6 |

WAVERLEY ELEMENTARY  
SCHOOL REPLACEMENT

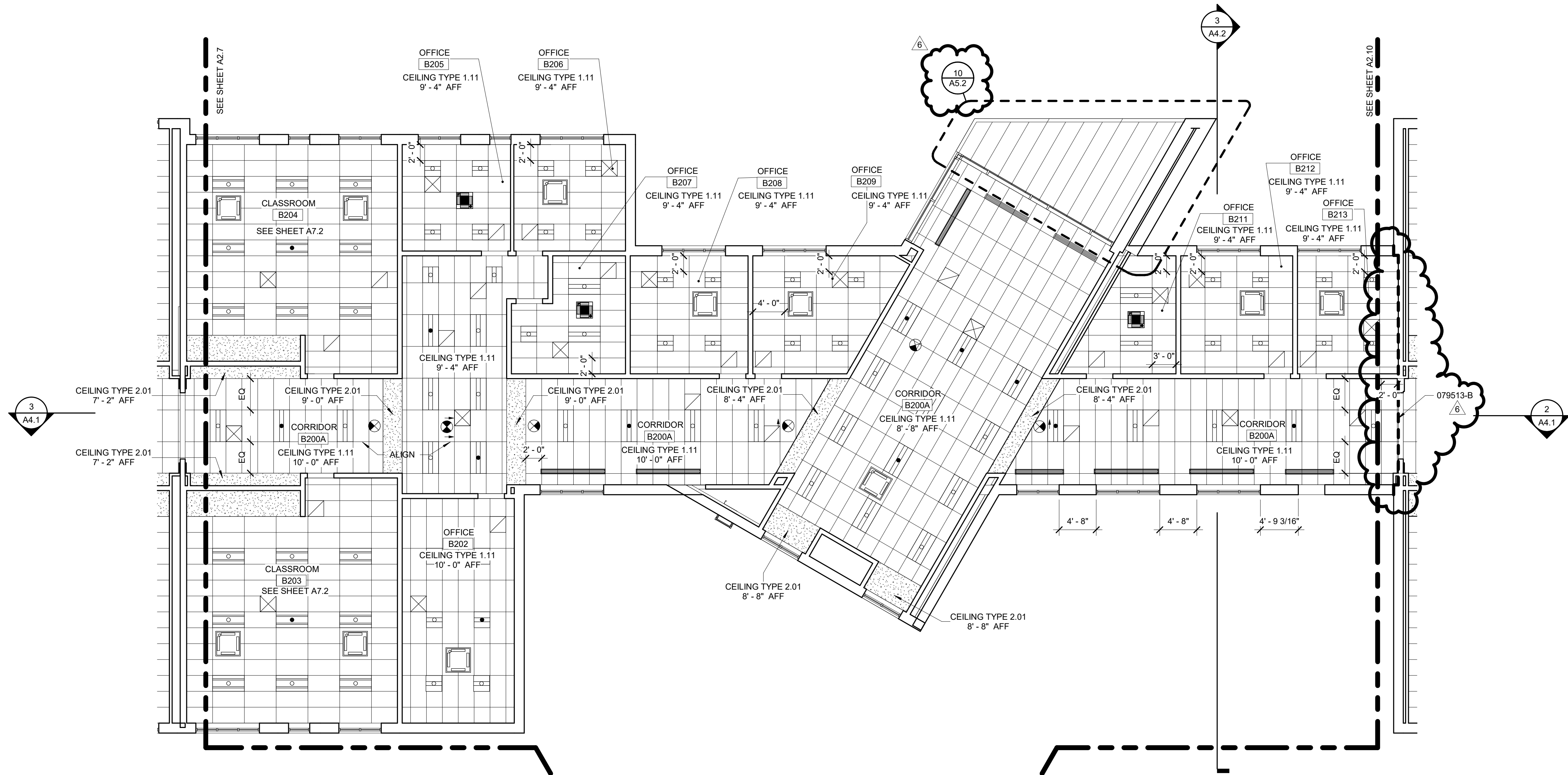
MARYLAND PSC NO. 10.058.21  
FREDERICK COUNTY PUBLIC SCHOOLS

|         |              |     |          |
|---------|--------------|-----|----------|
| Job No. | #18045       | JND | Drawn    |
| Scale   | As indicated | JTH | Checked  |
| Date    | 03/16/2020   | PLH | Approved |

Drawing Title  
REFLECTED CEILING  
PLAN - FIRST FLOOR -  
AREA F

Drawing Number  
A2.6

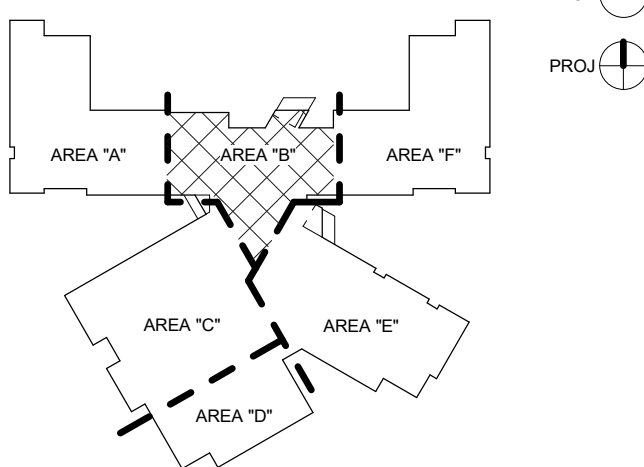
Sheet  
OF



GENERAL NOTES

1. IN FINISHED AREAS: ALL EXPOSED-STRUCTURE CEILINGS AND ALL AREAS ABOVE CEILING CLOUDS SHALL BE PAINTED, INCLUDING ALL SURFACES AND MECHANICAL EQUIPMENT, PIPING, HANGERS, DUCTS, STRUCTURAL COMPONENTS, DECKING, WALL, AND CEILING COMPONENTS. EXCEPTIONS: UNLESS OTHERWISE NOTED, PRE-FINISHED SURFACES, AND WHERE PAINTING IS PROHIBITED BY MANUFACTURER OR AUTHORITY HAVING JURISDICTION.
2. EQ DESIGNATES EQUAL DIMENSIONS ALONG THAT DIMENSION STRING ONLY
3. ACOUSTICAL CEILING PANEL LAYOUTS SHALL BE CENTERED IN BOTH DIRECTIONS WITHIN AN AREA UNLESS NOTED OTHERWISE
4. UNLESS NOTED OTHERWISE, CENTER LIGHT FIXTURES IN ROOM IN BOTH DIRECTIONS, AND EVENLY SPACE WHERE APPLICABLE. WHERE THERE IS MORE THAN ONE FIXTURE, USE 1/2 EQ SPACING FOR END OF RUNS ADJACENT TO WALLS
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KEY PLAN:



KEYNOTES LISTED ON THIS SHEET ARE FOR CONVENIENCE ONLY. REFER TO SHEET CS.3 FOR COMPLETE LIST

079513-B INTERIOR EXPANSION JOINT COVER SYSTEM

8 0 8 16  
SCALE OF FEET  
1/8" = 1'-0"

ISSUED FOR BID

|       |  |
|-------|--|
| Seal: |  |
| Seal: |  |

G|W  
W|O

GWWO INC.  
802 WYMAN PARK DRIVE, SUITE 300  
BALTIMORE, MARYLAND 21211, 410-352-1909

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LICENSE NUMBER: 10810, EXPIRATION DATE: 11/04/2020

| Revisions: |            |             |
|------------|------------|-------------|
| No.        | Date       | Description |
| 6          | 04/22/2020 | Addendum #6 |

WAVERLEY ELEMENTARY  
SCHOOL REPLACEMENT

MARYLAND PSC NO. 10.058.21  
FREDERICK COUNTY PUBLIC SCHOOLS

|         |              |     |          |
|---------|--------------|-----|----------|
| Job No. | #18045       | JND | Drawn    |
| Scale   | As indicated | JTH | Checked  |
| Date    | 03/16/2020   | PLH | Approved |

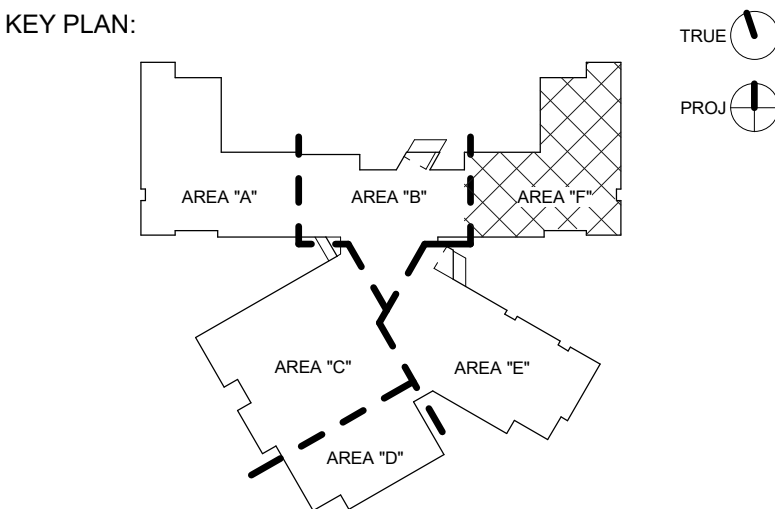
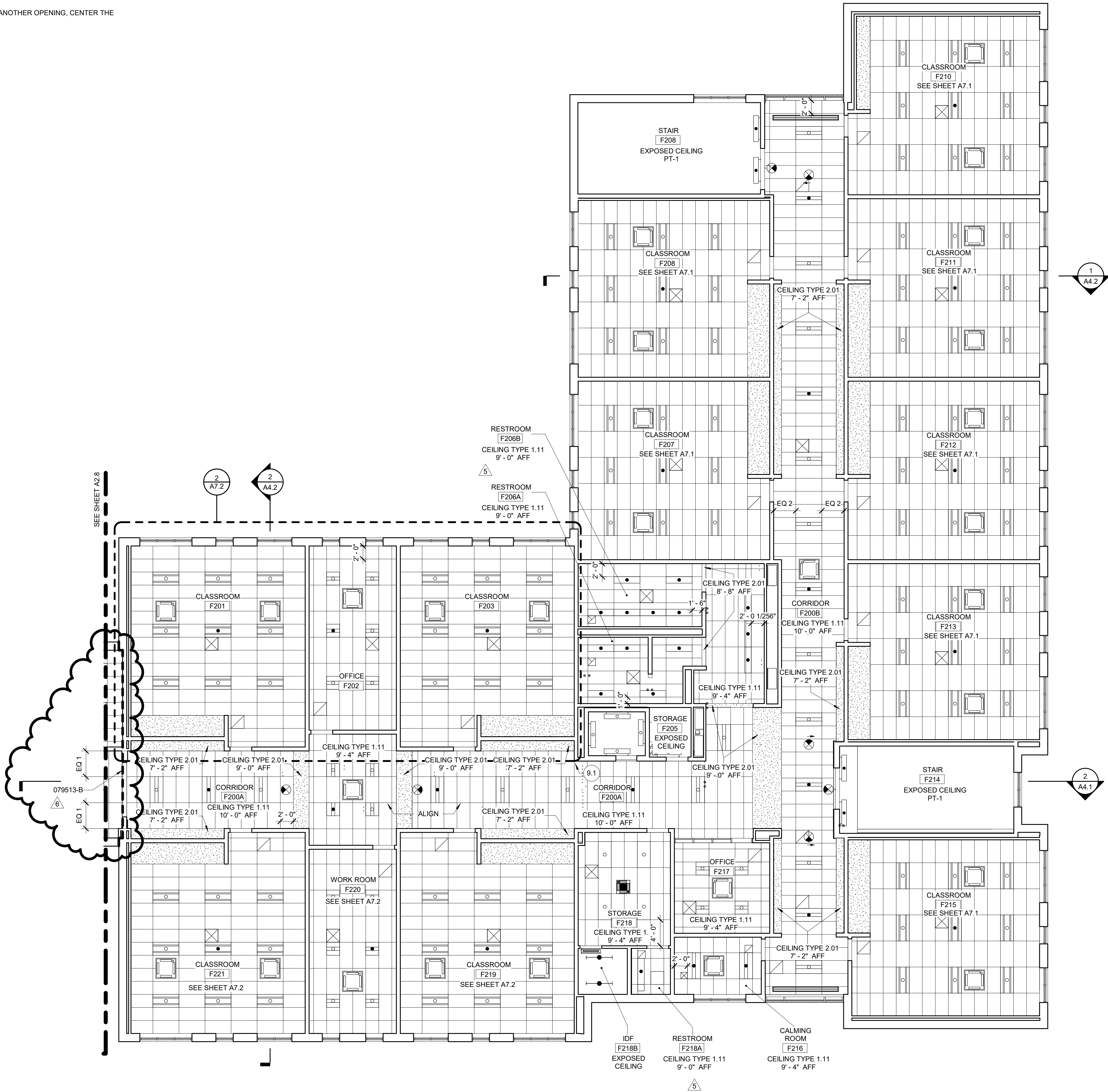
Drawing Title  
REFLECTED CEILING  
PLAN - SECOND  
FLOOR - AREA B

Drawing Number  
A2.8

Sheet

Of

- GENERAL NOTES
1. IN FINISHED AREAS, ALL EXPOSED-STRUCTURE CEILINGS AND ALL AREAS ABOVE CEILING CLOUDS SHALL BE PAINTED, INCLUDING ALL SURFACES AND MECHANICAL EQUIPMENT, PIPING, HANGERS, DUCTS, STRUCTURAL COMPONENTS, DECKING, WALL, AND CEILING COMPONENTS. EXCEPTIONS: UNLESS OTHERWISE NOTED, PRE-FINISHED SURFACES, AND WHERE PAINTING IS PROHIBITED BY MANUFACTURER OR AUTHORITY HAVING JURISDICTION.
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KEYNOTES LISTED ON THIS SHEET ARE FOR CONVENIENCE ONLY. REFER TO SHEET CS.3 FOR COMPLETE LIST

079513-B INTERIOR EXPANSION JOINT COVER SYSTEM

8 0 8 16

SCALE OF FEET

1/8" = 1'-0"

ISSUED FOR BID

|       |  |
|-------|--|
| Seal: |  |
| Seal: |  |

**G|W**  
**W|O**

GWIO INC.  
802 WYMAN PARK DRIVE, SUITE 300  
BALTIMORE, MARYLAND 21211, 410-353-1909

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LICENSE NUMBER: 10810, EXPIRATION DATE: 11/04/2020

| Revisions: |            |             |
|------------|------------|-------------|
| No.        | Date       | Description |
| 5          | 04/15/2020 | Addendum #5 |
| 6          | 04/22/2020 | Addendum #6 |

## WAVERLEY ELEMENTARY SCHOOL REPLACEMENT

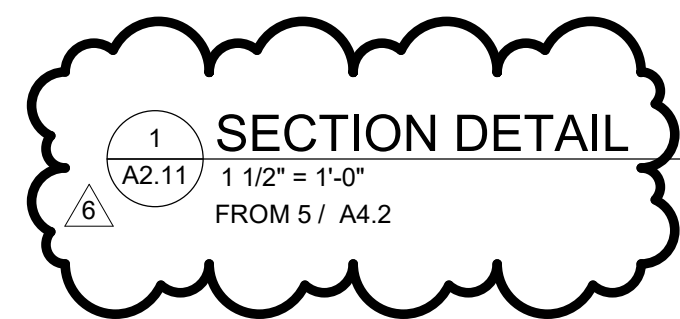
MARYLAND PSC NO. 10.058.21  
FREDERICK COUNTY PUBLIC SCHOOLS

|                |  |     |          |
|----------------|--|-----|----------|
| Job No.        | #18045   | JND | Drawn    |
| Scale          | As indicated   | JTH | Checked  |
| Date           | 03/16/2020   | PLH | Approved |
| Drawing Title  | REFLECTED CEILING<br>PLAN - SECOND<br>FLOOR - AREA F |     |          |
| Drawing Number | A2.10  |     |          |

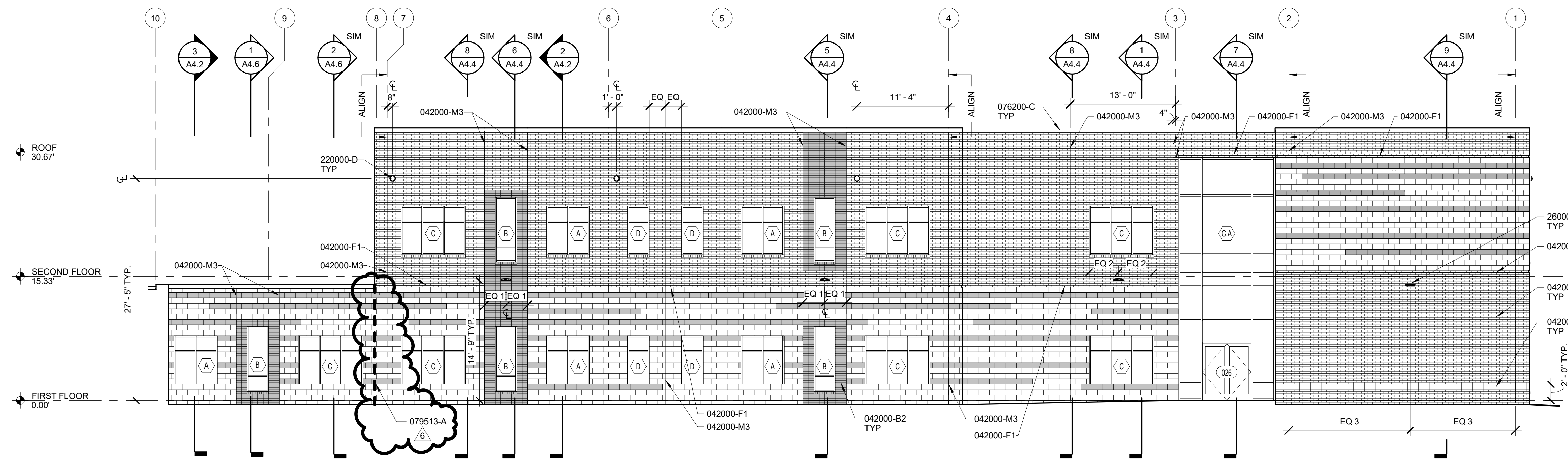
|       |    |
|-------|----|
| Sheet | Of |
|-------|----|

1  
A2.10  
1/8" = 1'-0"

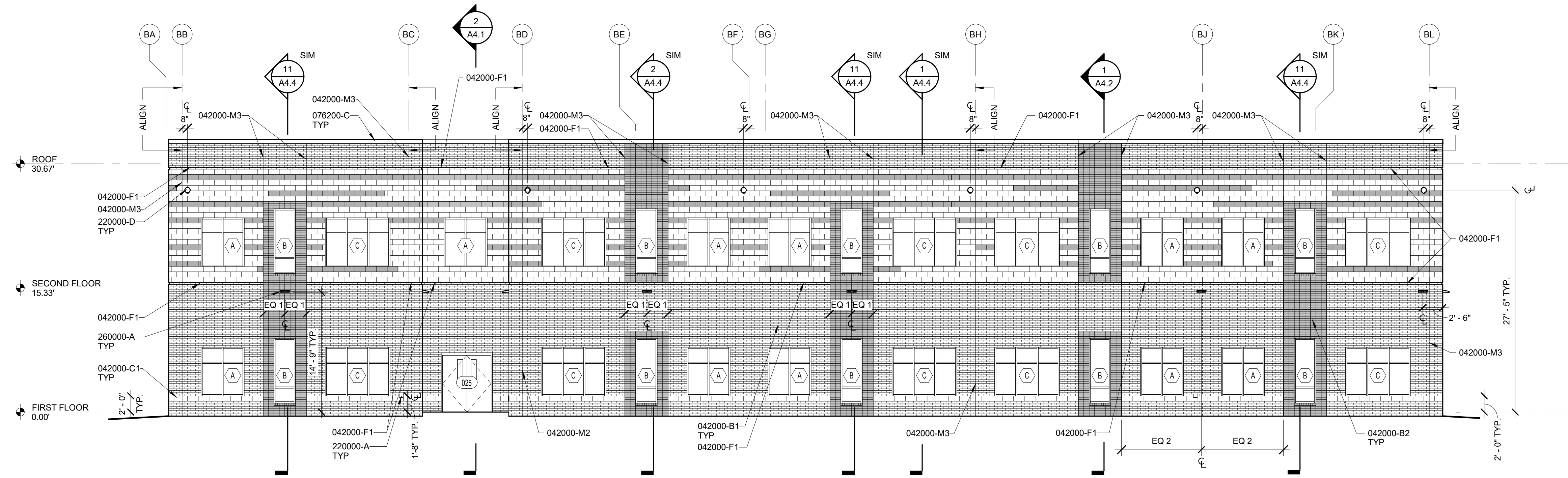
RCP - SECOND FLOOR - AREA F



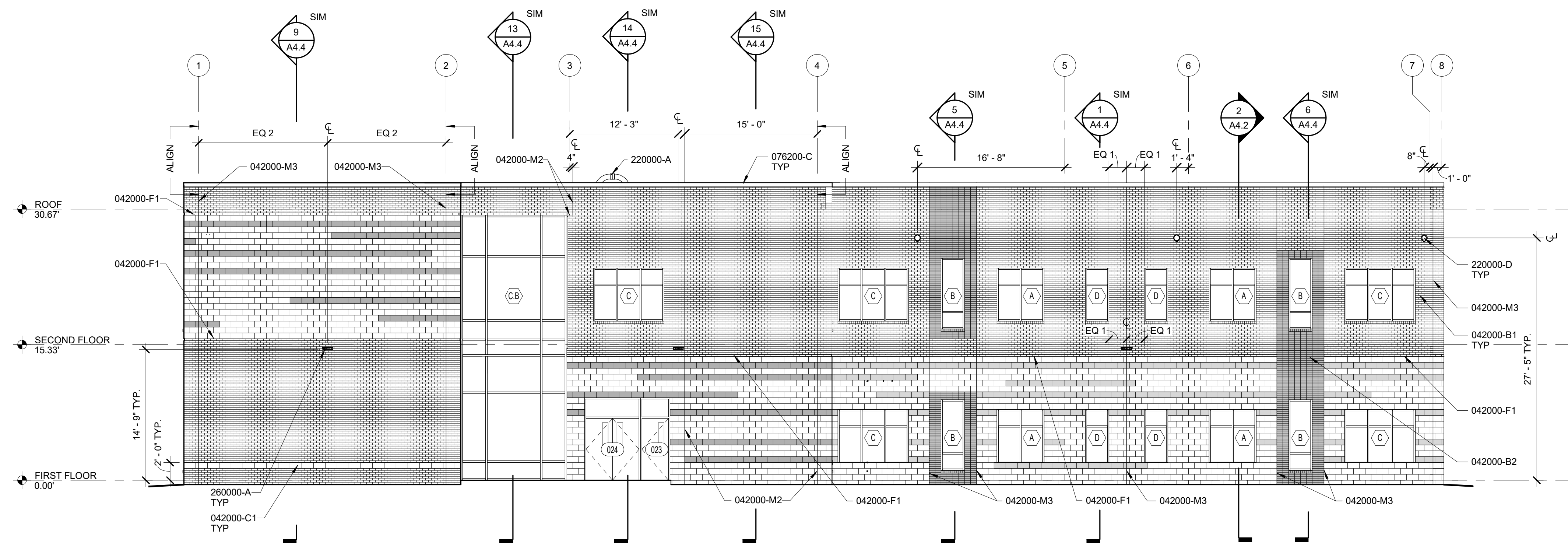
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| Sheet | Of |
|-------|----|



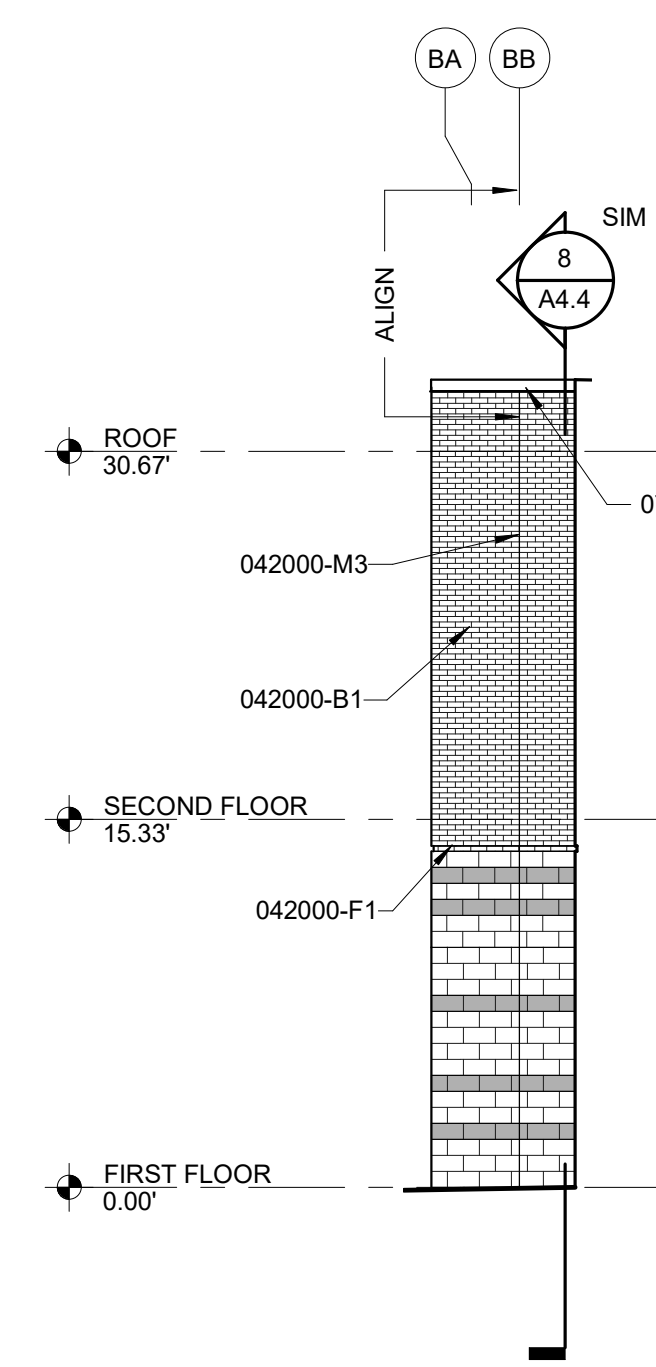
1 AREA F - NORTH  
A3.1 1/8" = 1'-0"  
FROM 1 / A1.6



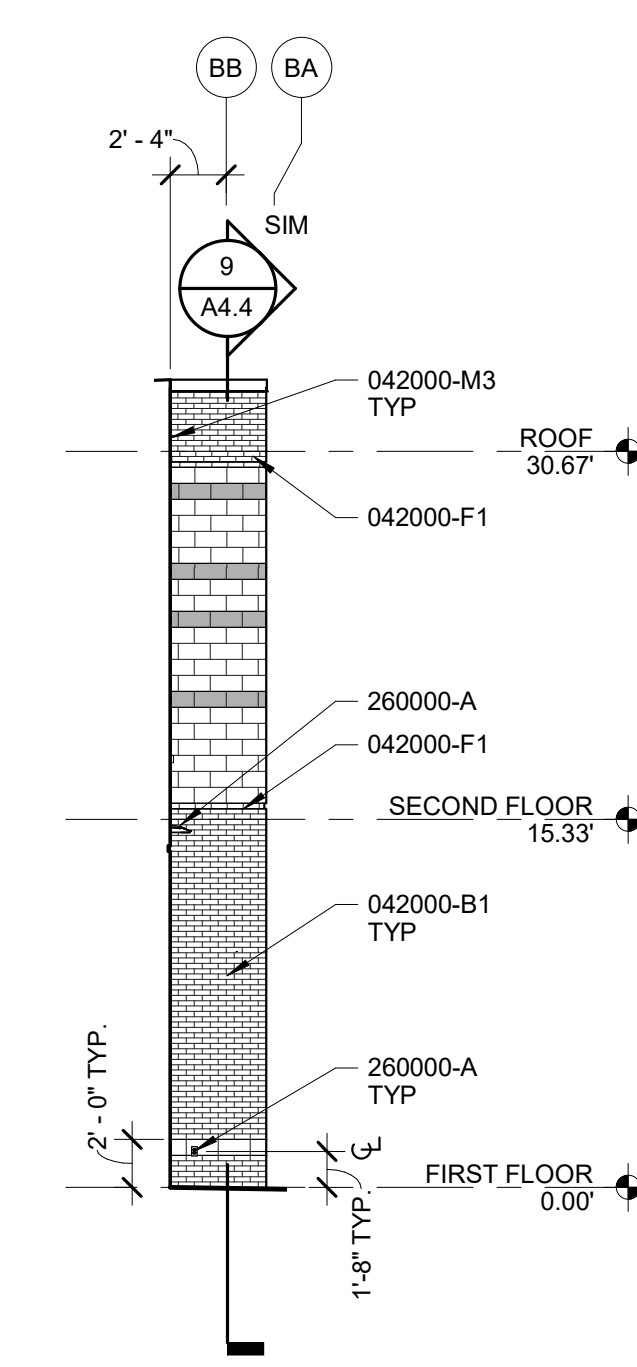
4 AREA F - WEST  
A3.1 1/8" = 1'-0"  
FROM 1 / A1.6



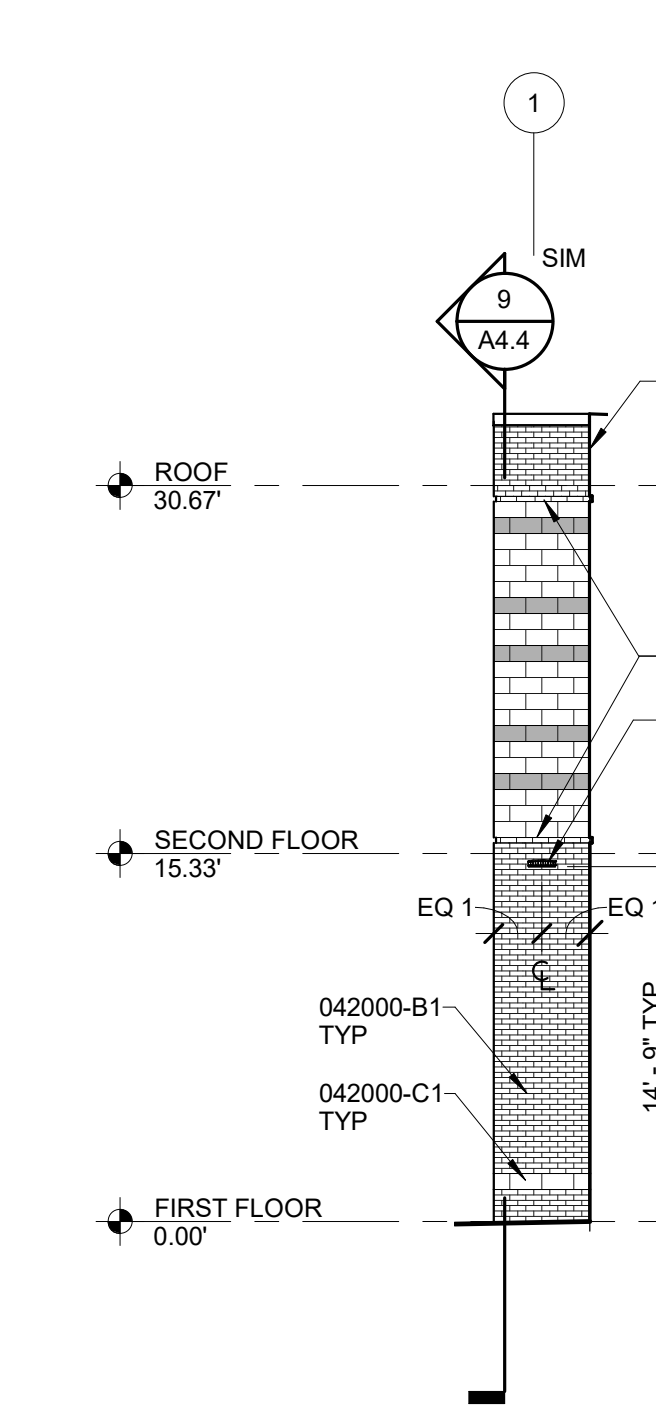
6 AREA F - SOUTH  
A3.1 1/8" = 1'-0"  
FROM 1 / A1.6



2 AREA F - WEST RETURN  
A3.1 1/8" = 1'-0"



3 AREA F - EAST RETURN  
A3.1 1/8" = 1'-0"



5 AREA F - WEST - TYP RETURN  
A3.1 1/8" = 1'-0"  
FROM 1 / A1.7

KEY PLAN:

KEYNOTES LISTED ON THIS SHEET ARE FOR CONVENIENCE ONLY. REFER TO SHEET CS.3 FOR COMPLETE LIST

042000-B1 FACE BRICK 1, SIZE AS INDICATED  
042000-B2 FACE BRICK 2, SIZE AS INDICATED  
042000-C1 DECORATIVE CMU 1, SIZE AS INDICATED  
042000-F1 FACE BRICK 1, REVEAL COURSE  
042000-M2 BOND BREAKER STRIP  
042000-M3 CONTROL JOINT  
076200-C METAL COPING  
079513-A EXTERIOR EXPANSION JOINT COVER SYSTEM  
PLUMBING (REFER TO PLUMBING FOR MORE INFORMATION)  
220000-D THROUGH WALL DOWNSPOUT NOZZLE. REFER TO PLUMBING DOCUMENTS  
260000-A ELECTRICAL (REFER TO ELECTRICAL FOR MORE INFORMATION)

8 0 8 16  
SCALE OF FEET  
1/8" = 1'-0"

ISSUED FOR BID

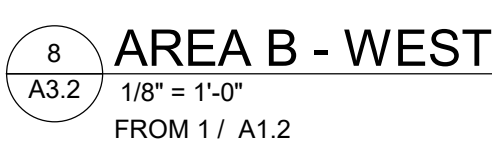
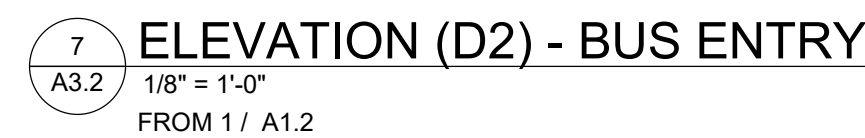
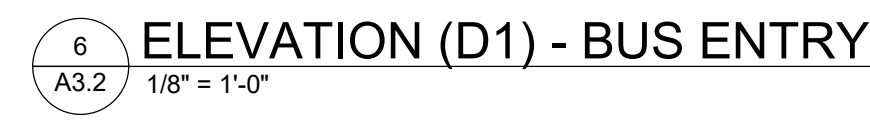
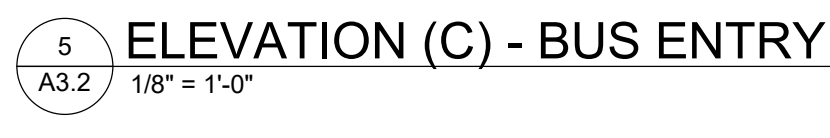
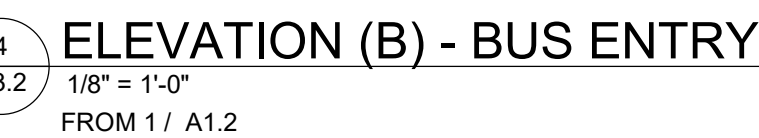
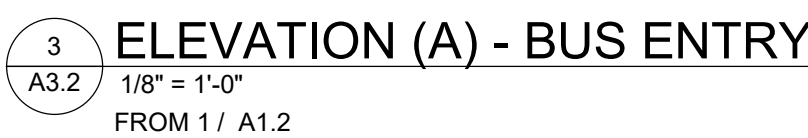
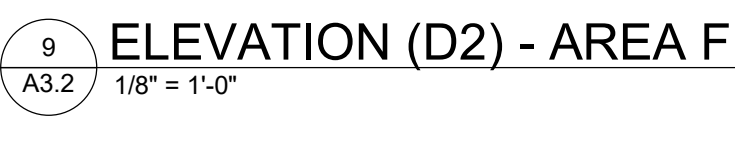
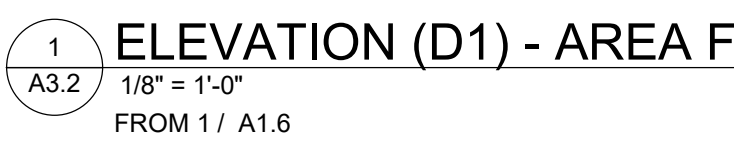
|  |  |
|--|--|
| Seal:  |  |
| Seal:  |  |
| <b>G W</b><br><b>W O</b>   |  |
| <small>GWWO INC.<br/>800 WYMAN PARK DRIVE, SUITE 300<br/>BALTIMORE, MARYLAND 21211, 410-352-1909</small>   |  |
| <small>© 2020 GWWO INC.</small>  |  |
| <small>I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NUMBER: 10810, EXPIRATION DATE: 11/04/2020</small> |  |
| Revisions:   |  |
| No. Date Description   |  |
| 6 04/22/2020 Addendum #6   |  |

WAVERLEY ELEMENTARY  
SCHOOL REPLACEMENTMARYLAND PSC NO. 10.058.21  
FREDERICK COUNTY PUBLIC SCHOOLS

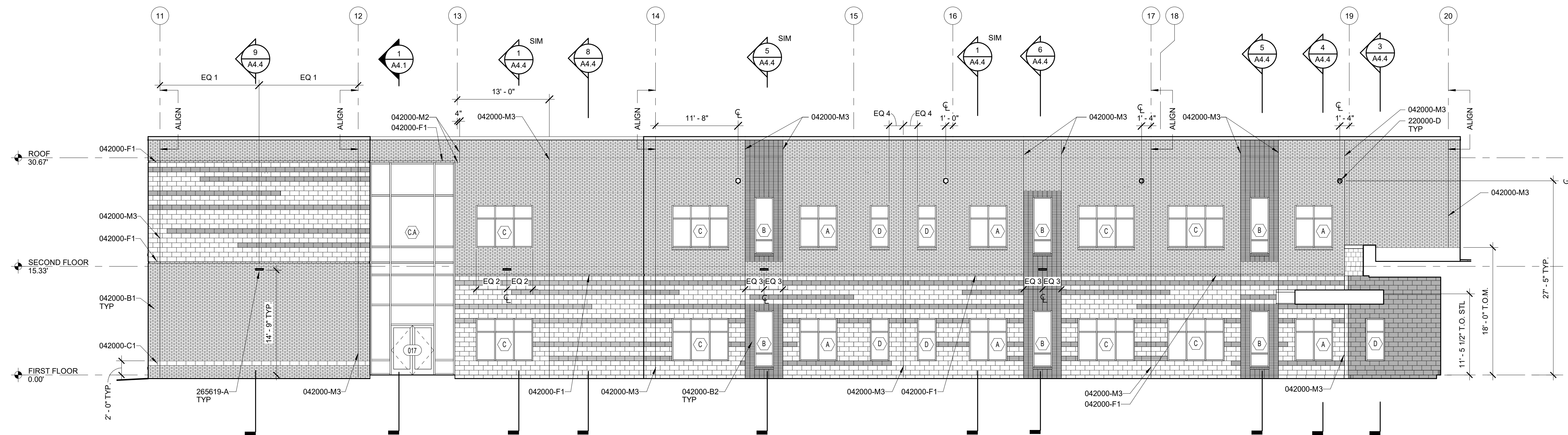
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|---------------|---------------------|-----|----------------|
| Job No.       | #18045              | EMG | Drawn          |
| Scale         | 1/8" = 1'-0"        | JTH | Checked        |
| Date          | 03/16/2020          | PLH | Approved       |
| Drawing Title | EXTERIOR ELEVATIONS |     | Drawing Number |

A3.1

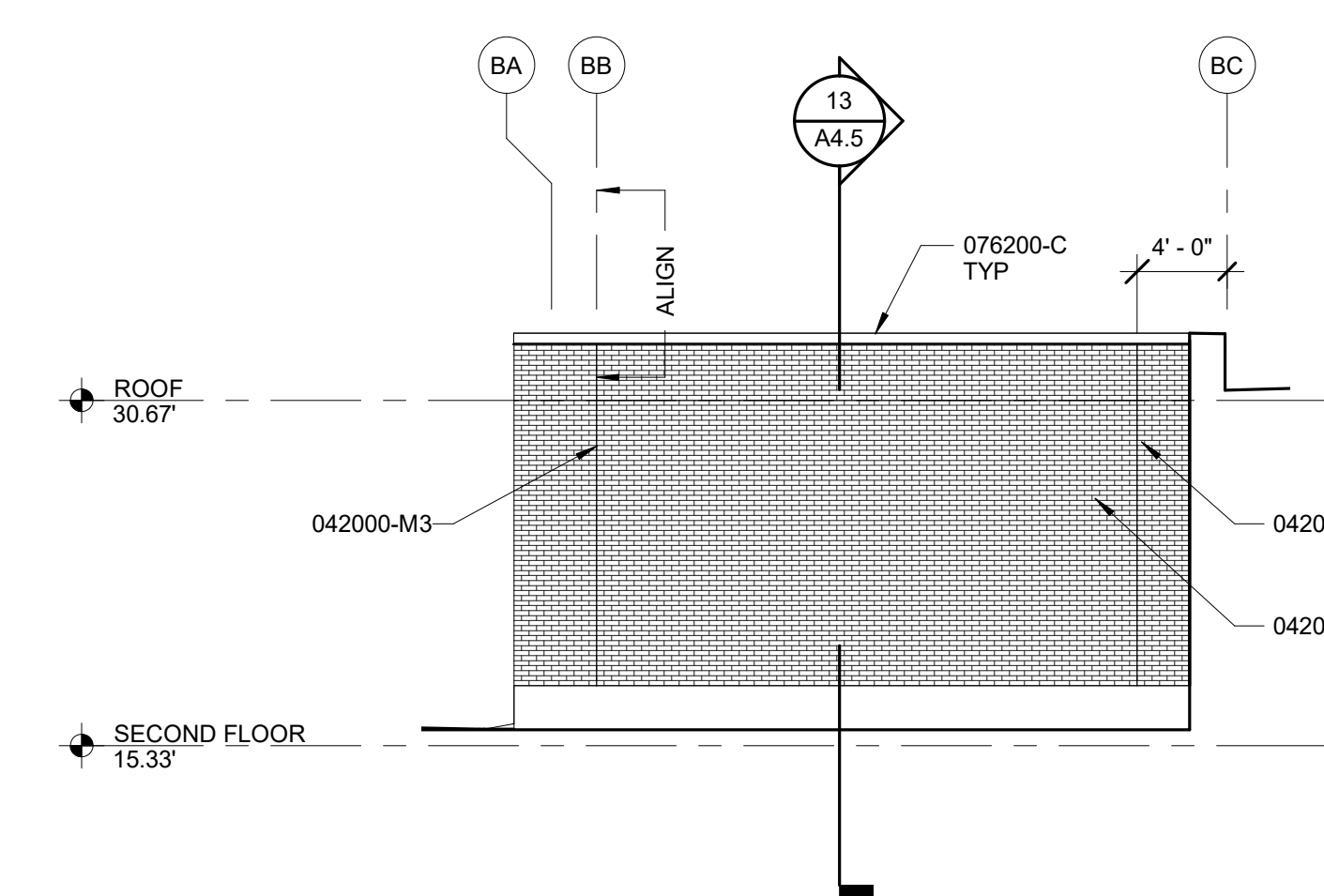
SEE 9/A3.7 FOR TYP.  
CMU STRIPING PATTERN



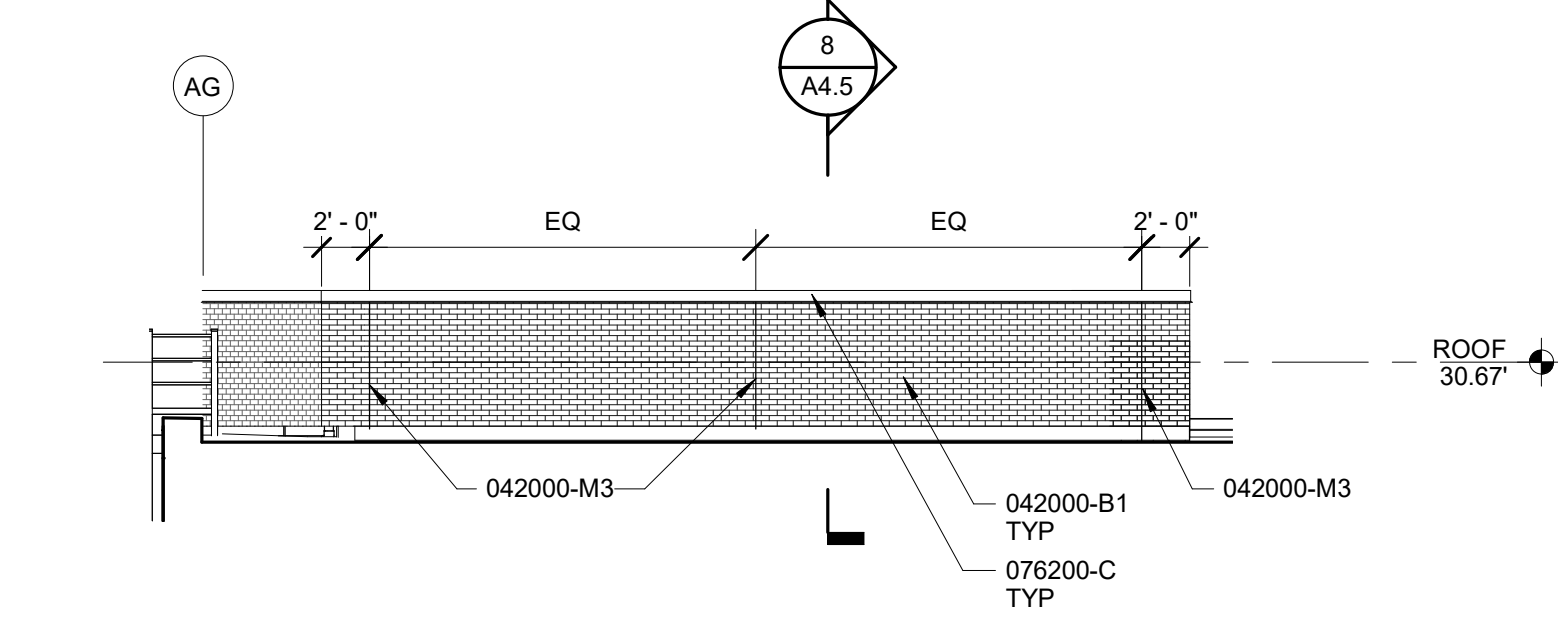
**SEE 9/A3.7 FOR TYP.  
CMU STRIPING PATTERN**



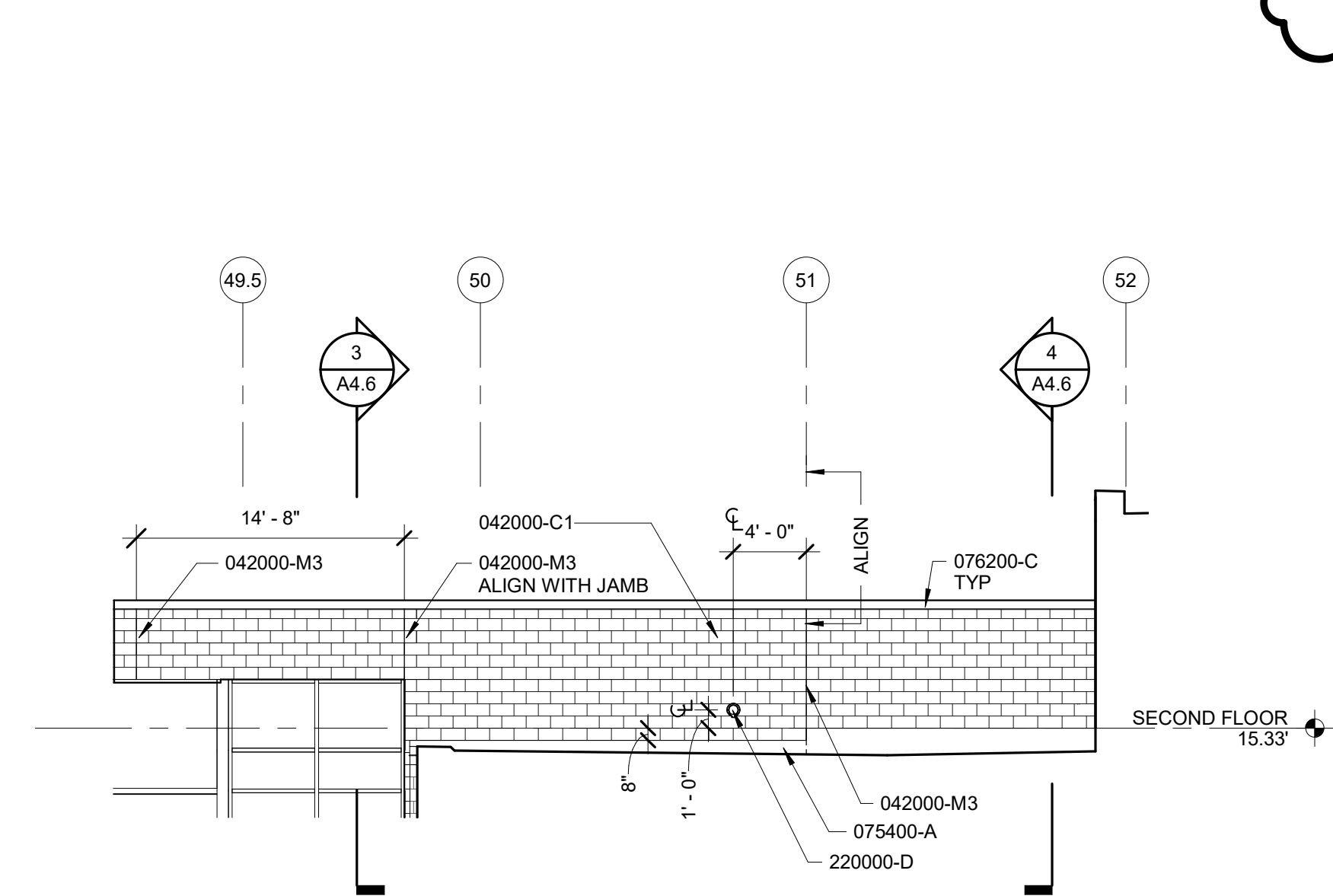
1 AREA A - NORTH  
A3.4 1/8" = 1'-0"  
FROM 1 / A1.1



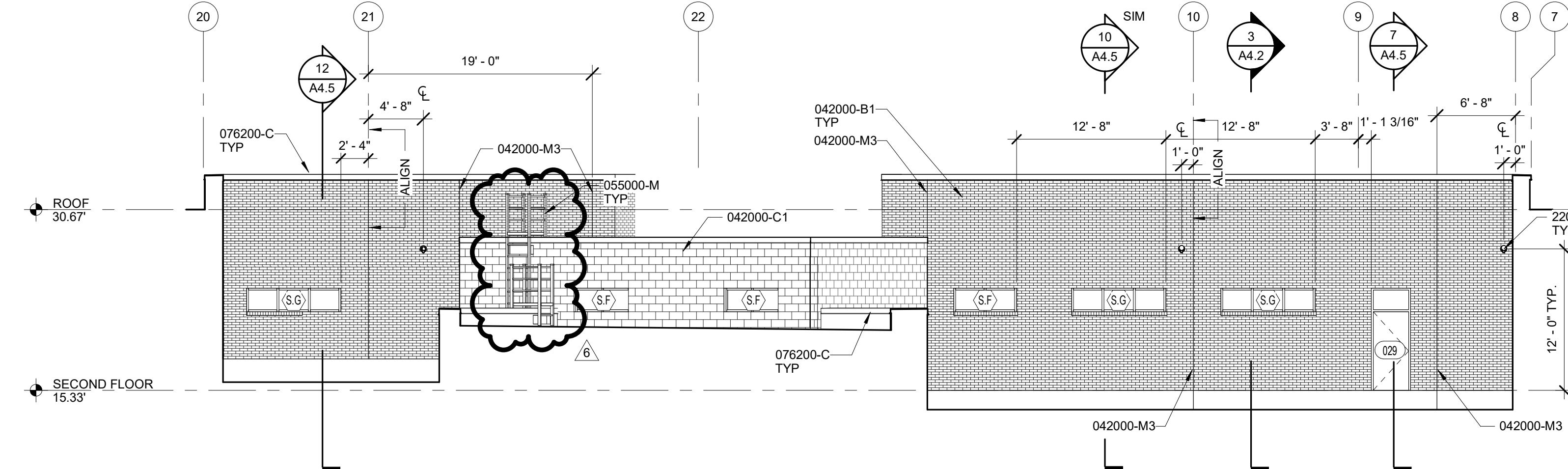
2 AREA B - WEST  
A3.4 1/8" = 1'-0"  
FROM 1 / A1.8



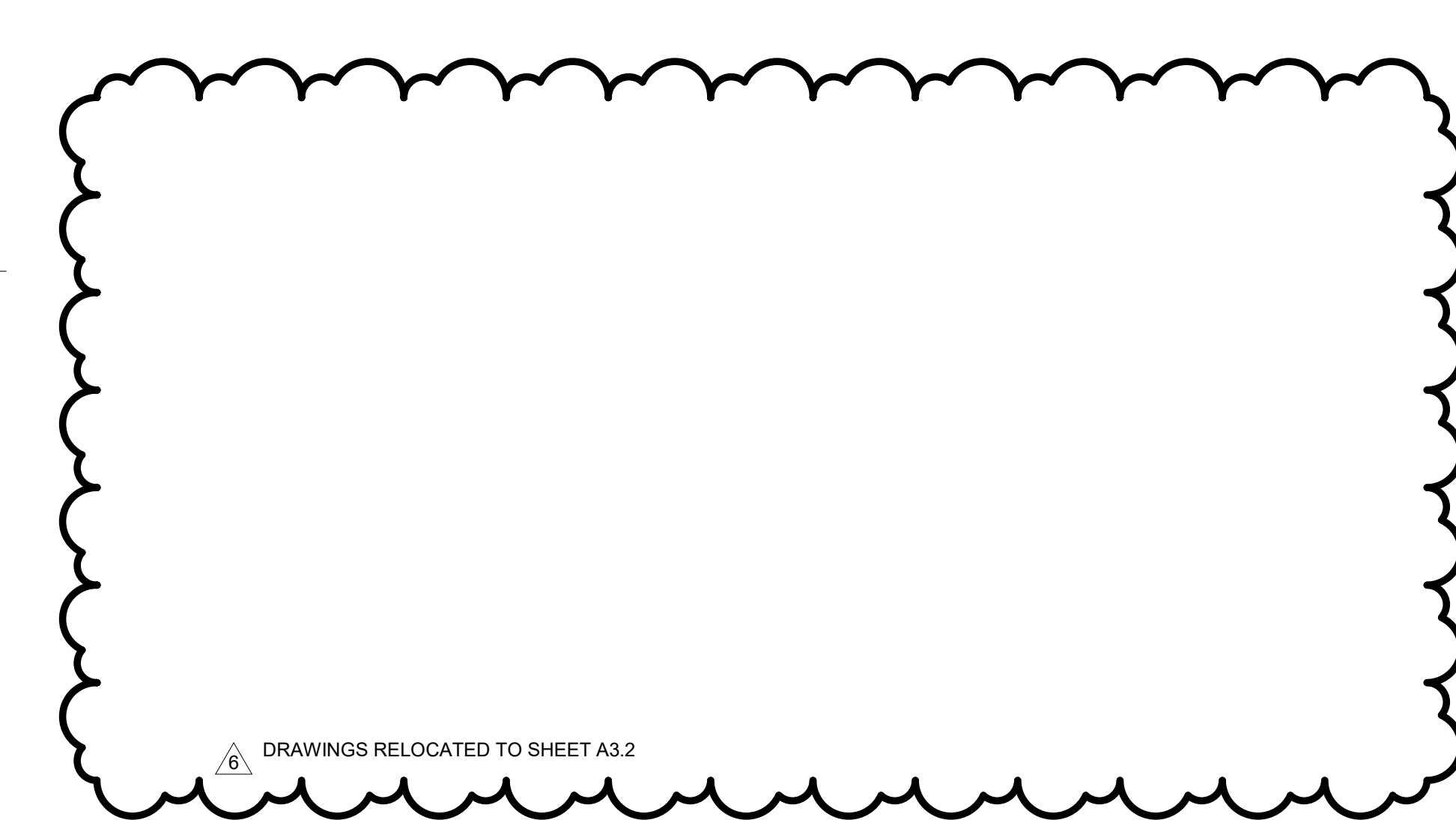
5 AREA B - ROOF NORTHWEST  
A3.4 1/8" = 1'-0"  
FROM 1 / A1.12



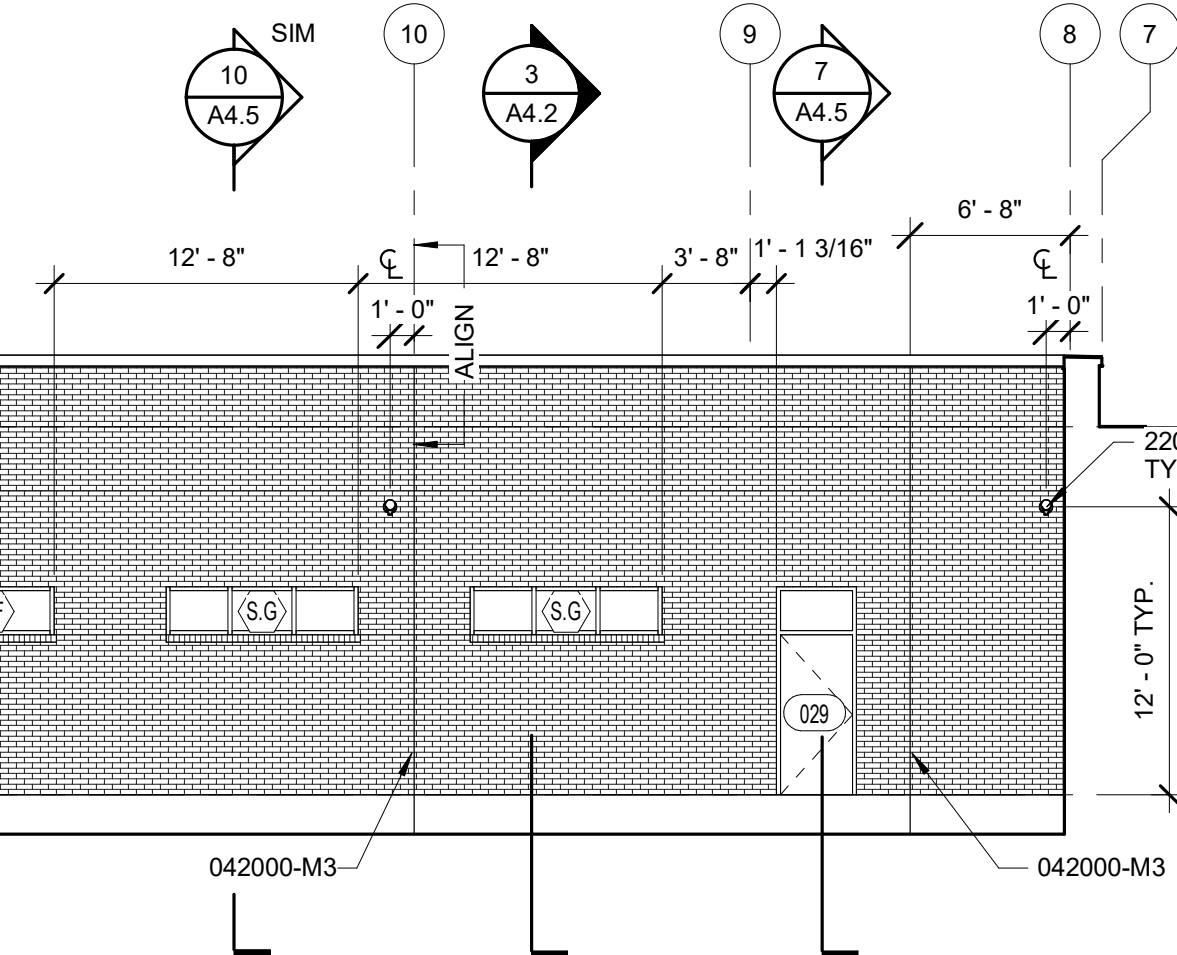
9 ELEVATION (B) - MAIN ENTRY  
A3.4 1/8" = 1'-0"  
FROM 1 / A1.8



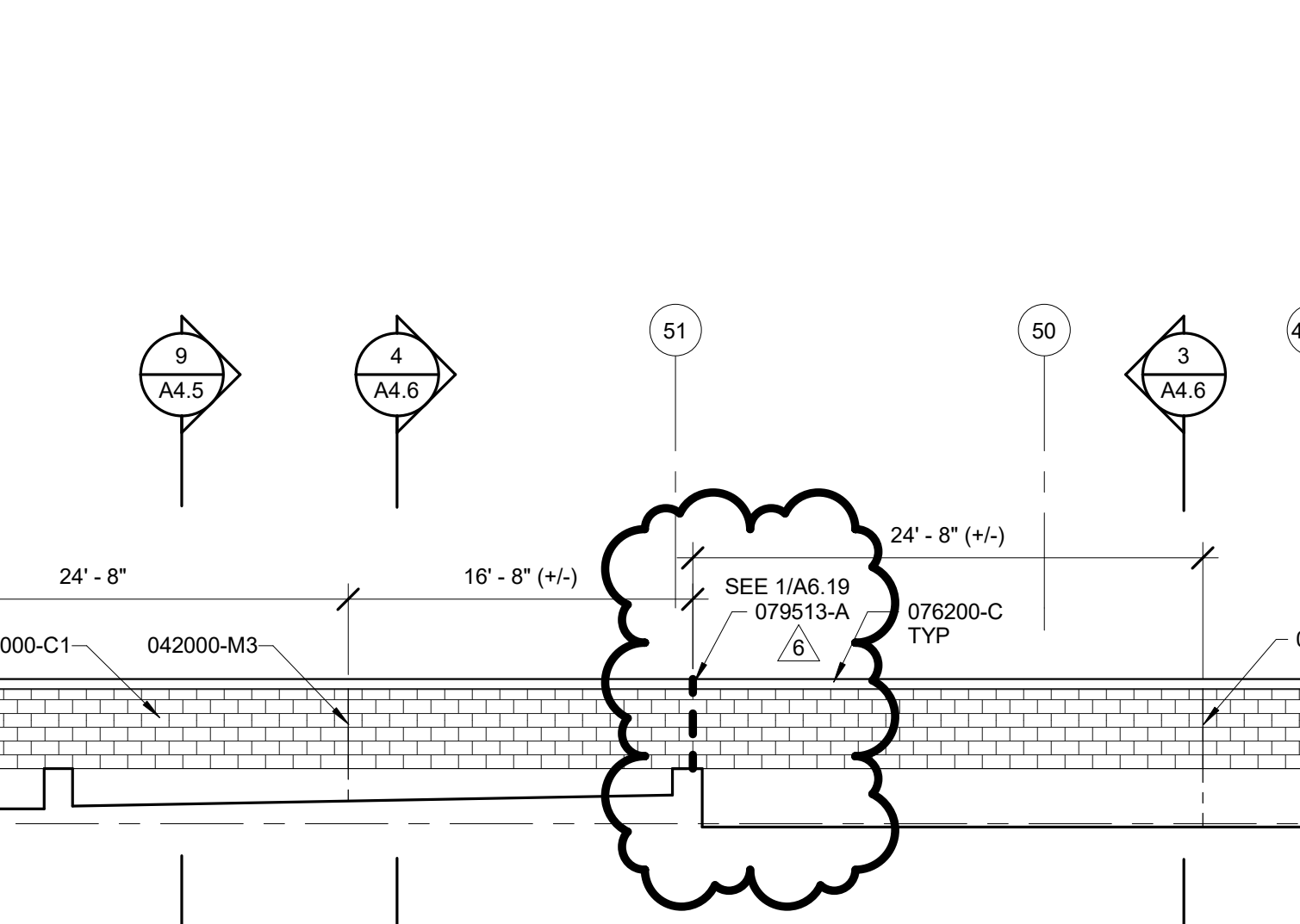
3 AREA B - NORTH  
A3.4 1/8" = 1'-0"  
FROM 1 / A1.8



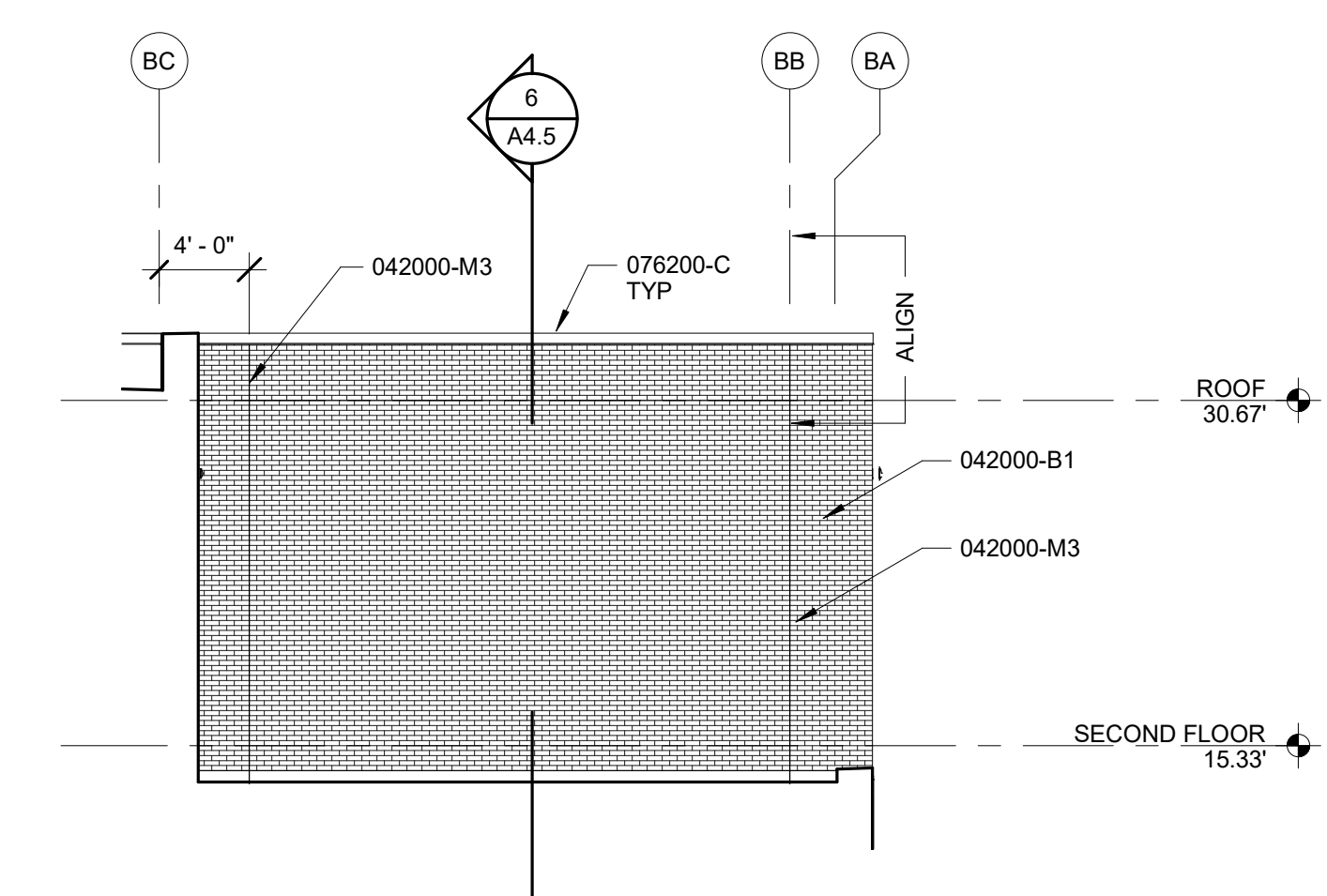
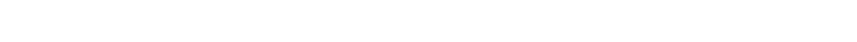
6 DRAWINGS RELOCATED TO SHEET A3.2



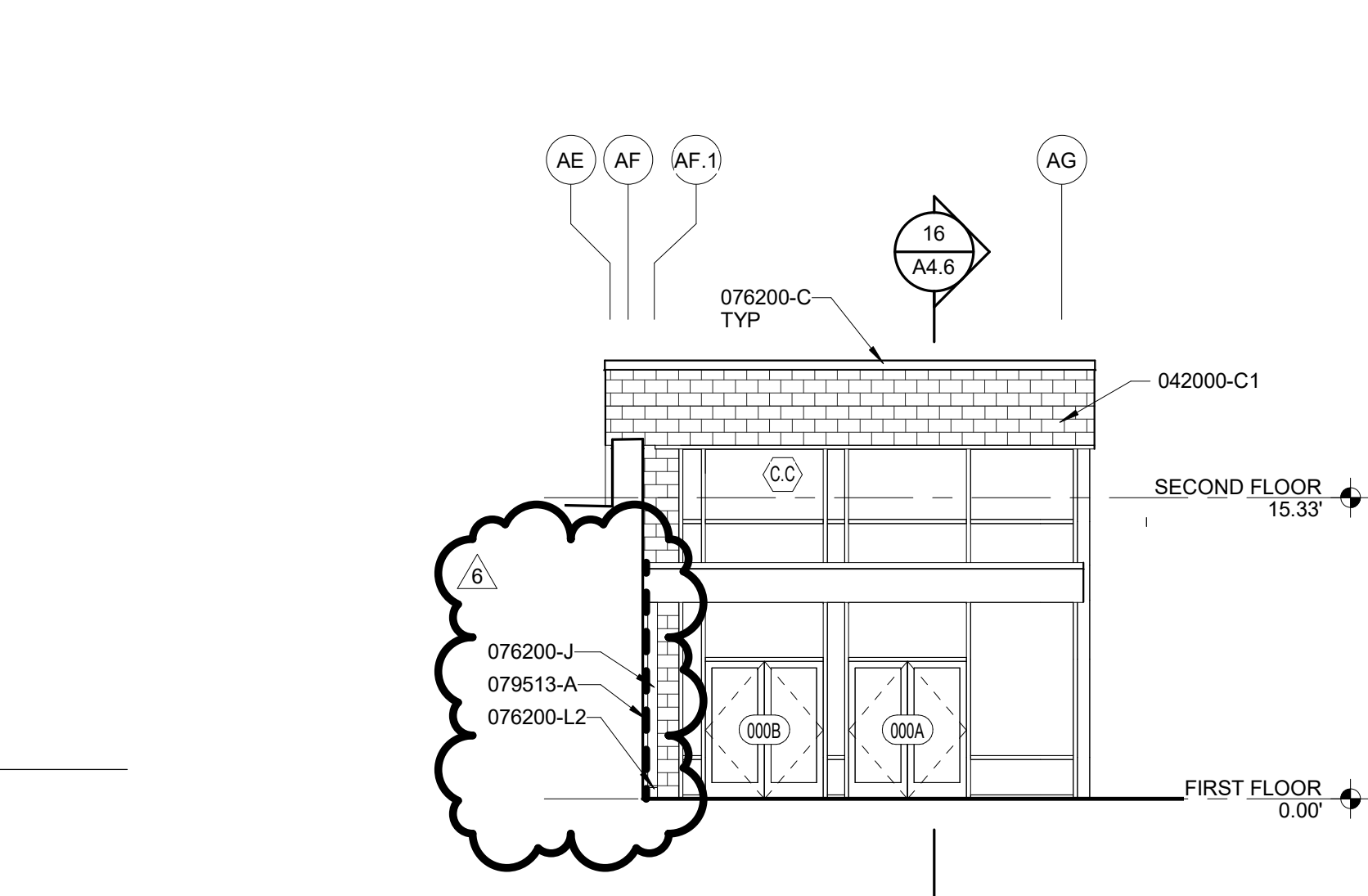
8 AREA B - ROOF SOUTHEAST  
A3.4 1/8" = 1'-0"  
FROM 1 / A1.12



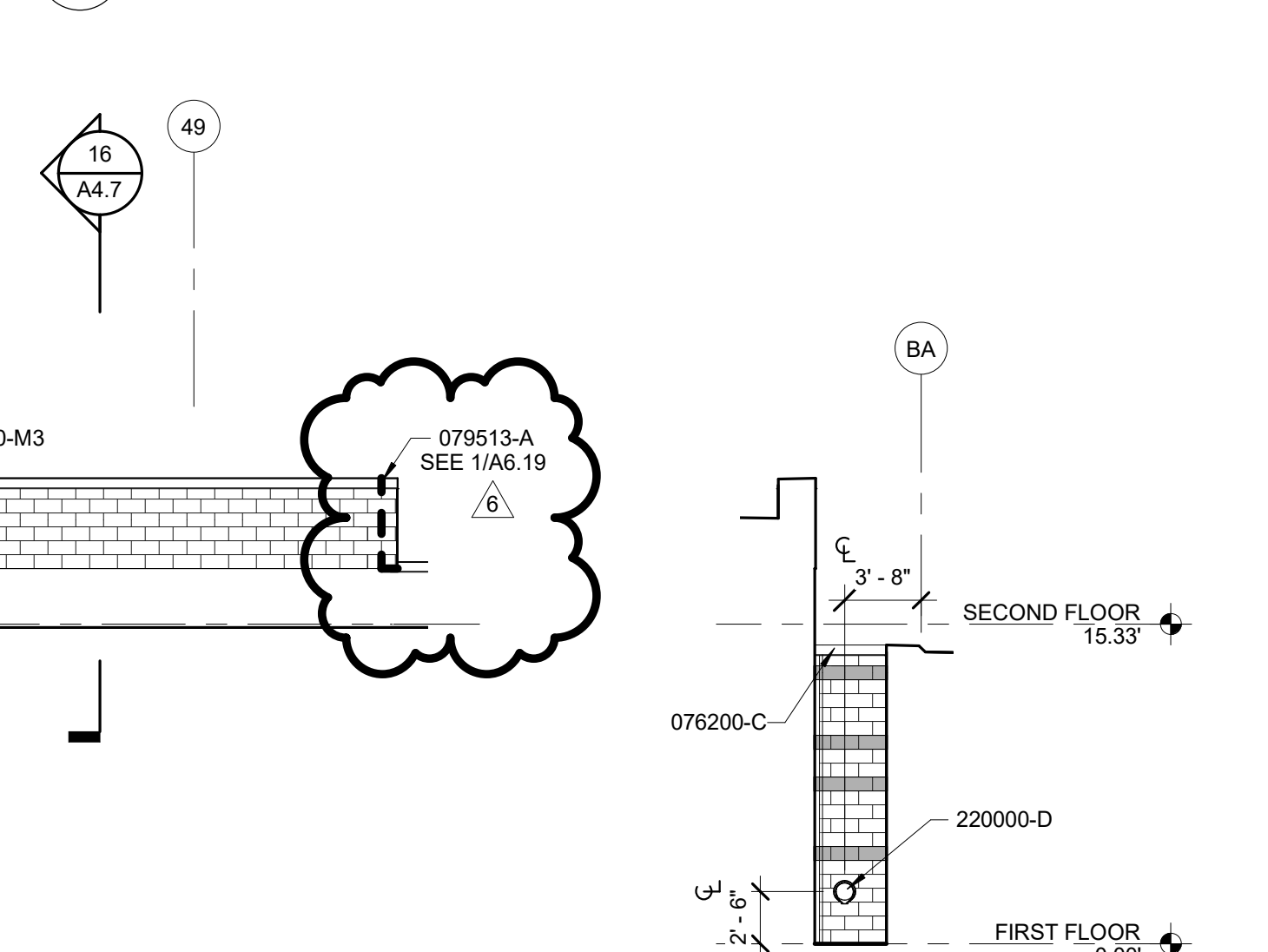
11 ELEVATION (D) - MAIN ENTRY  
A3.4 1/8" = 1'-0"  
FROM 1 / A1.8



4 AREA B - EAST  
A3.4 1/8" = 1'-0"  
FROM 1 / A1.8



13 ELEVATION (A) - MAIN ENTRY  
A3.4 1/8" = 1'-0"



12 AREA E - WEST  
A3.4 1/8" = 1'-0"  
FROM 1 / A1.2



SEE 9/A3.7 FOR TYP.  
CMU STRIPING PATTERN

KEY PLAN:

KEYNOTES LISTED ON THIS SHEET ARE FOR CONVENIENCE ONLY. REFER TO SHEET CS.3 FOR COMPLETE LIST

042000-B1 FACE BRICK 1, SIZE AS INDICATED  
042000-B2 FACE BRICK 2, SIZE AS INDICATED  
042000-C1 DECORATIVE CMU 1, SIZE AS INDICATED  
042000-F1 FACE BRICK 1, REVEAL COURSE  
042000-M2 BOND BREAKER STRIP  
042000-M3 CONTROL JOINT  
055000-M PREFABRICATED ALUMINUM LADDER  
075400-A THERMOPLASTIC (TPO) MEMBRANE  
076200-C METAL COPING  
076200-J METAL DOWNSPOUT, 4" X 4" MINIMUM  
076200-L2 DOWNSPOUT BOOT  
079513-A EXTERIOR EXPANSION JOINT COVER SYSTEM  
220000-D THROUGH WALL DOWNSPOUT NOZZLE, REFER TO PLUMBING DOCUMENTS  
265619-A EXTERIOR LIGHTING

8 0 8 16  
SCALE OF FEET  
1/8" = 1'-0"

ISSUED FOR BID

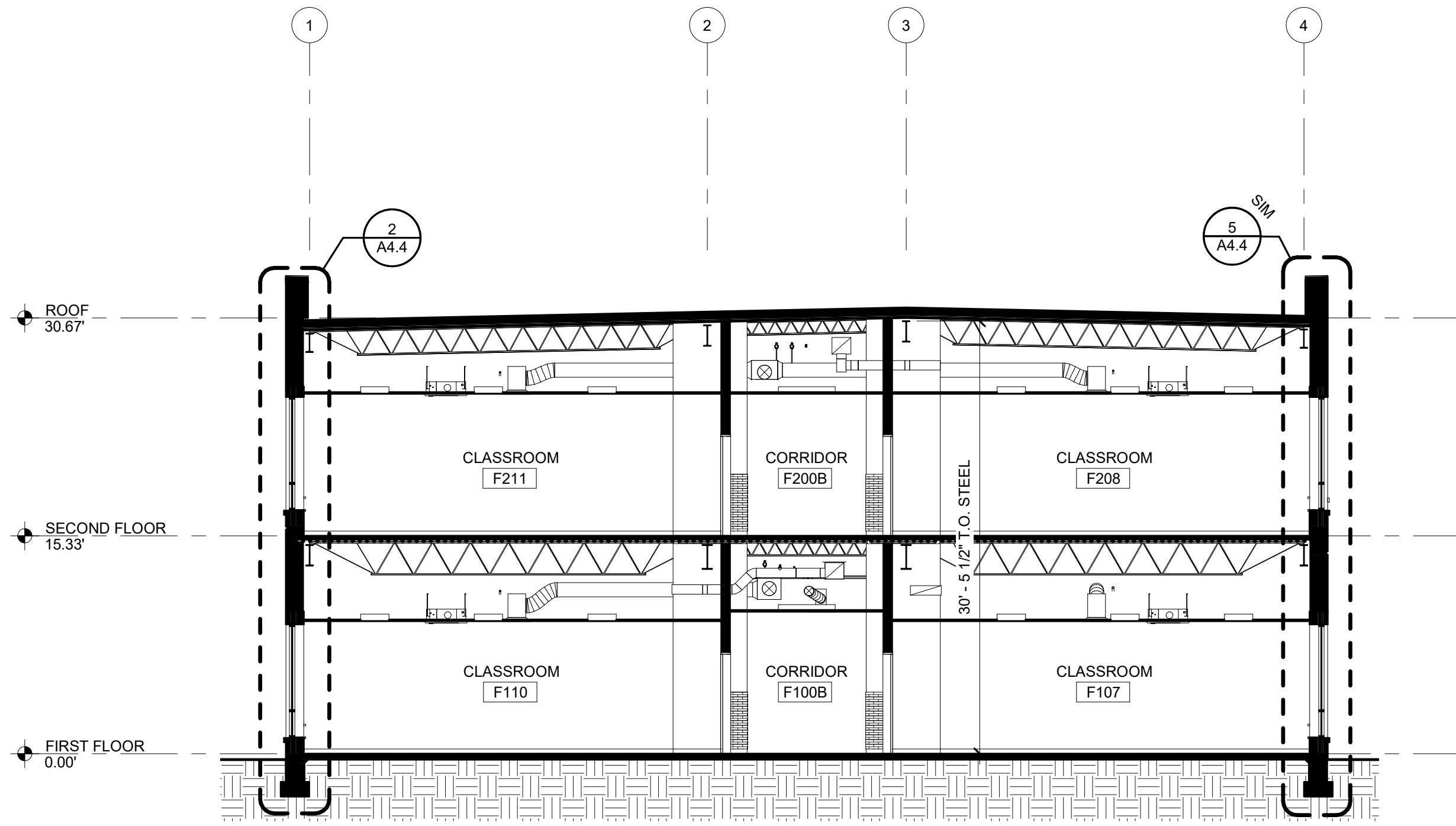
|   |             |
|---|-------------|
| Seal:   |             |
| Seal:   |             |
| G W<br>W O  |             |
| G W<br>W O<br>800 WYMAN PARK DRIVE, SUITE 300<br>BALTIMORE, MARYLAND 21211, 410-352-1909  |             |
| © 2020 GWWO INC.  |             |
| I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NUMBER 10810, EXPIRATION DATE 11/04/2020 |             |
| Revisions:  |             |
| No.   | Date        |
| 6   | 04/22/2020  |
| Description   | Addendum #6 |

WAVERLEY ELEMENTARY  
SCHOOL REPLACEMENT

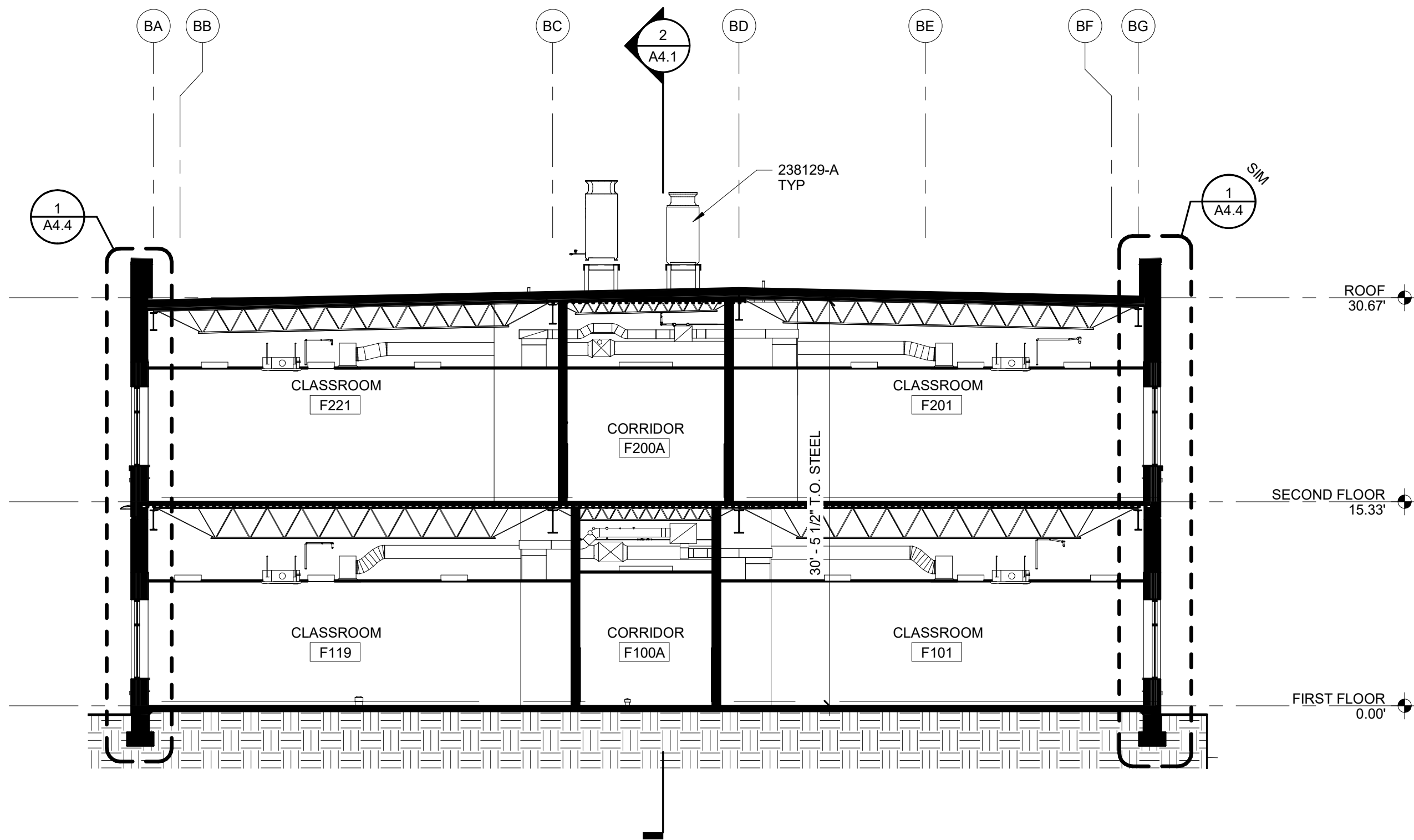
MARYLAND PSC NO. 10.058.21  
FREDERICK COUNTY PUBLIC SCHOOLS

|               |                        |     |                |
|---------------|------------------------|-----|----------------|
| Job No.       | #18045                 | EMG | Drawn          |
| Scale         | 1/8" = 1'-0"           | JTH | Checked        |
| Date          | 03/16/2020             | PLH | Approved       |
| Drawing Title | EXTERIOR<br>ELEVATIONS |     | Drawing Number |
| Sheet         | A3.4                   |     | Of             |

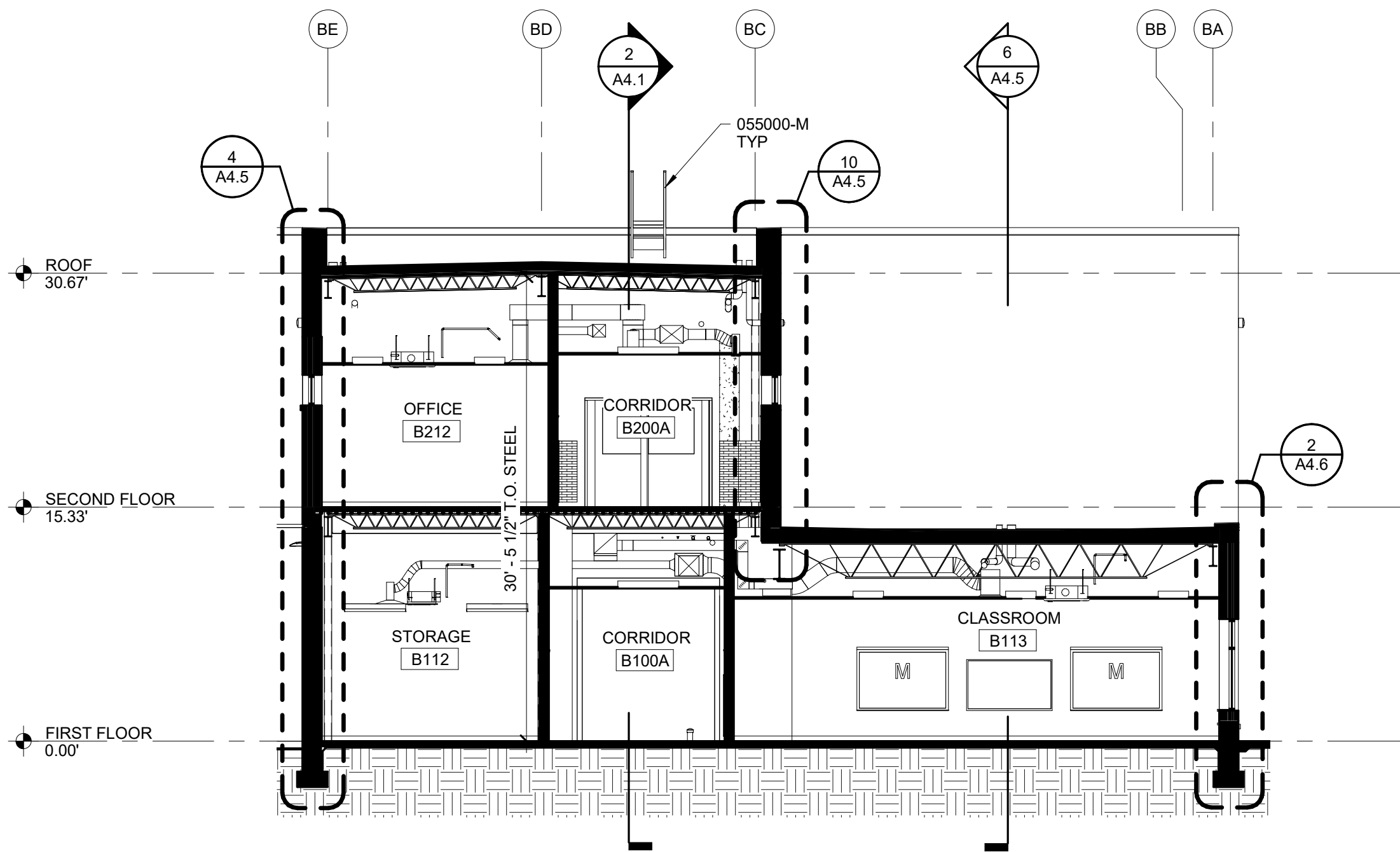




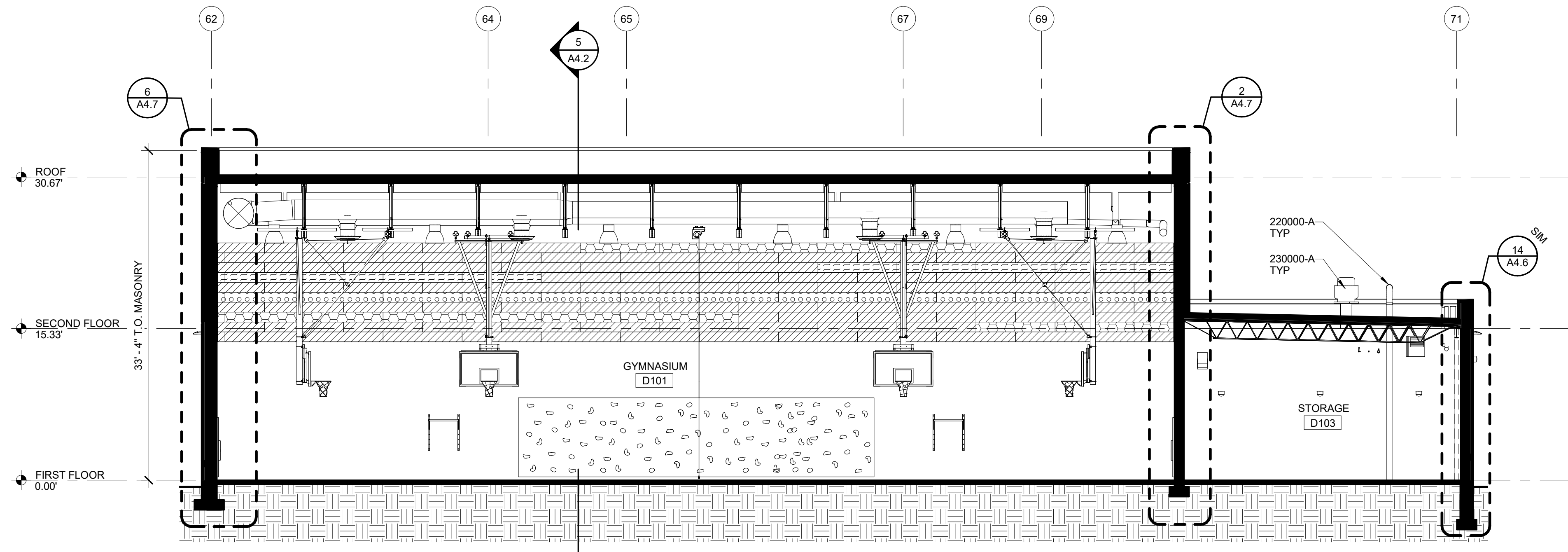
1 BUILDING SECTION  
A4.2 1/8" = 1'-0"  
FROM 1 / A1.1



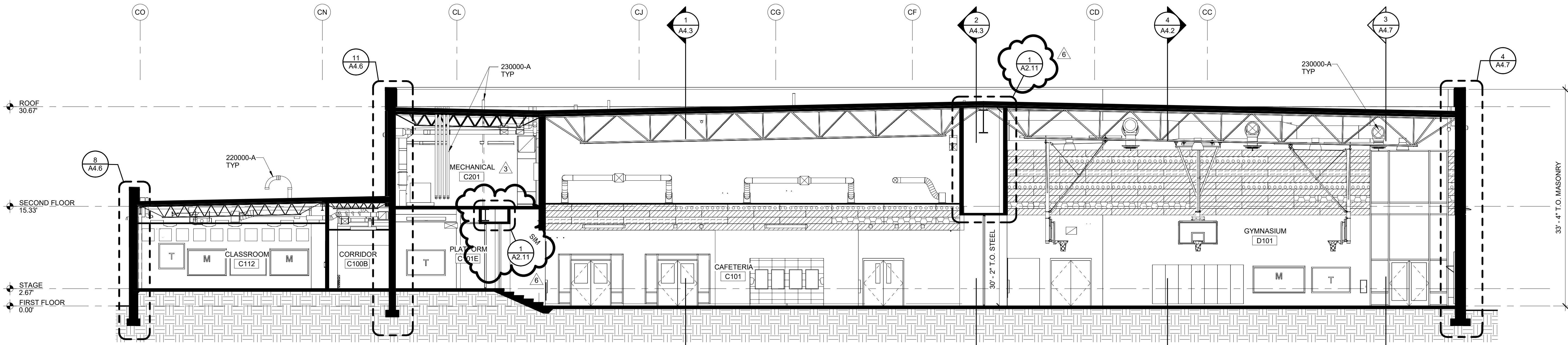
2 BUILDING SECTION  
A4.2 1/8" = 1'-0"  
FROM 1 / A1.1



3 BUILDING SECTION  
A4.2 1/8" = 1'-0"  
FROM 1 / A1.2



4 BUILDING SECTION  
A4.2 1/8" = 1'-0"  
FROM 1 / A1.4

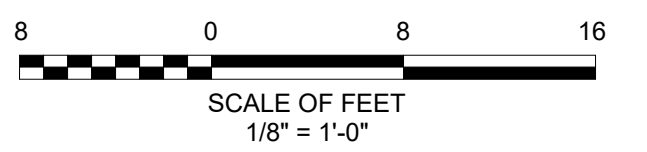


5 BUILDING SECTION  
A4.2 1/8" = 1'-0"  
FROM 1 / A1.3

KEY PLAN:

KEYNOTES LISTED ON THIS SHEET ARE FOR CONVENIENCE ONLY. REFER TO SHEET CS.3 FOR COMPLETE LIST

055000-M PREFABRICATED ALUMINUM LADDER  
220000-A PLUMBING (REFER TO PLUMBING FOR MORE INFORMATION)  
230000-A MECHANICAL (REFER TO MECHANICAL FOR MORE INFORMATION)  
238129-A CONDENSING UNIT (REFER TO MECHANICAL FOR MORE INFORMATION)



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GWIO INC.  
802 WYMAN PARK DRIVE, SUITE 300  
BALTIMORE, MARYLAND 21211, 410-353-1909

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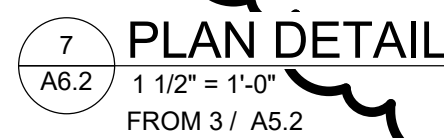
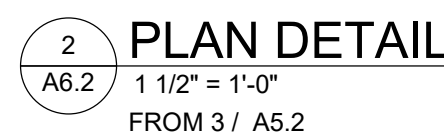
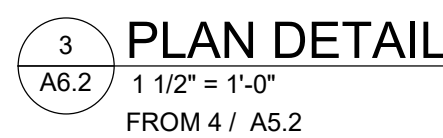
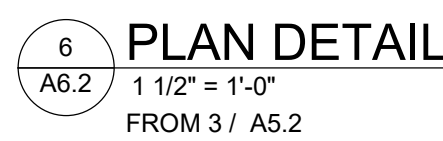
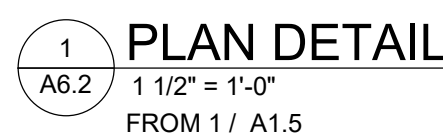
| Revisions: |            |             |
|------------|------------|-------------|
| No.        | Date       | Description |
| 3          | 04/03/2020 | Addendum #3 |
| 6          | 04/22/2020 | Addendum #6 |

WAVERLEY ELEMENTARY  
SCHOOL REPLACEMENT

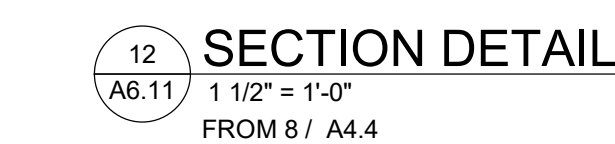
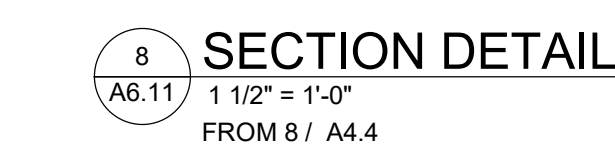
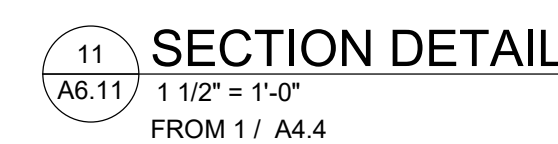
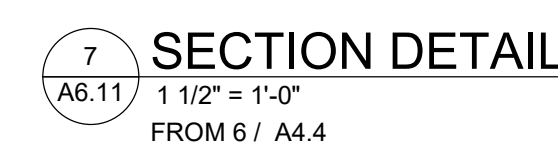
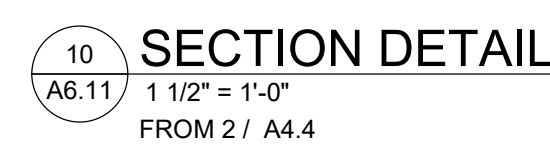
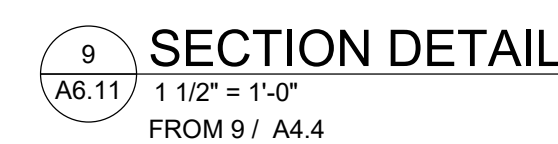
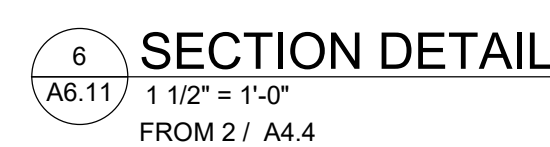
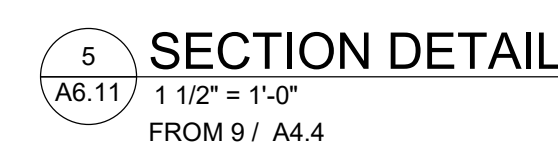
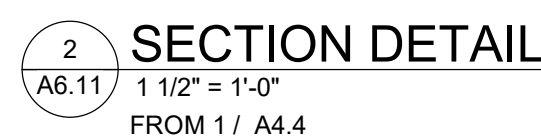
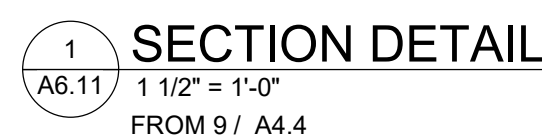
MARYLAND PSC NO. 10.058.21  
FREDERICK COUNTY PUBLIC SCHOOLS

|                |                   |     |          |
|----------------|-------------------|-----|----------|
| Job No.        | #18045            | EMG | Drawn    |
| Scale          | 1/8" = 1'-0"      | JTH | Checked  |
| Date           | 03/16/2020        | PLH | Approved |
| Drawing Title  | BUILDING SECTIONS |     |          |
| Drawing Number | A4.2              |     |          |

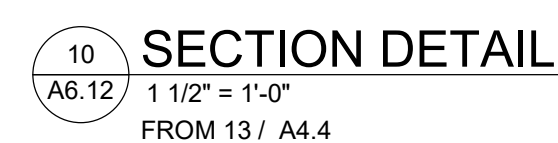
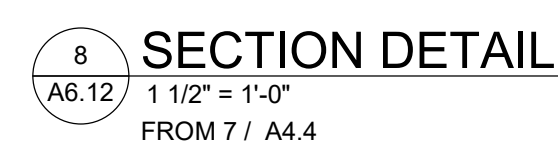
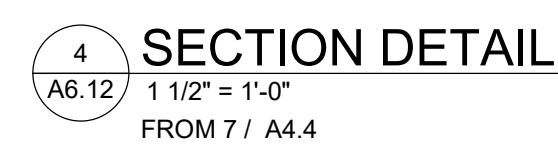
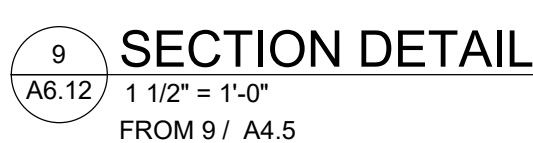
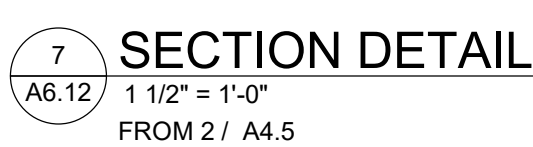
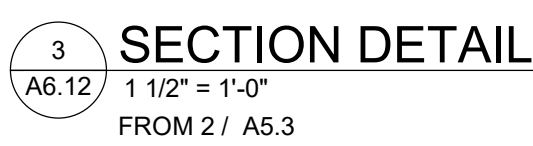
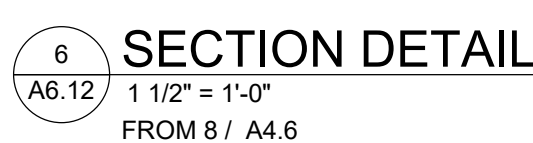
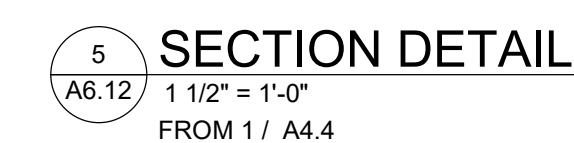
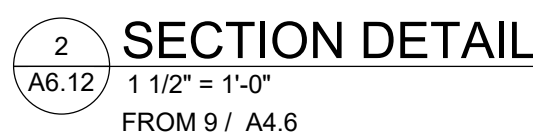
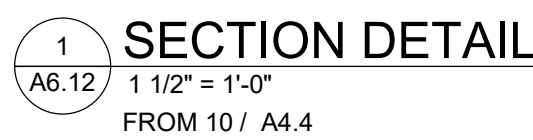
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| Sheet | Of |
|-------|----|



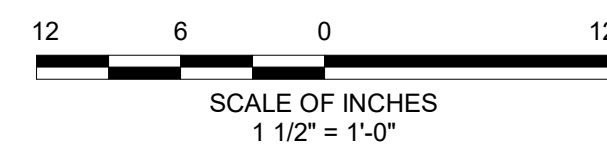
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|                 |       |
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| SECTION DETAILS | A6.11 |
| Sheet           | Of    |



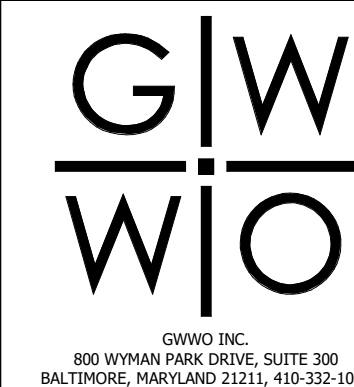
| ONLY. REFER TO SHEET CS-3 FOR COMPLETE LIST |  |
|---|--|
| 033000-E                                    | CONCRETE FOOTING (REFER TO STRUCTURAL FOR MORE INFORMATION)          |
| 033000-D                                    | UNDER SLAB VAPOR BARRIER   |
| 042000-A                                    | CONCRETE MASONRY UNIT, SIZE AS INDICATED                             |
| 042000-C1                                   | DECORATIVE CMU, 1, SIZE AS INDICATED                                 |
| 042000-J                                    | WEEP VENT  |
| 042000-K                                    | FLEXIBLE MANT FLASHING   |
| 042000-L                                    | CEMENTITIOUS GROUT   |
| 042000-M                                    | CAVITY MORTAR CONTROL  |
| 042000-R                                    | TERMINATION BAR WITH CONT BEAD OF SEALANT                            |
| 051200-A                                    | STRUCTURAL STEEL, REFER TO STRUCTURAL FOR MORE INFORMATION           |
| 054000-A                                    | COLD-FORMED STEEL FRAMING, SIZE AS INDICATED                         |
| 054000-B                                    | TRACK  |
| 061000-D                                    | BLOCKING   |
| 061000-E                                    | PLYWOOD SHEATHING, FIRE-RETARDANT TREATED, 1/2" UNIFORM              |
| 071400-B1                                   | JOINT COVER SHEET  |
| 071400-D                                    | MINERAL WOOL INSULATION  |
| 072500-A                                    | NON-CORROSIBLE AIR & WEATHER RESISTIVE BARRIER, SHEET-APPLIED        |
| 075400-A                                    | THERMOPLASTIC (TPO) MEMBRANE   |
| 075400-C                                    | COVER BOARD  |
| 075400-E                                    | VAPOR RETARDER   |
| 075400-G                                    | CANT STRIP   |
| 079200-A                                    | JOINT SEALANT AND BACKER ROD   |
| 079200-B                                    | JOINT SEALANT  |
| 084313-A                                    | BRAKE METAL, FINISH TO MATCH STOREFRONT                              |
| 084313-B                                    | GLAZED ALUMINUM CURTAIN WALL   |
| 084313-F                                    | CURTAIN WALL ANCHOR BRACKET  |
| 084313-H                                    | 125 THICK ALUMINUM BENT PLATE, FINISH TO MATCH CURTAIN WALLS         |
| 088000-A                                    | GLAZING, REFER TO AS SERIES FOR GL TYPE                              |
| 123600-D                                    | SOLID SURFACING SLIP   |
| 321313-A                                    | CONCRETE CURB/GUTTERWALK (REFER TO CIVIL FOR MORE INFORMATION)       |
| 321313-B                                    | CONCRETE MOW STRIP (REFER TO AS SERIES & CIVIL FOR MORE INFORMATION) |
| 321313-D                                    | SOLID JOINT (REFER TO CIVIL FOR MORE INFORMATION)                    |



ISSUED FOR BID

Seal:

Seal:



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Revisions:

| No. | Date       | Description |
|-----|------------|-------------|
| 5   | 04/15/2020 | Addendum #5 |
| 6   | 04/22/2020 | Addendum #6 |

WAVERLEY ELEMENTARY  
SCHOOL REPLACEMENT

MARYLAND PSC NO. 10-058-21

|          |        |     |       |
|----------|--------|-----|-------|
| Jah. No. | #18045 | EMC | Dagum |
|----------|--------|-----|-------|

|         |            |     |       |
|---------|------------|-----|-------|
| Job No. | #18045     | EMG | Draw  |
| Scale   | 1" = 1'-0" | ITM | Check |

|       |                |     |         |
|-------|----------------|-----|---------|
| Scale | 1 1/2" = 1'-0" | JTH | Check   |
| Date  | 03/16/2020     | DLH | Approve |

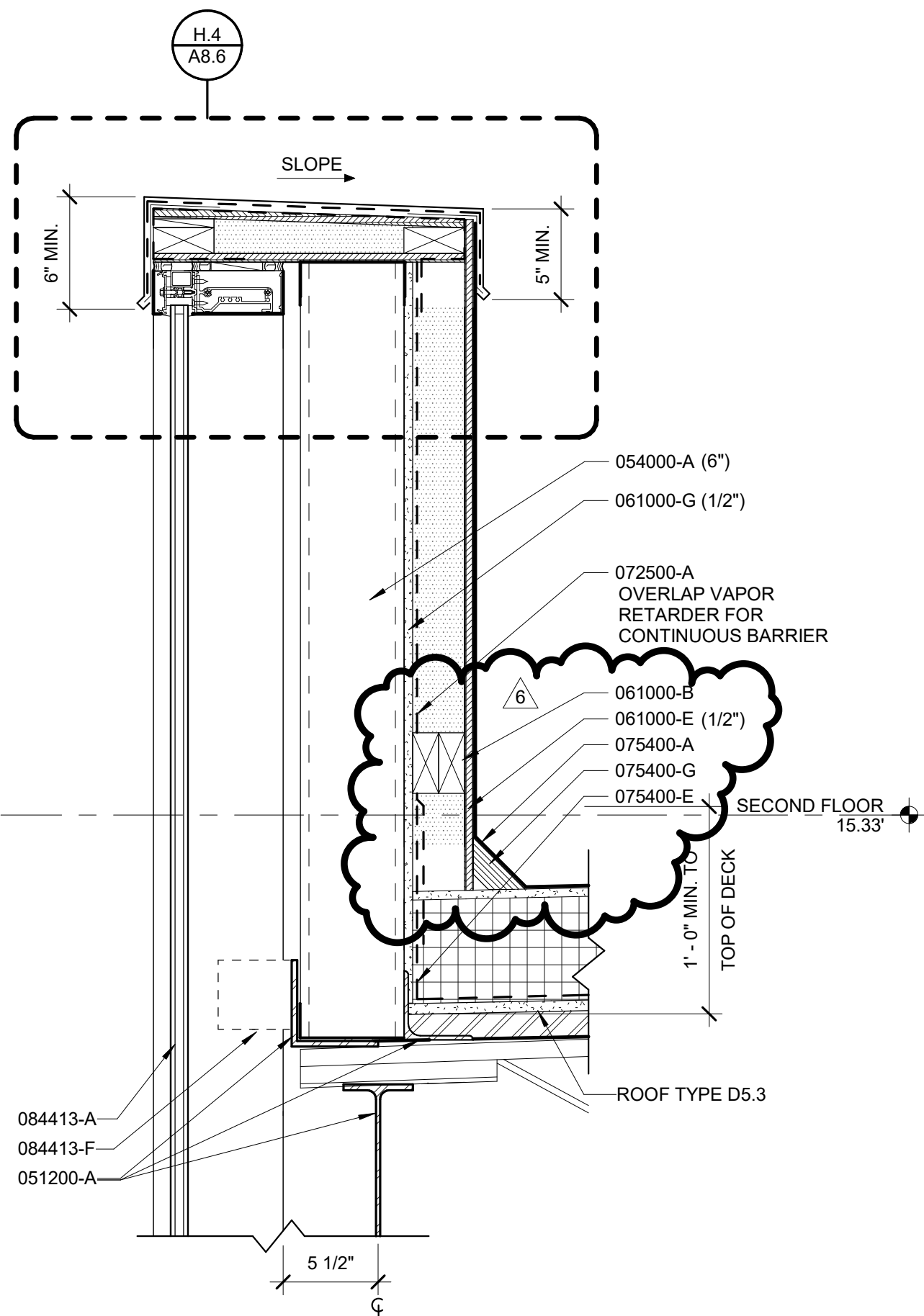
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| Date          | 03/10/2020     | FLH | Approved |
| Drawing Title | Drawing Number |     |          |

## SECTION DETAILS

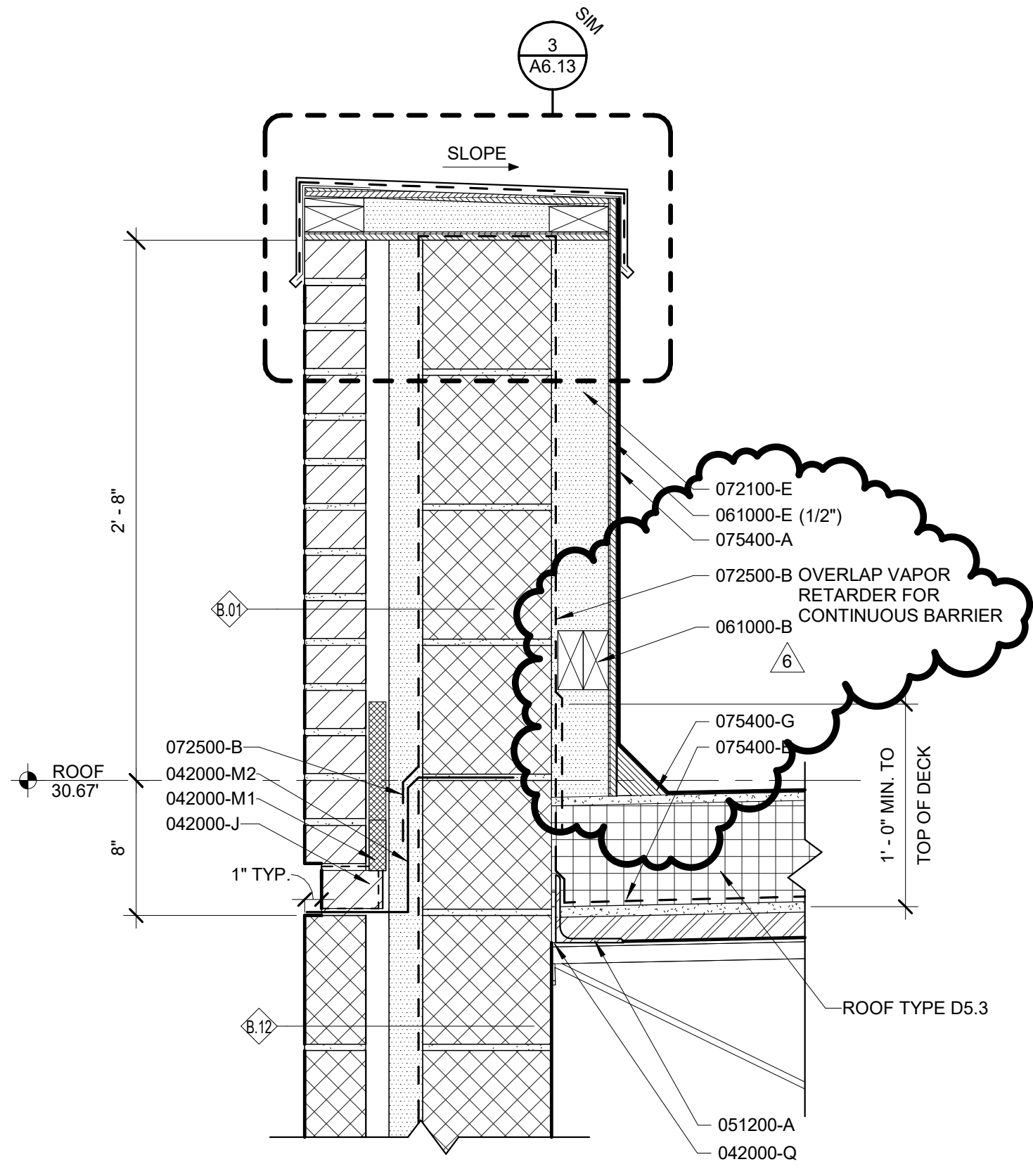
A6.12

Sheet

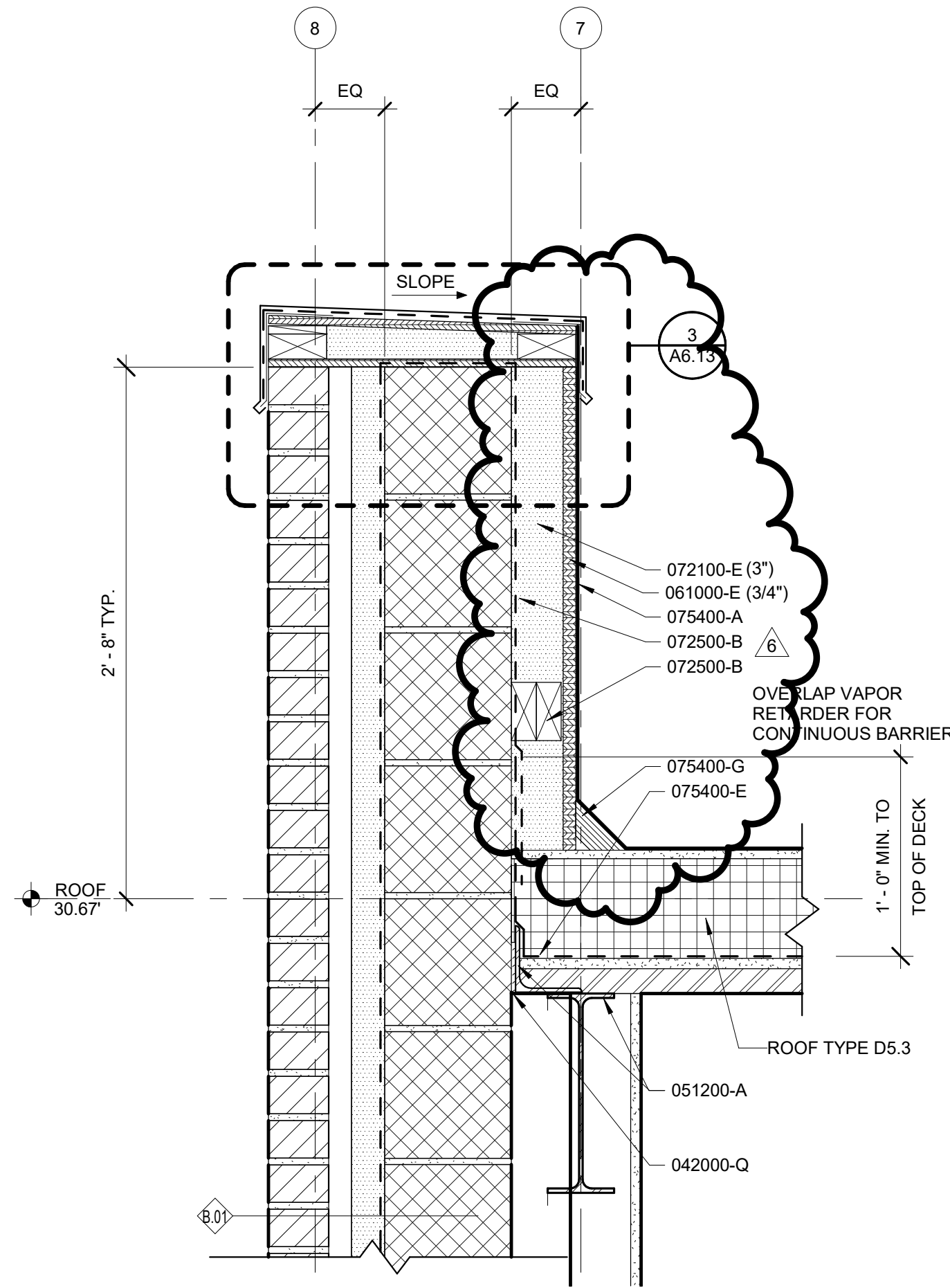
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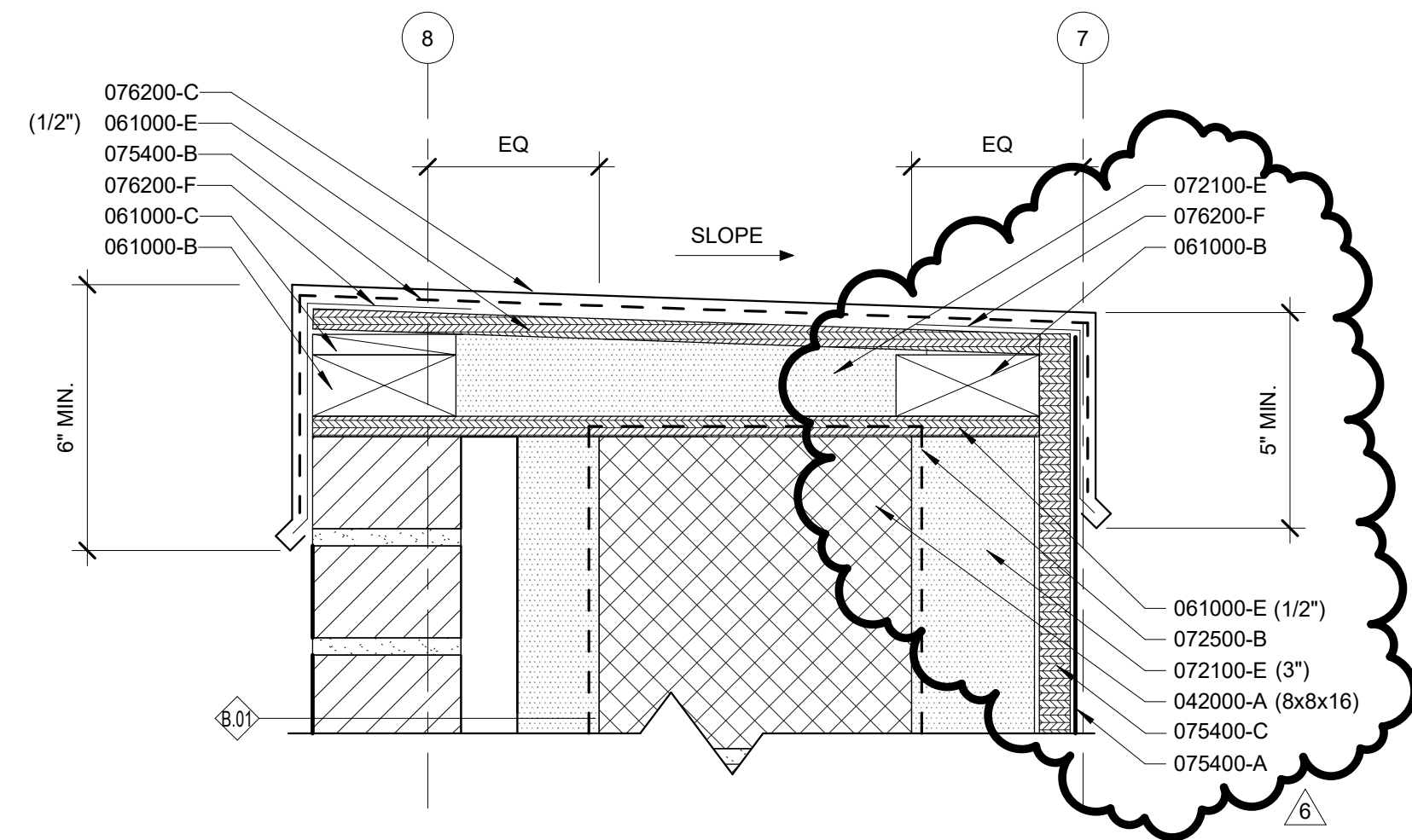
1 SECTION DETAIL  
A6.13 1 1/2" = 1'-0"  
FROM 14 / A4.7



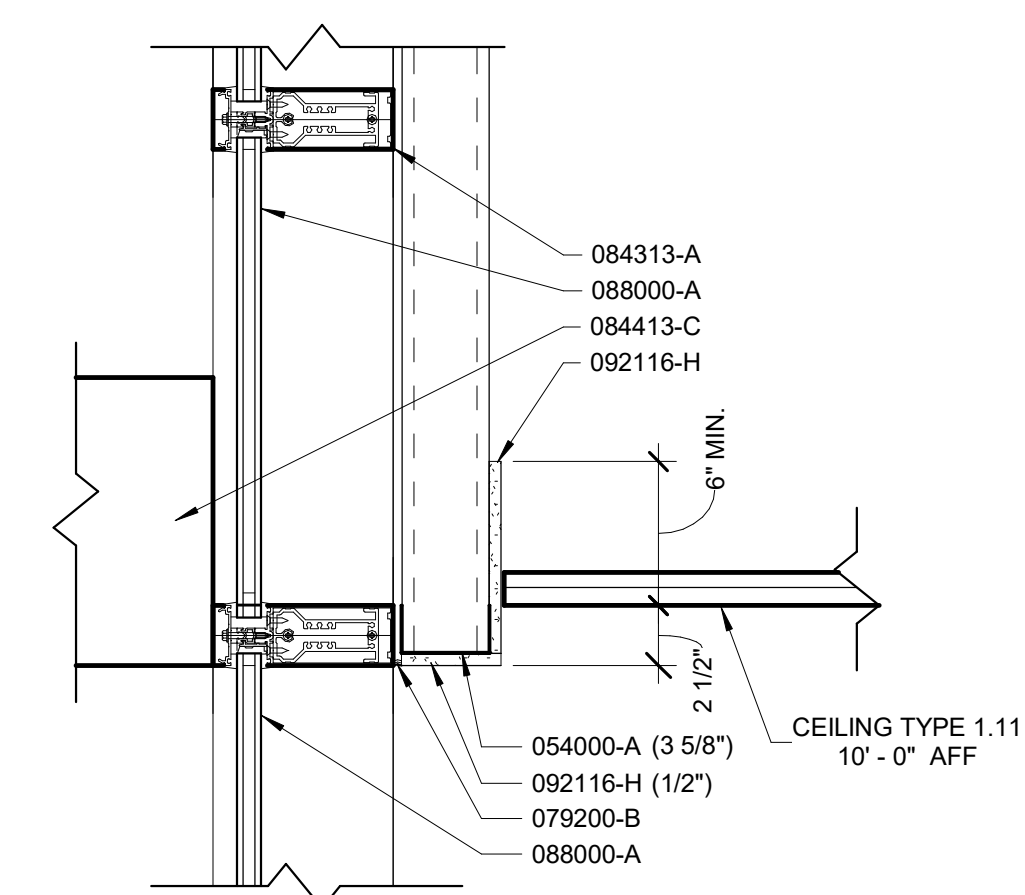
2 SECTION DETAIL  
A6.13 1 1/2" = 1'-0"  
FROM 12 / A4.4



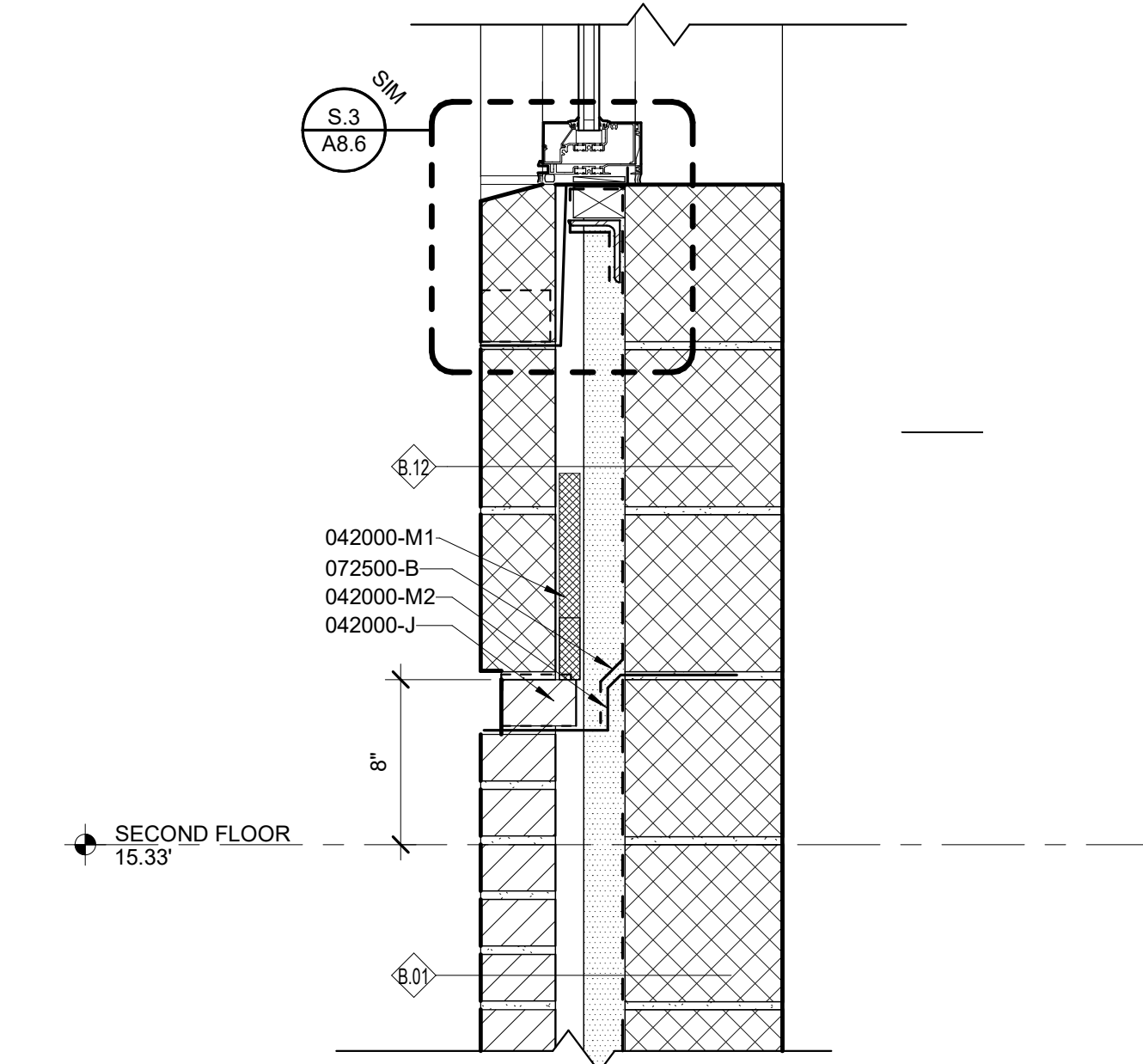
6 SECTION DETAIL  
A6.13 1 1/2" = 1'-0"  
FROM 14 / A4.4



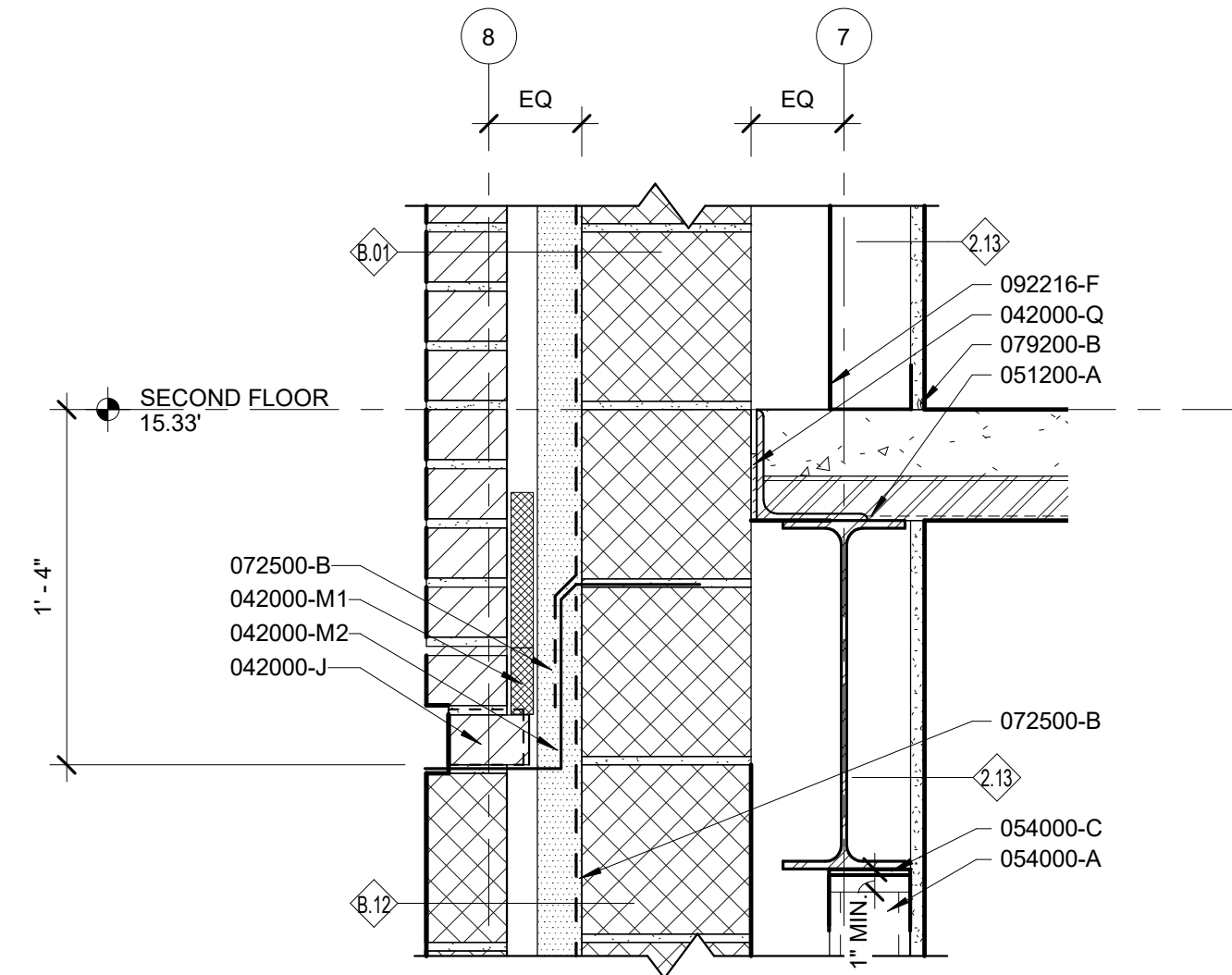
3 PARAPET SECTION DETAIL 03  
A6.13 3" = 1'-0"  
FROM 2 / A6.13



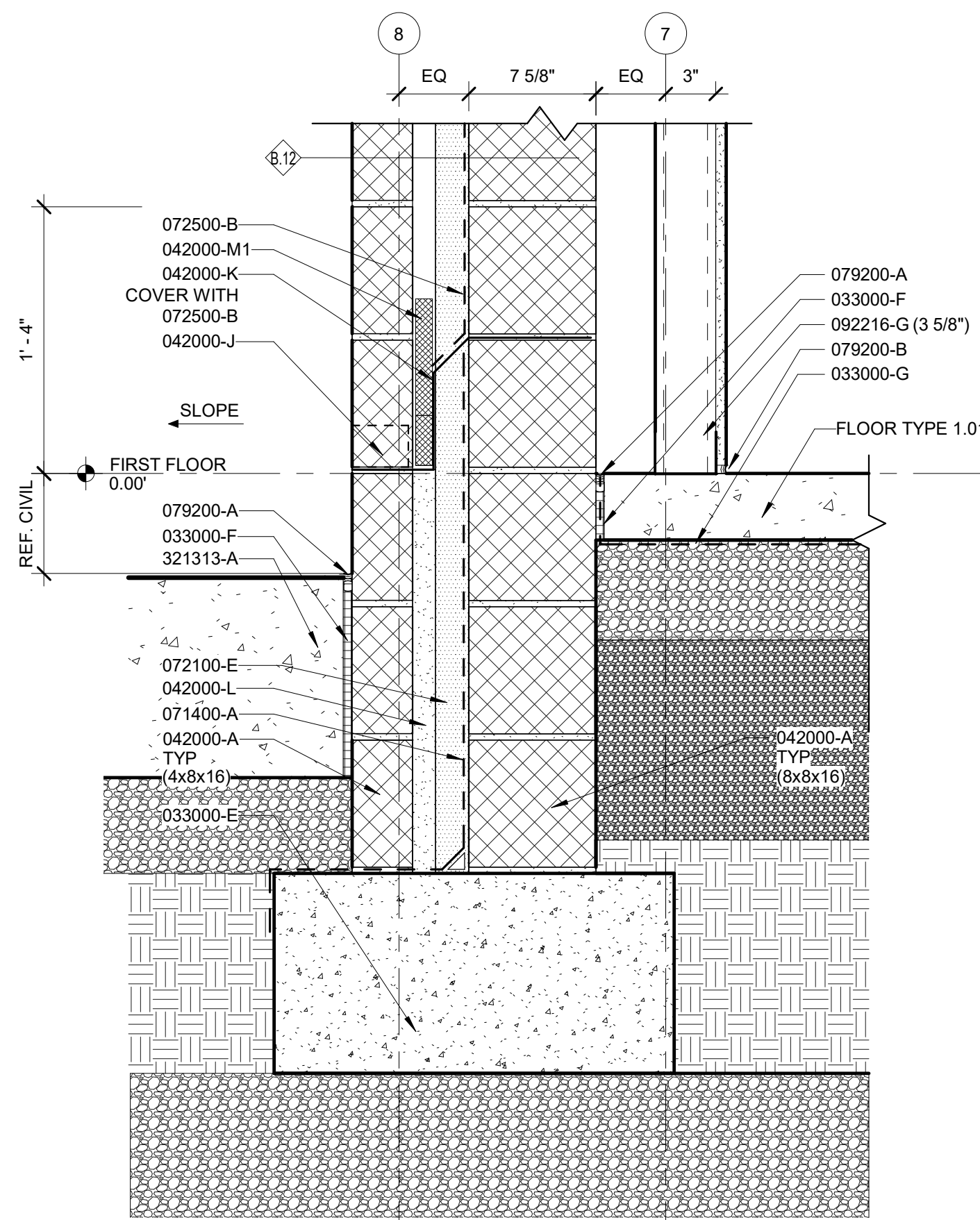
4 SECTION DETAIL  
A6.13 1 1/2" = 1'-0"  
FROM 15 / A4.7



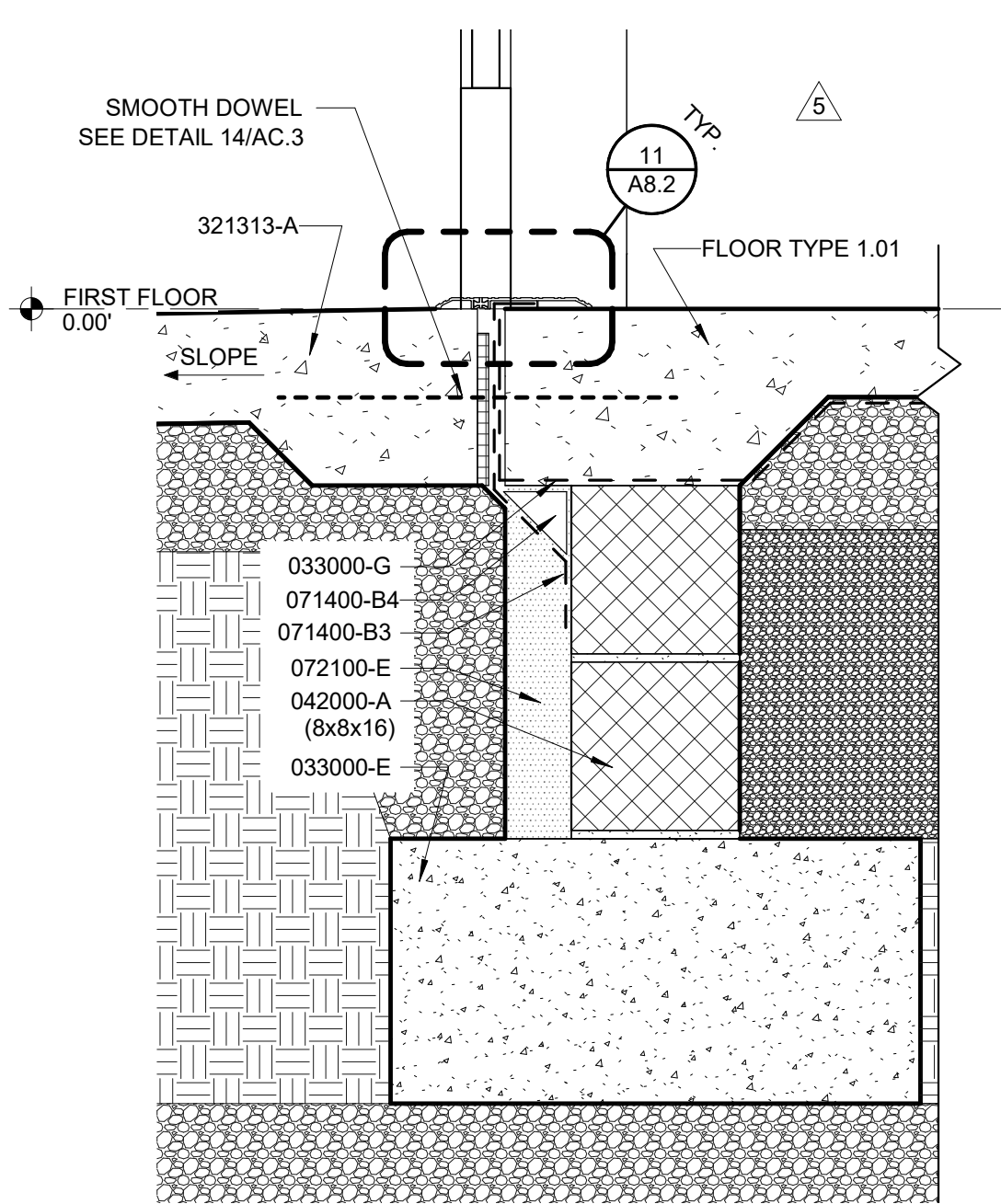
5 SECTION DETAIL  
A6.13 1 1/2" = 1'-0"  
FROM 12 / A4.4



9 SECTION DETAIL  
A6.13 1 1/2" = 1'-0"



10 SECTION DETAIL  
A6.13 1 1/2" = 1'-0"  
FROM 15 / A4.4



8 SECTION DETAIL  
A6.13 1 1/2" = 1'-0"  
FROM 7 / A4.4

KEY PLAN:

KEYNOTES LISTED ON THIS SHEET ARE FOR CONVENIENCE ONLY. REFER TO SHEET CS.3 FOR COMPLETE LIST

- 033000-E CONCRETE FOOTING (REFER TO STRUCTURAL FOR MORE INFORMATION)
- 033000-F STRUCTURAL JOINT MATERIAL, 1/2" UNO
- 033000-G UNDER SLAB VAPOR BARRIER
- 042000-A CONCRETE MASONRY UNIT, SIZE AS INDICATED
- 042000-J WEESPENT
- 042000-K FLEXIBLE METAL FLASHING
- 042000-L CEMENTITIOUS GROUT
- 042000-M1 CAVITY MORTAR CONTROL
- 042000-M2 BOND BREAKER STRIP
- 042000-Q COMPRESSIBLE FILLER
- 051200-A STRUCTURAL STEEL (REFER TO STRUCTURAL FOR MORE INFORMATION)
- 054000-A COLD-FORMED STEEL FRAMING, SIZE AS INDICATED
- 054000-C DEFLECTION TRACK
- 061000-B BLOCKING
- 061000-C SHIM
- 061000-E EXTERIOR PLYWOOD SHEATHING, FIRE-RETARDANT TREATED, 1/2" UNO
- 061000-G EXTERIOR GYPSUM SHEATHING, 1/2" UNO
- 071400-A FLUID-APPLIED WATERPROOFING
- 071400-B3 JOINT COVER SHEET
- 071400-B4 CANT STRIP
- 072100-E MINERAL WOOL INSULATION
- 072500-A NON-COMBUSTIBLE AIR & WEATHER RESISTIVE BARRIER, SHEET-APPLIED
- 072500-B NON-COMBUSTIBLE AIR & WEATHER RESISTIVE BARRIER, FLUID-APPLIED
- 075400-A THERMOPLASTIC (TPO) MEMBRANE
- 075400-B FLEXIBLE FLASHING
- 075400-C COVER BOARD
- 075400-E VAPOR RETARDER
- 075400-G CANT STRIP
- 076200-C METAL COPING
- 076200-F CONTINUOUS LOCKING METAL CLEAT
- 079200-A JOINT SEALANT AND BACKER ROD
- 079200-B JOINT SEALANT
- 084313-A GLAZED ALUMINUM-FRAMED STOREFRONT
- 084413-A GLAZED ALUMINUM CURTAIN WALL
- 084413-C SUNSHADE/CANOPY
- 084413-F CURTAIN WALL ANCHOR BRACKET
- 088000-A GLAZING, REFER TO A8 SERIES FOR GL TYPE
- 092116-H GYPSUM CEILING BOARD, 1/2" THICKNESS
- 092216-F NON-STRUCTURAL METAL STUD TRACK
- 092216-G DEFLECTION TRACK
- 321313-A CONCRETE SIDEWALK (REFER TO CIVIL FOR MORE INFORMATION)

12 6 0 12  
SCALE OF INCHES  
1 1/2" = 1'-0"

ISSUED FOR BID

GWIO INC.  
802 WYMAN PARK DRIVE, SUITE 300  
BALTIMORE, MARYLAND 21211, 410-355-1909

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I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.  
LICENSE NUMBER: 10810, EXPIRATION DATE: 11/04/2020

|            |            |             |
|------------|------------|-------------|
| Revisions: |            |             |
| No.        | Date       | Description |
| 5          | 04/15/2020 | Addendum #5 |
| 6          | 04/22/2020 | Addendum #6 |

WAVERLEY ELEMENTARY  
SCHOOL REPLACEMENT

MARYLAND PSC NO. 10.058.21  
FREDERICK COUNTY PUBLIC SCHOOLS

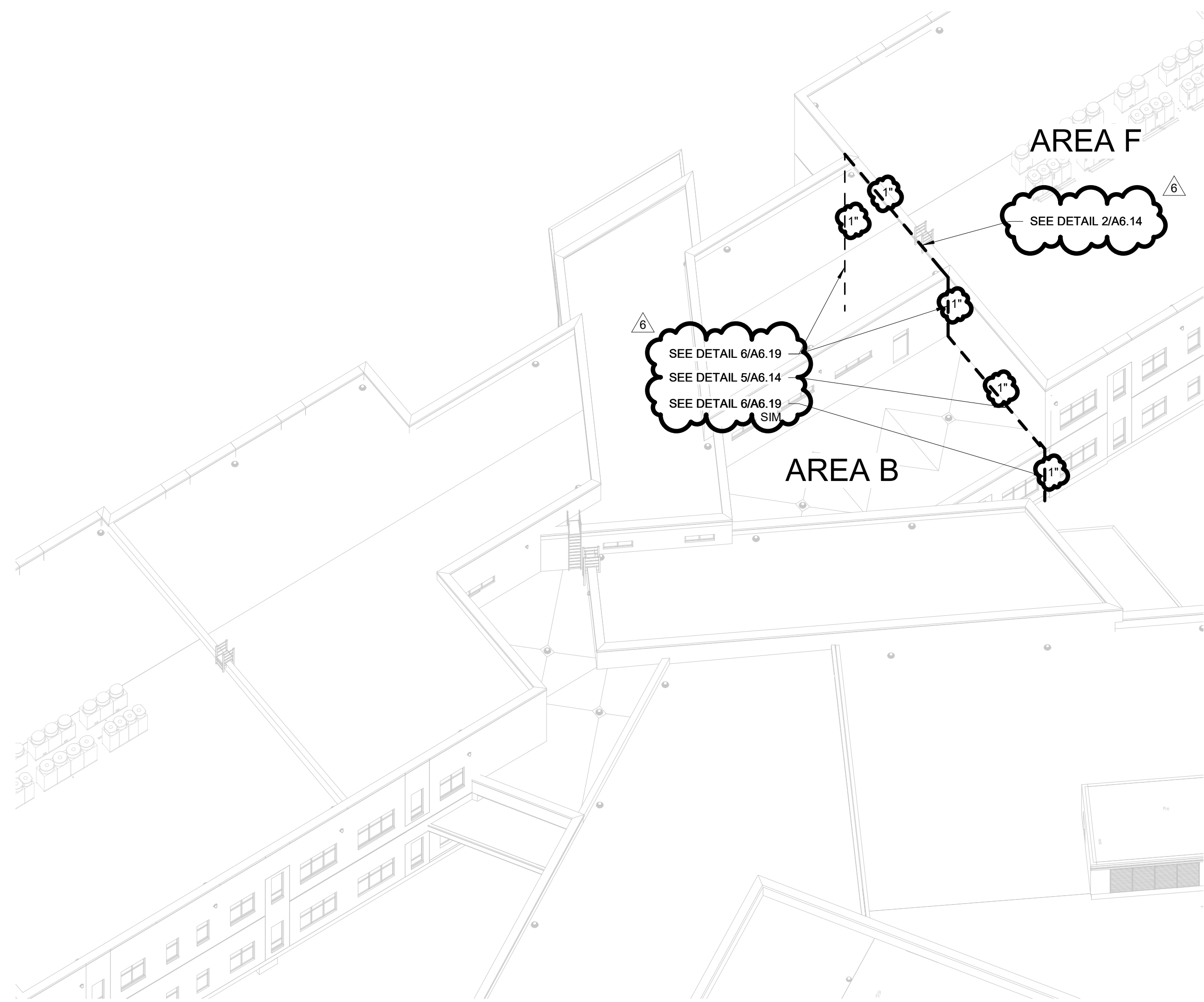
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| Job No.       | #18045          | Author   | Drawn    |
| Scale         | As indicated    | Checker  | Checked  |
| Date          | 03/16/2020      | Approver | Approved |
| Drawing Title | SECTION DETAILS |          |          |

A6.13

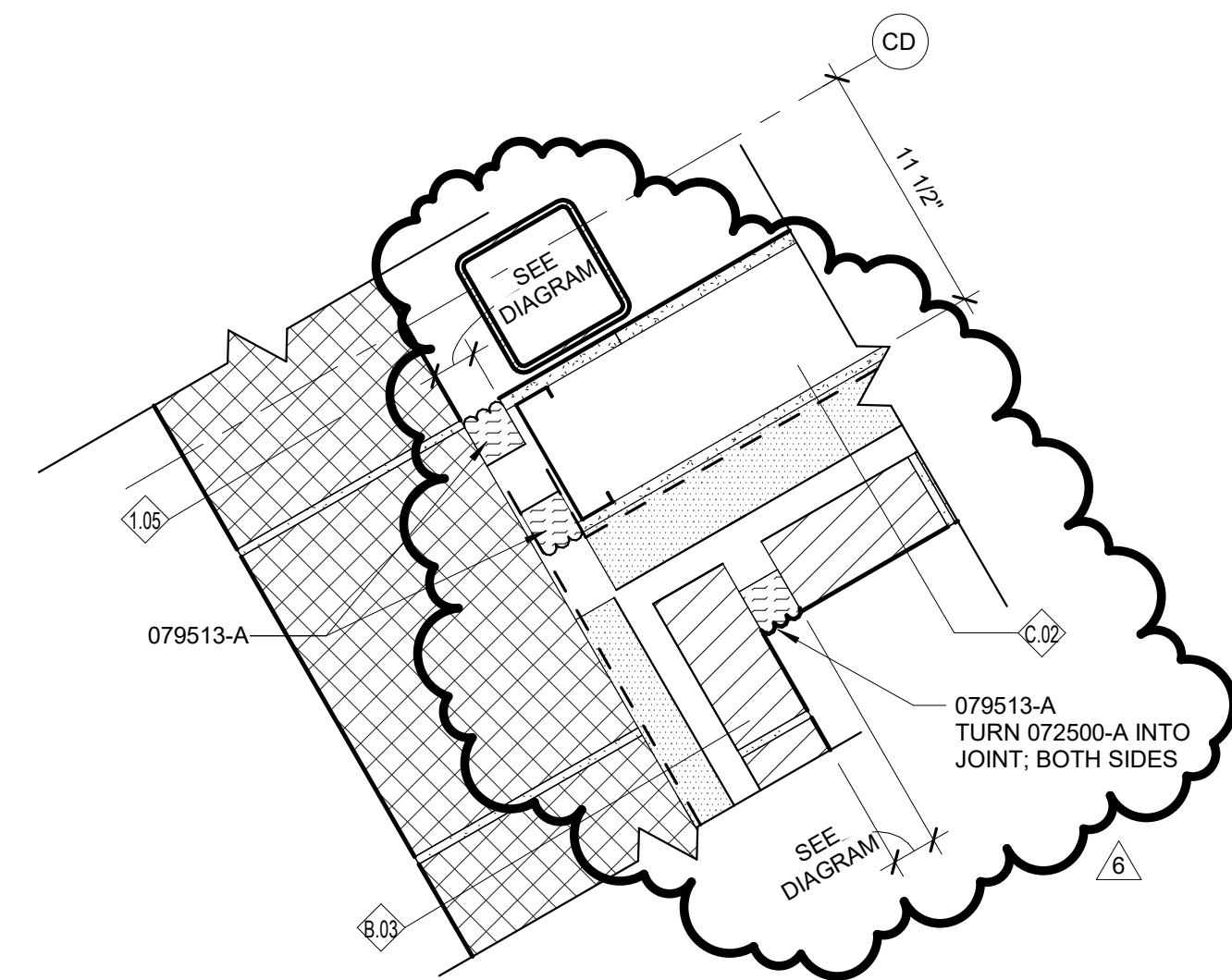
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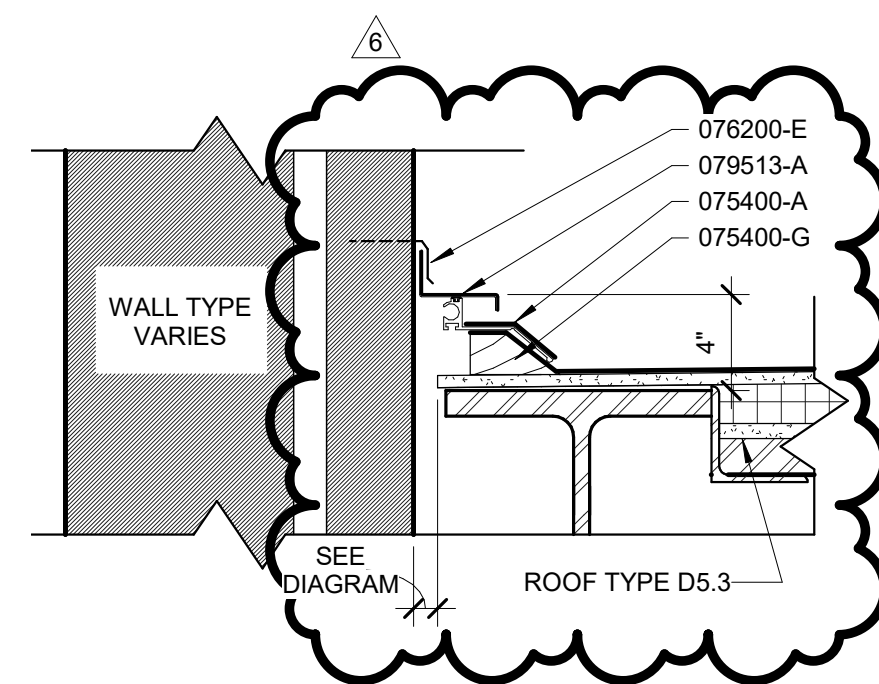
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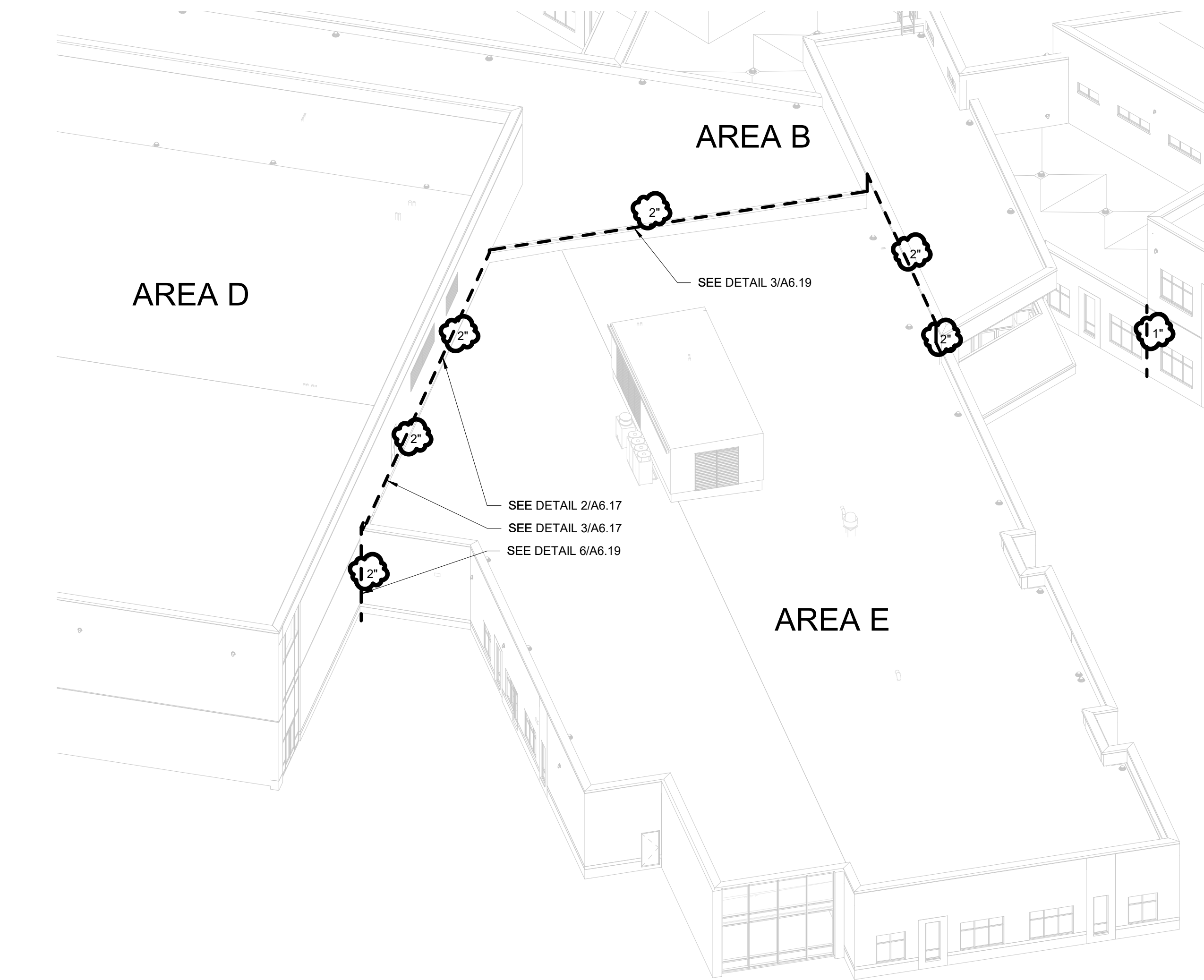
7 EXPANSION JOINT AREAS B/F



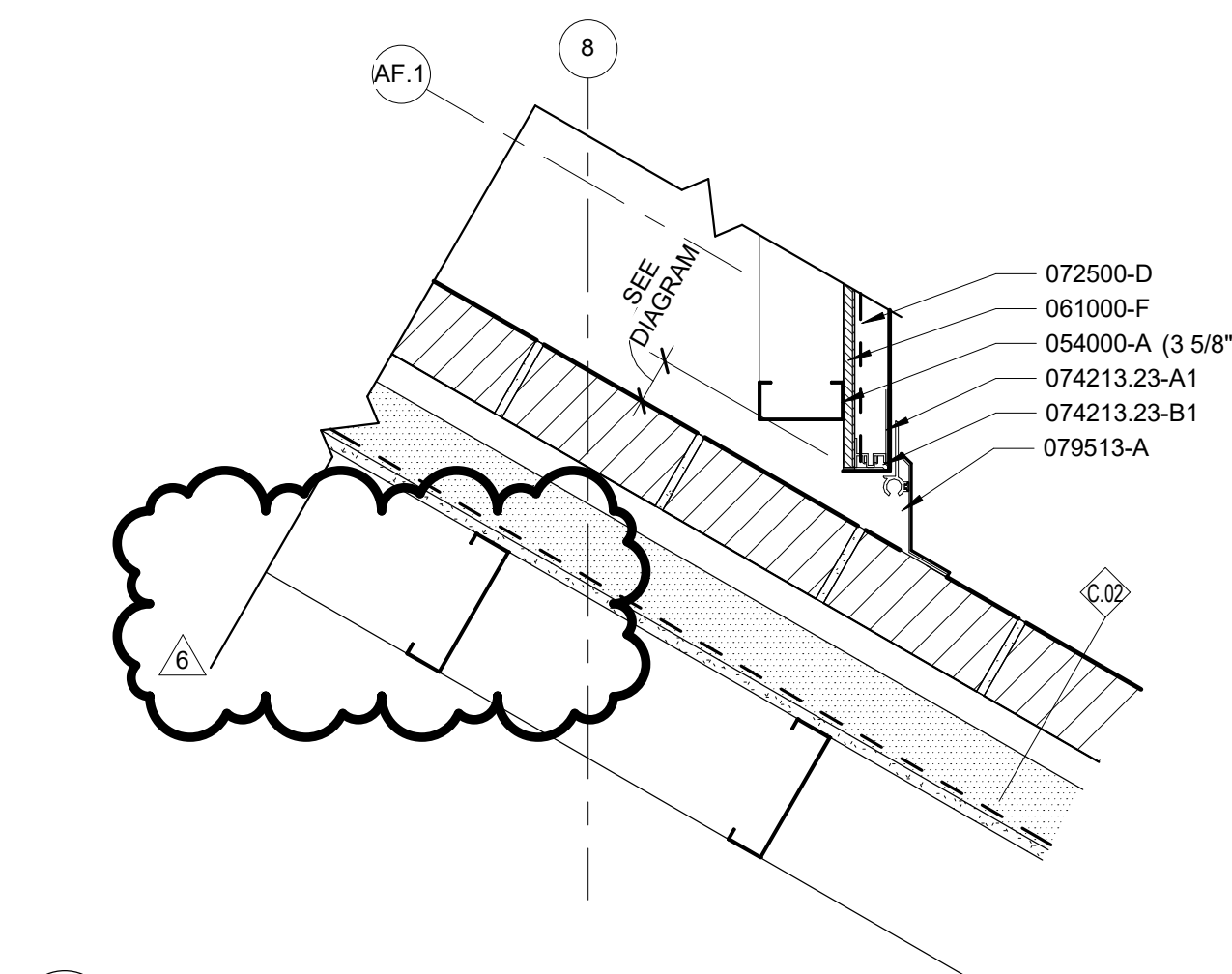
6 PLAN DETAIL



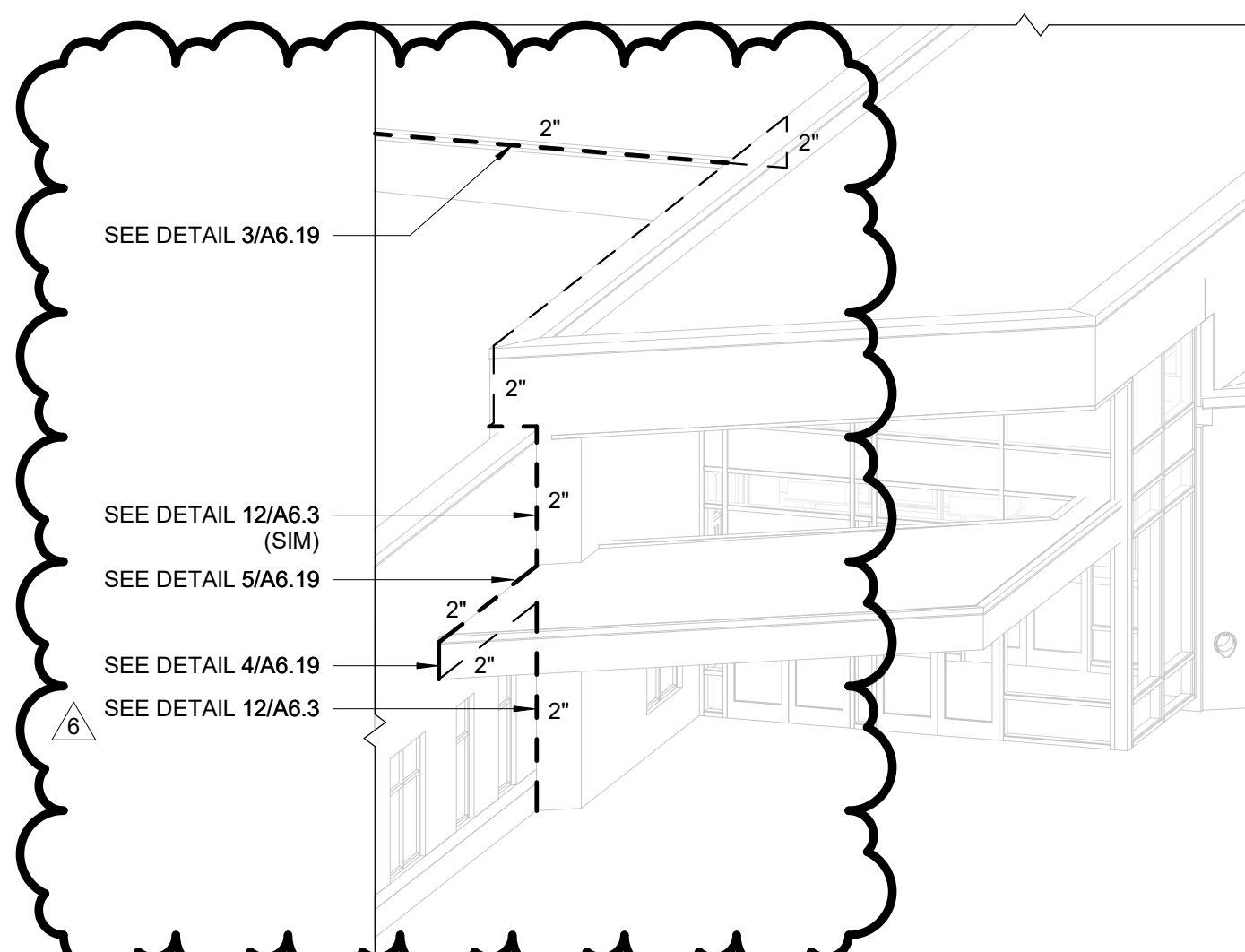
5 SECTION DETAIL



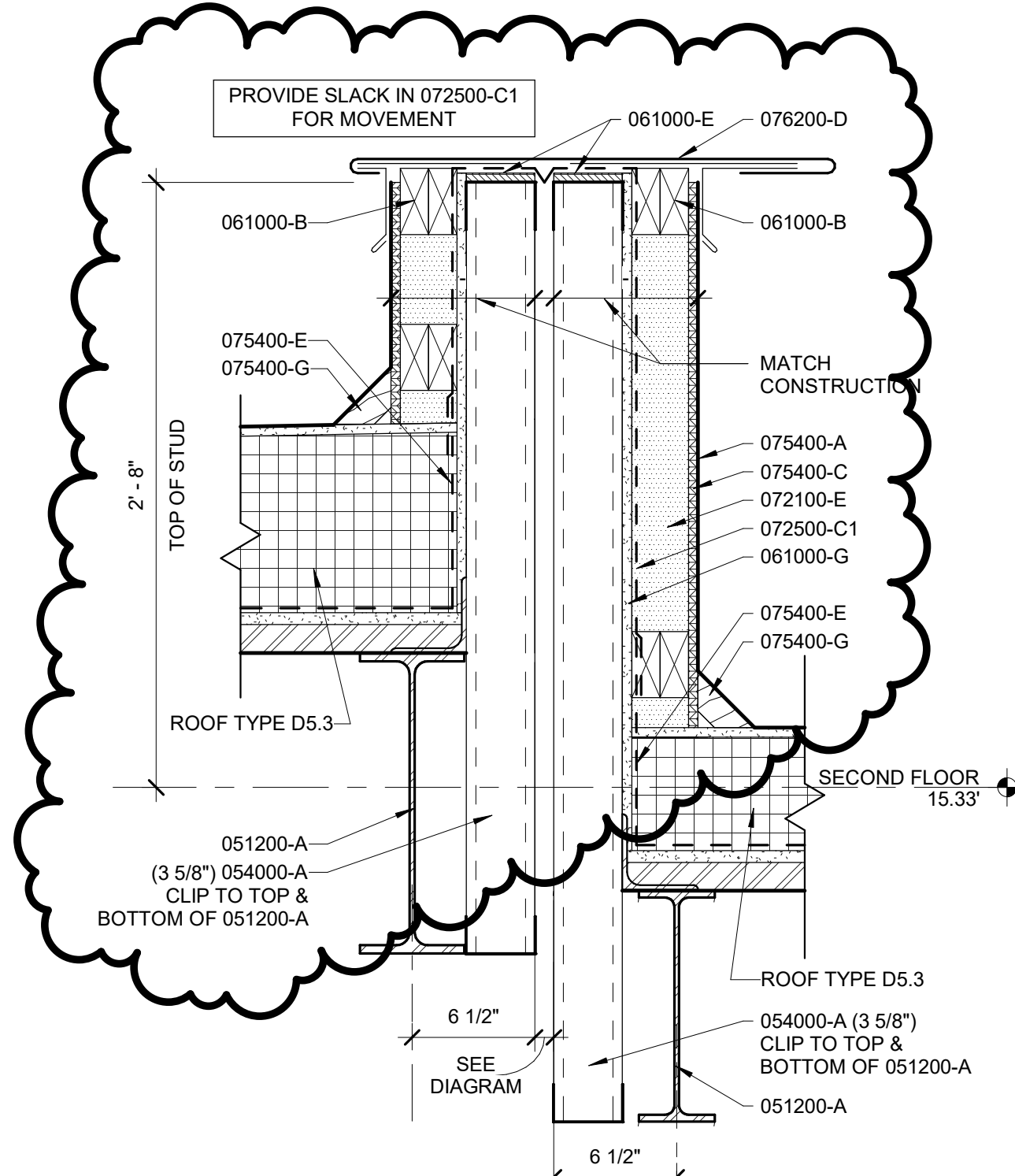
1 EXPANSION JOINT DIAGRAM - AREAS D & E



4 PLAN DETAIL



9 E.J. DIAGRAM - AREA E - MAIN ENTRY

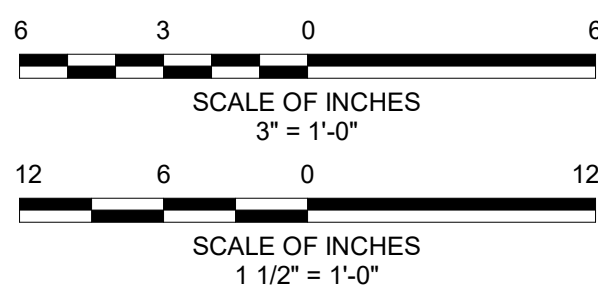


3 SECTION DETAIL

KEY PLAN:

KEYNOTES LISTED ON THIS SHEET ARE FOR CONVENIENCE ONLY. REFER TO SHEET CS.3 FOR COMPLETE LIST

|              |  |
|--------------|--|
| 051200-A     | STRUCTURAL STEEL (REFER TO STRUCTURAL FOR MORE INFORMATION)  |
| 054000-A     | COLD-FORMED STEEL FRAMING, SIZE AS INDICATED                 |
| 061000-B     | BLOCKING   |
| 061000-E     | EXTERIOR PLYWOOD SHEATHING, FIRE-RETARDANT TREATED, 1/2" UNO |
| 061000-F     | PLYWOOD SHEATHING, FIRE-RETARDANT TREATED, 1/2" UNO          |
| 061000-G     | EXTERIOR GYPSUM SHEATHING, 1/2" UNO                          |
| 072100-E     | MINERAL WOOL INSULATION                                      |
| 072500-C1    | TRANSITION MEMBRANE  |
| 072500-D     | WEATHER-RESISTIVE BARRIER                                    |
| 074213.23-A1 | METAL COMPOSITE WALL PANEL, SIZE AS INDICATED                |
| 074213.23-B1 | ATTACHMENT CLIP  |
| 075400-A     | THERMOPLASTIC (TPO) MEMBRANE                                 |
| 075400-C     | COVER BOARD  |
| 075400-E     | VAPOR RETARDER   |
| 075400-G     | CANT STRIP   |
| 076200-D     | METAL FLASHING   |
| 076200-E     | 2-PIECE METAL COUNTER FLASHING                               |
| 079513-A     | EXTERIOR EXPANSION JOINT COVER SYSTEM                        |



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| Seal: |  |
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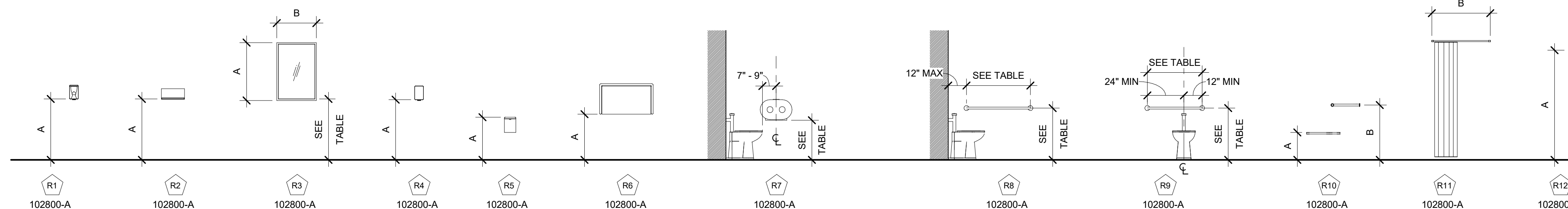
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I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NUMBER: 10810, EXPIRATION DATE: 11/04/2020

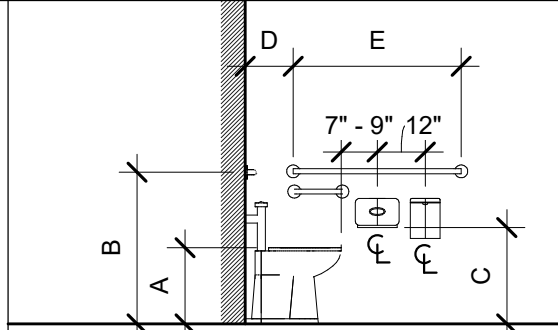
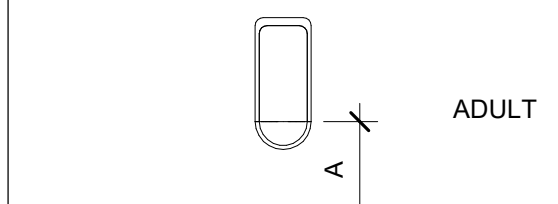
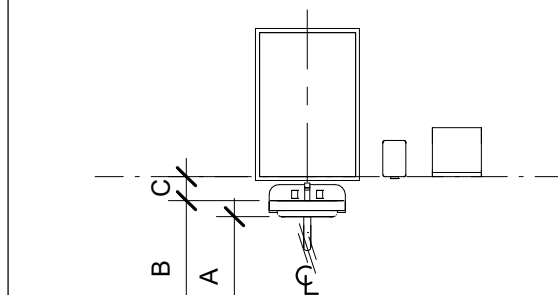
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|-----|------------|-------------|
| 6   | 04/22/2020 | Addendum #6 |

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|  |                                  |     |                |
|--|----------------------------------|-----|----------------|
| WAVERLEY ELEMENTARY SCHOOL REPLACEMENT |                                  |     |                |
| MARYLAND PSC NO. 10.058.21             |                                  |     |                |
| FREDERICK COUNTY PUBLIC SCHOOLS        |                                  |     |                |
| Job No.                                | #18045                           | JND | Drawn          |
| Scale                                  | As indicated                     | JTH | Checked        |
| Date                                   | 03/16/2020                       | PLH | Approved       |
| Drawing Title                          | EXTERIOR EXPANSION JOINT DETAILS |     | Drawing Number |
|  |                                  |     | A6.19          |
| Sheet                                  |                                  |     | Of             |

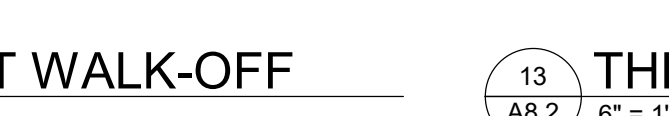
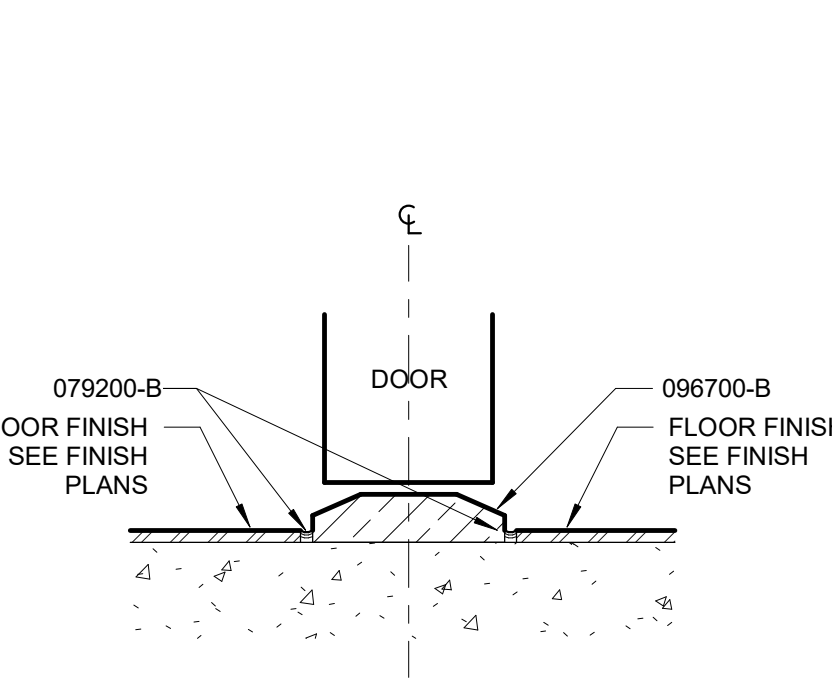
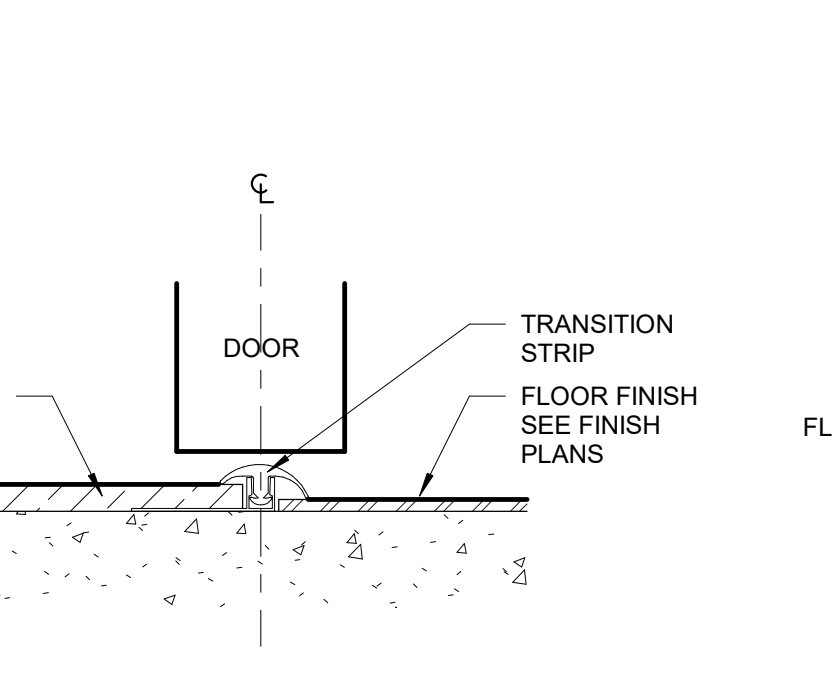
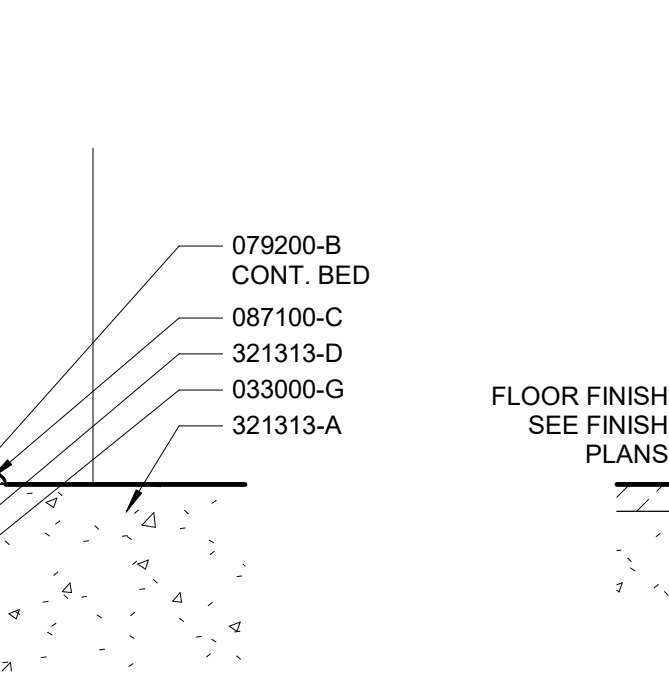
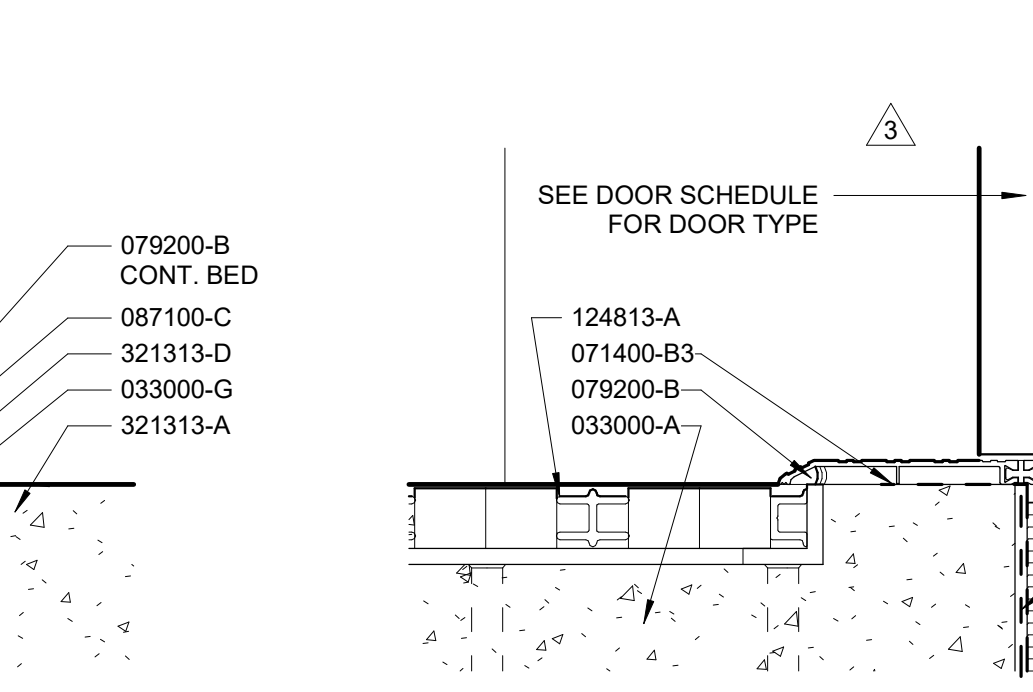
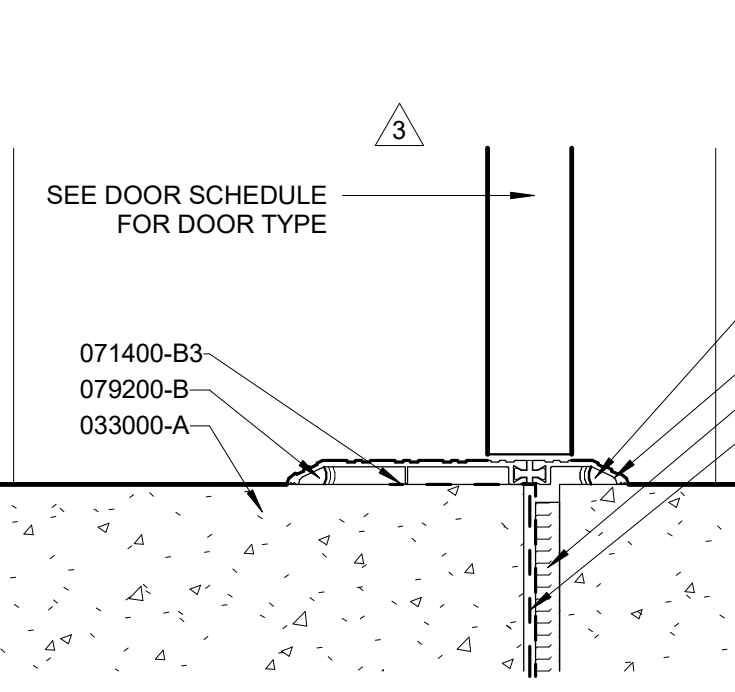
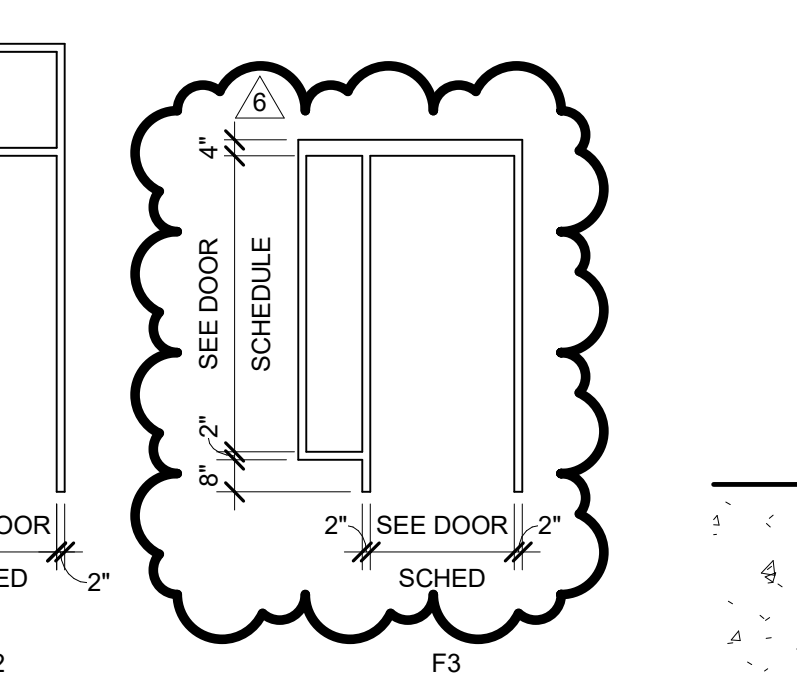
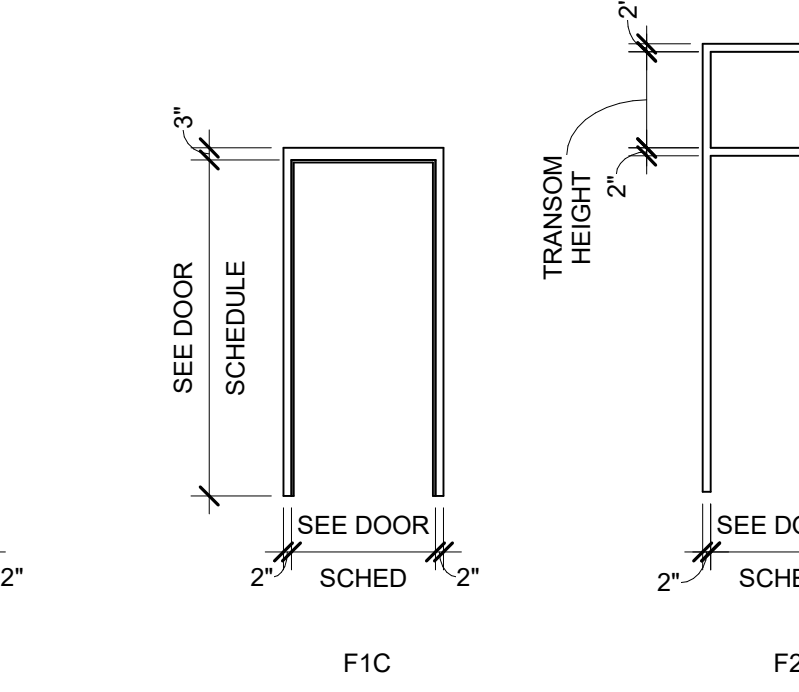
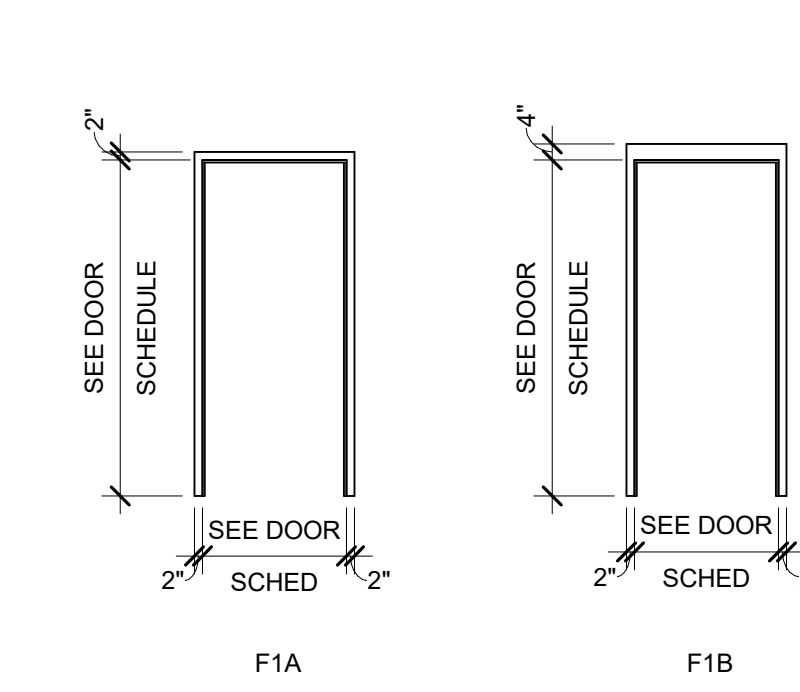
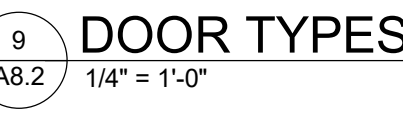
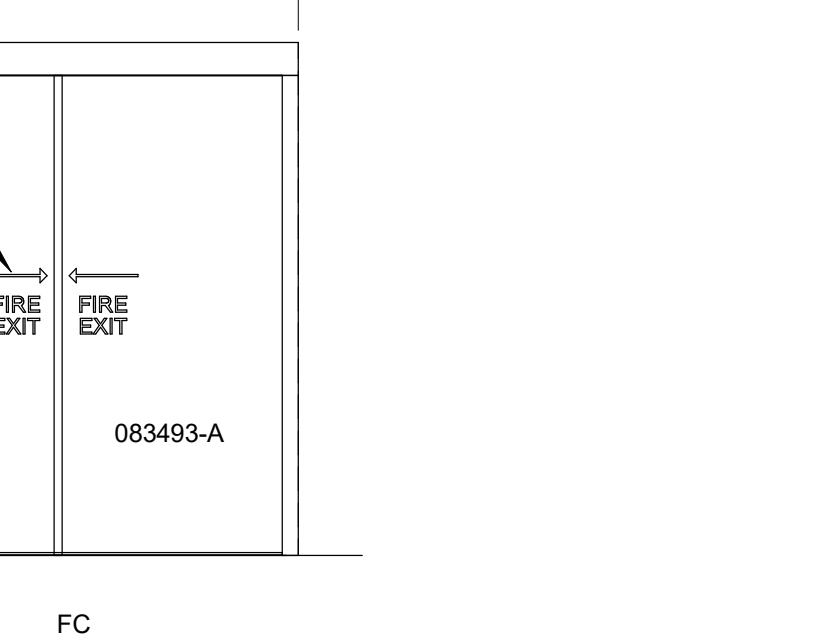
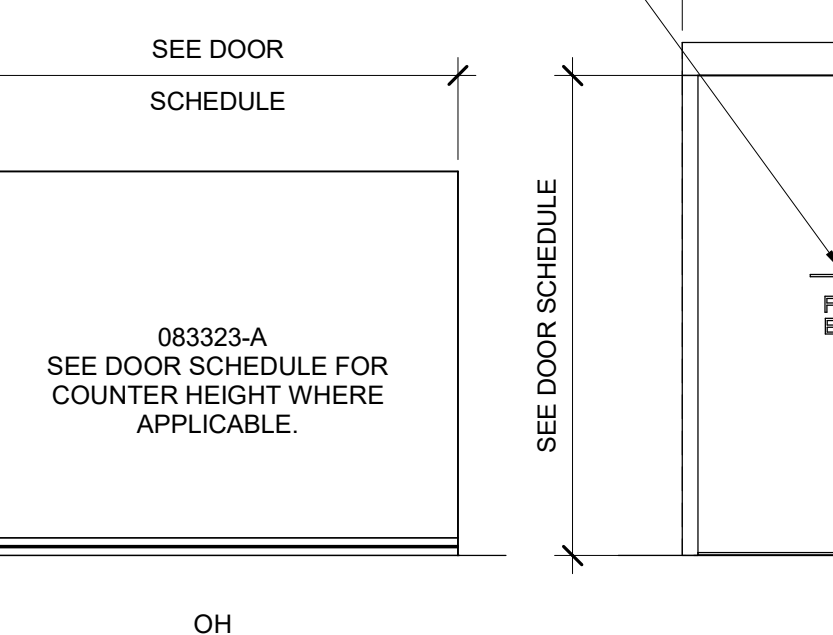
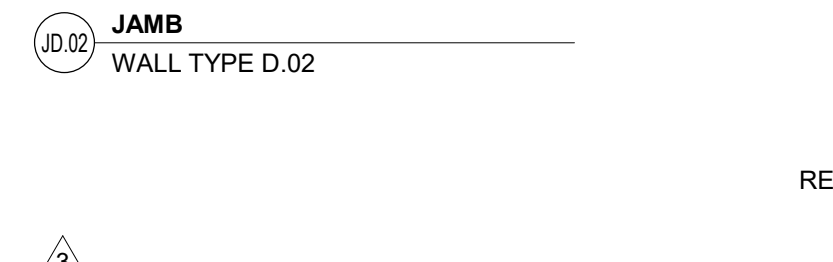
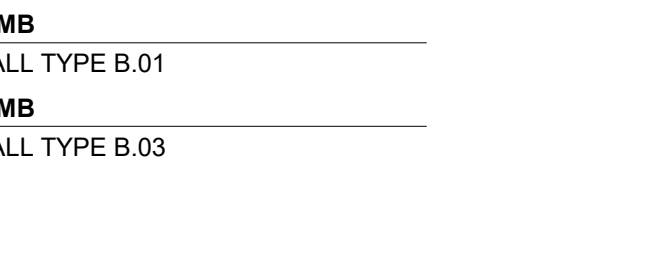
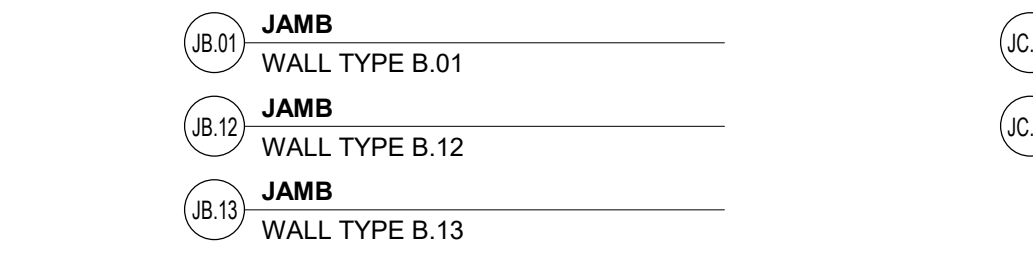
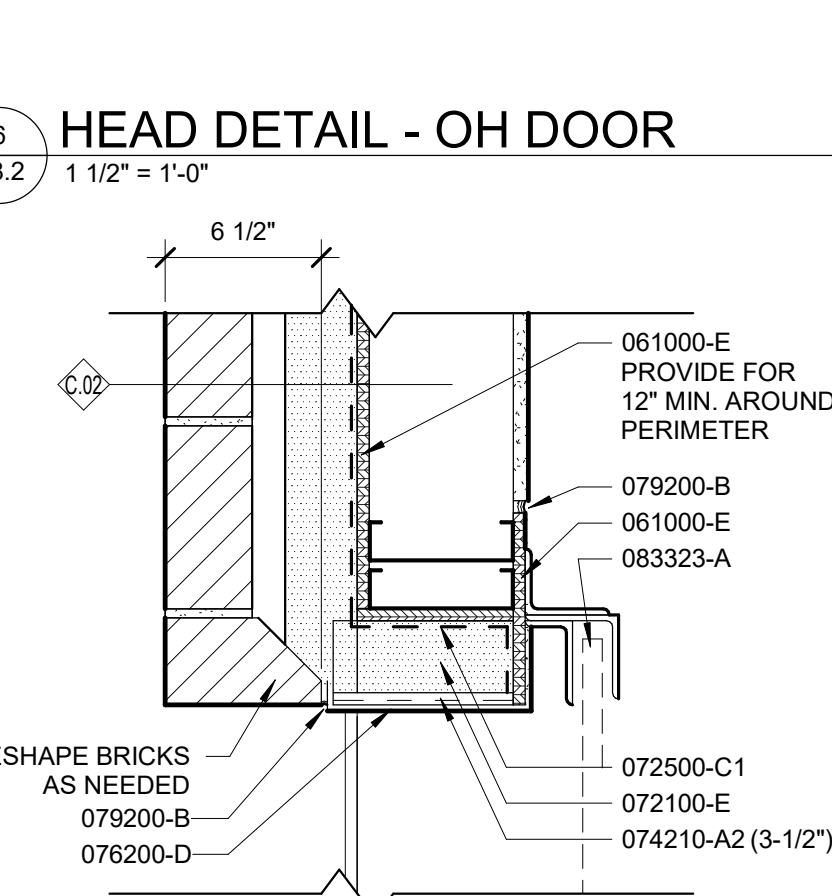
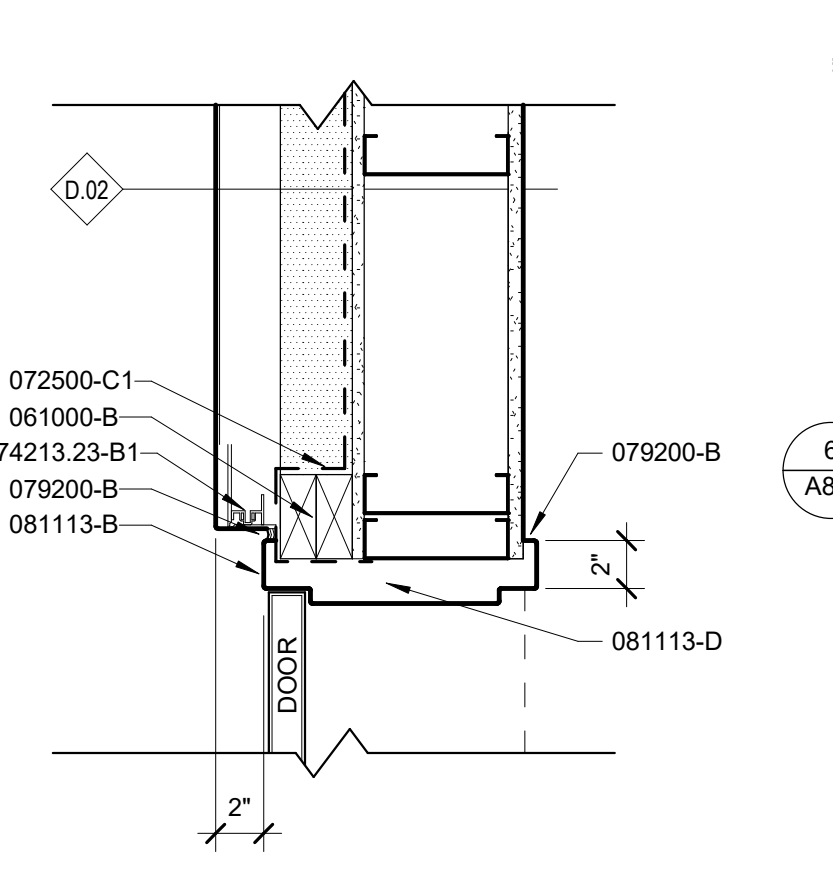
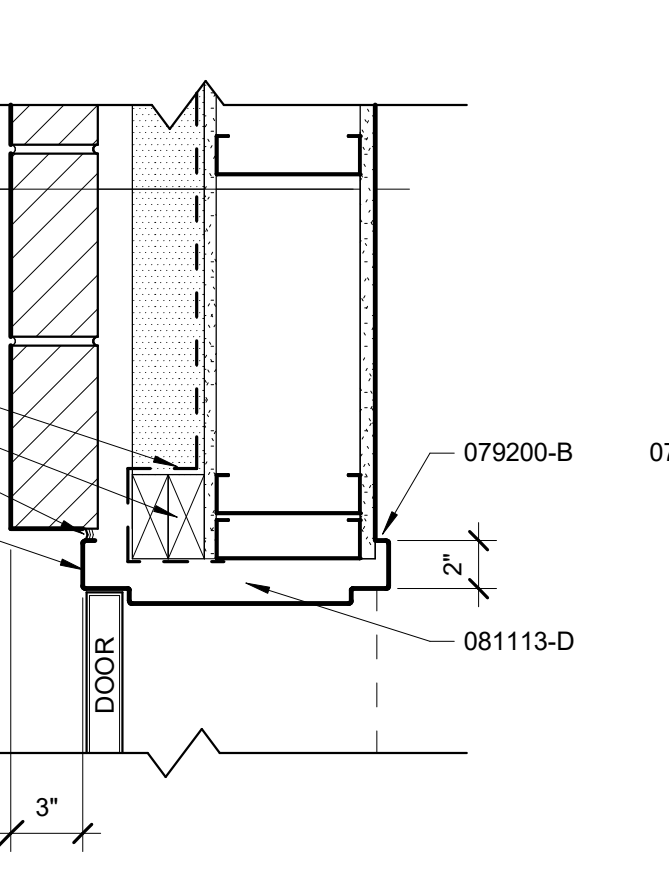
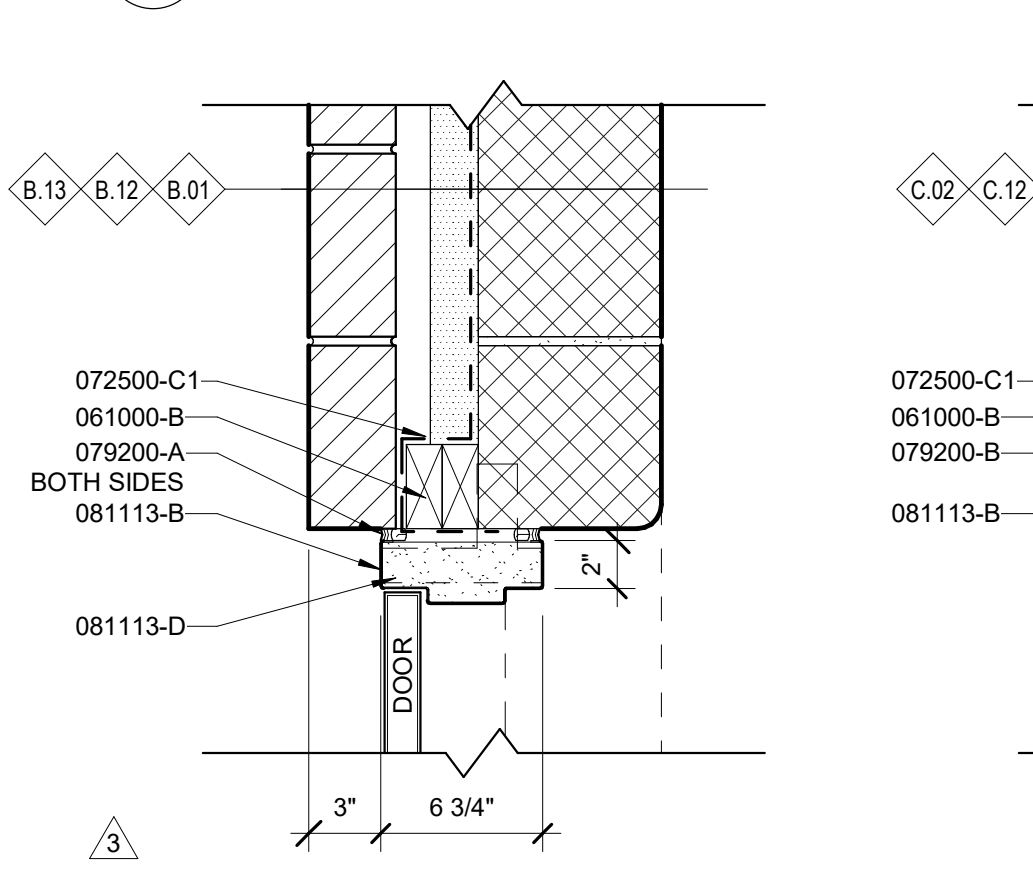
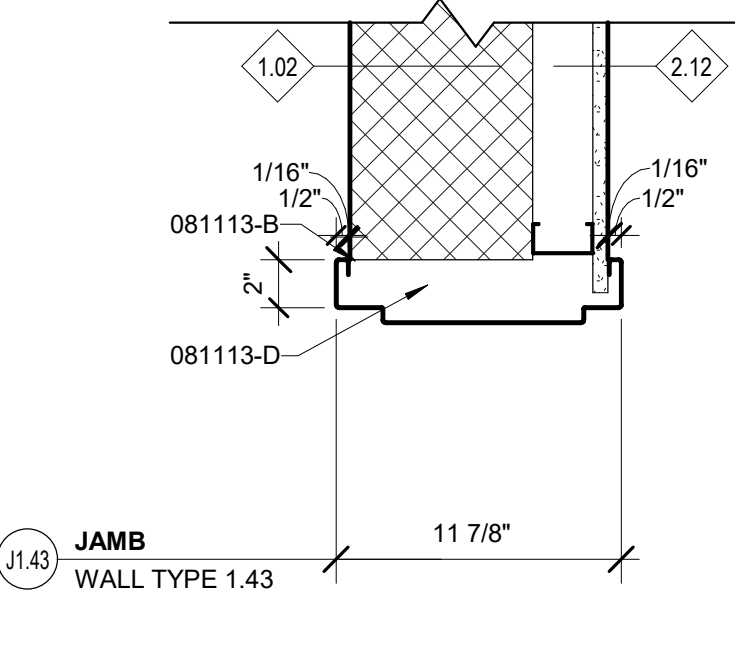
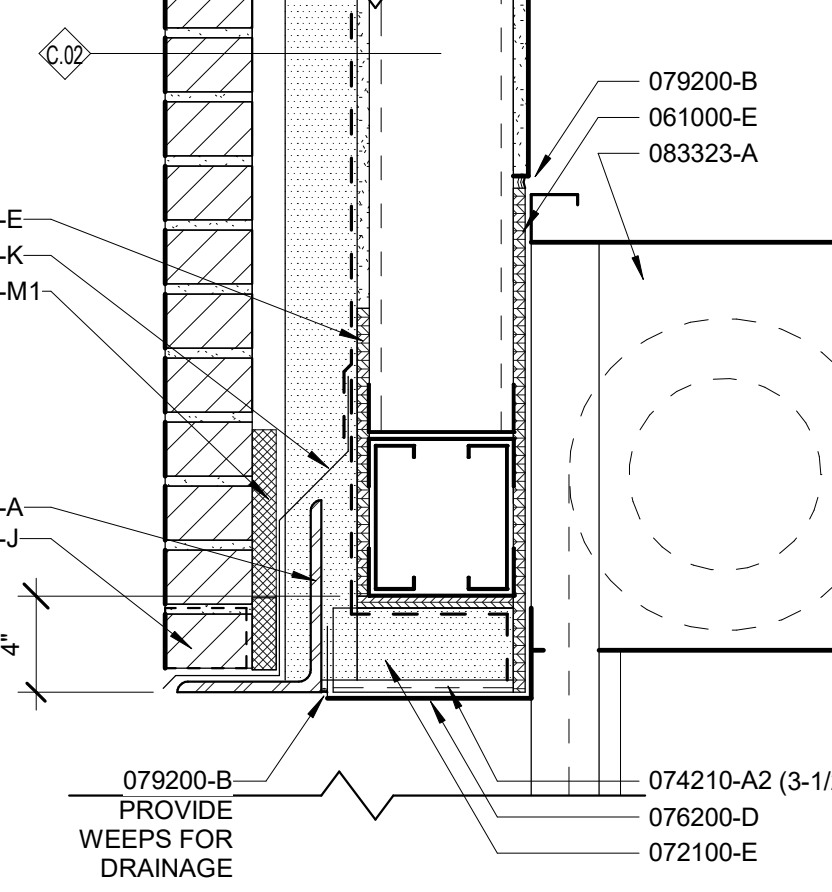
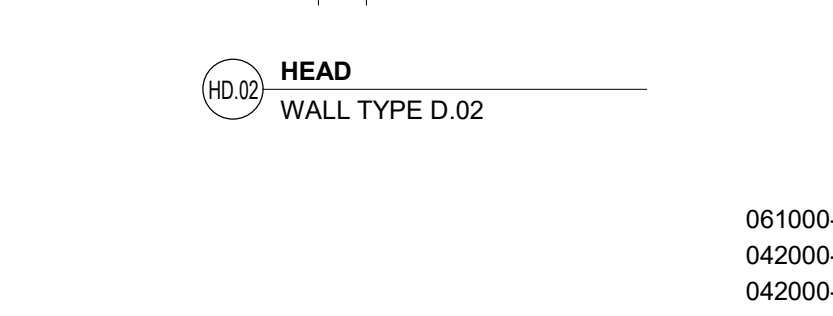
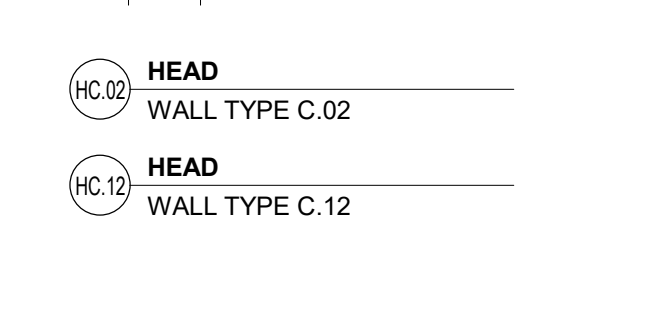
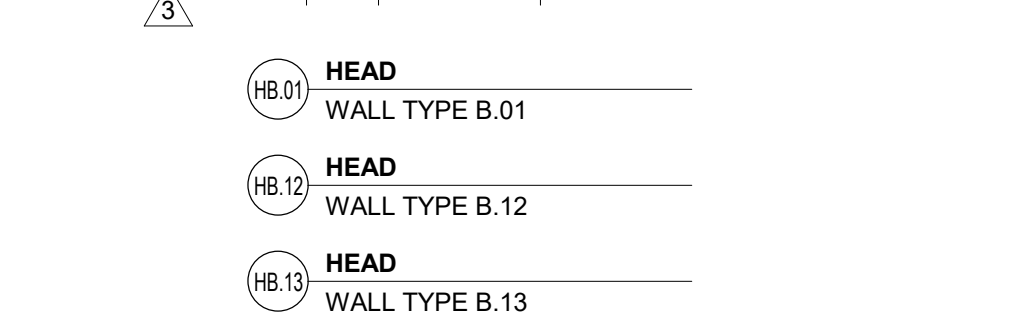
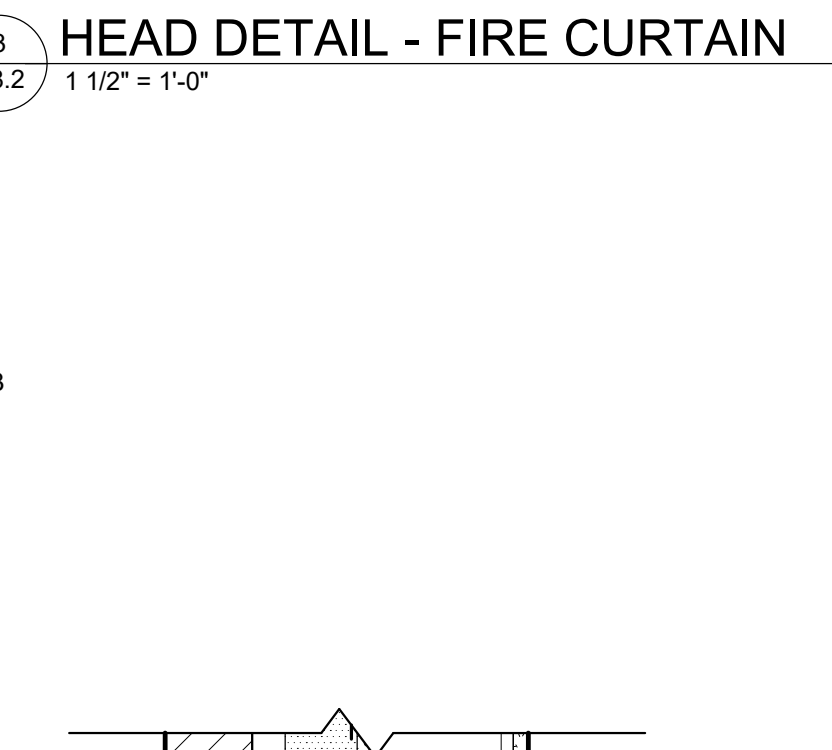
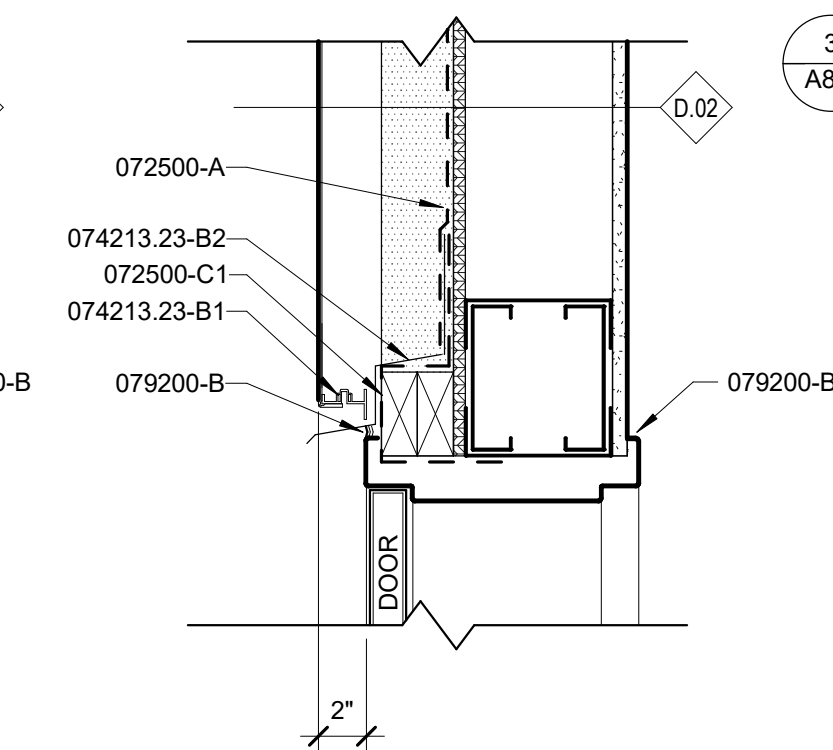
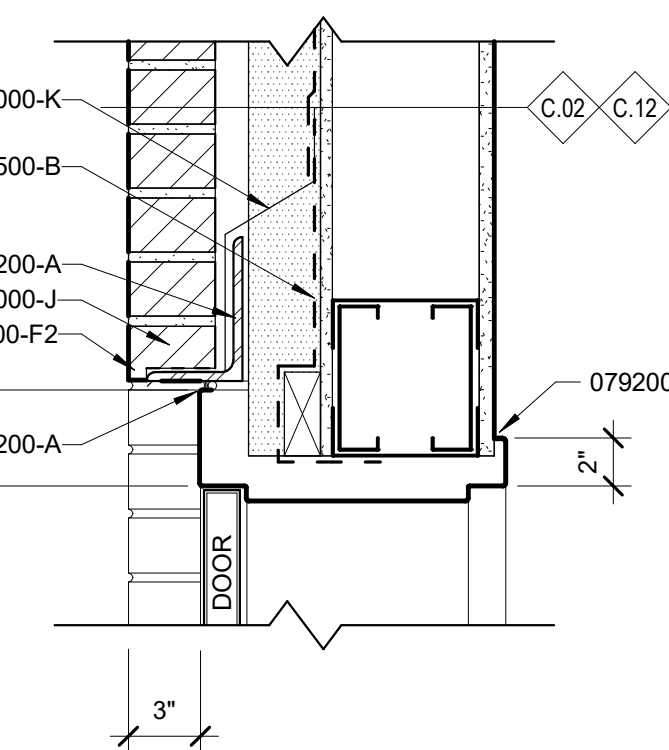
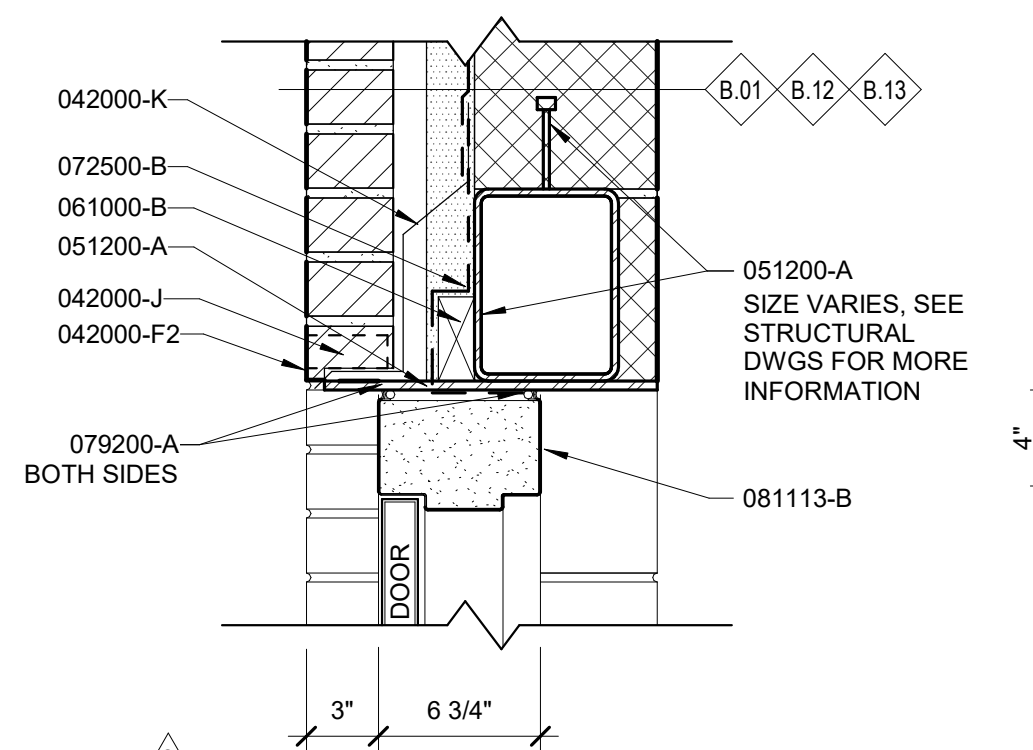
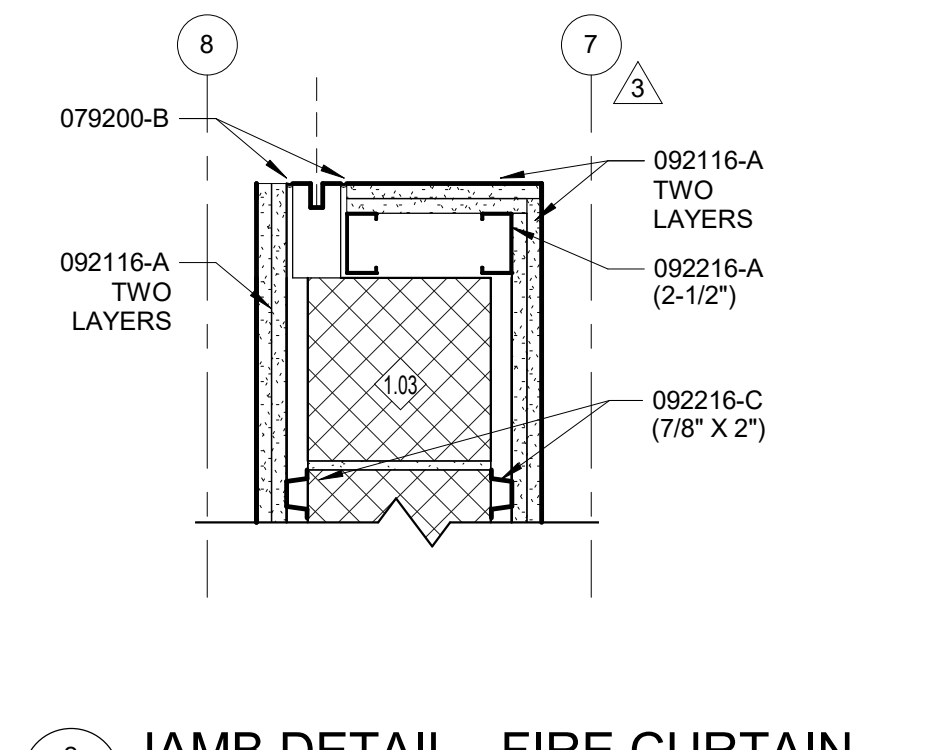


| ACCESSORY SCHEDULE - RESTROOM |                                       |            |     |    |       |         |         |          |  |
|-------------------------------|---------------------------------------|------------|-----|----|-------|---------|---------|----------|--|
| ACCESSORY NO.                 | DESCRIPTION                           | DIMENSIONS |     |    |       | FURNISH | INSTALL | KEYNOTE  | COMMENTS                               |
|                               |                                       | A          | B   | C  | DEPTH |         |         |          |  |
| R1                            | SOAP DISPENSER                        | 40"        |     | 0" |       | O.F.    | C.I.    | 102800-A |  |
| R2                            | PAPER TOWEL DISPENSER                 | 40"        |     | 0" |       | C.F.    | C.I.    | 102800-A |  |
| R3                            | MIRROR                                | 38"        | 26" |    |       | C.F.    | C.I.    | 102800-A |  |
| R4                            | WALL MOUNTED HAND SANITIZER DISPENSER | 40"        |     | 0" |       | O.F.    | C.I.    | 102800-A |  |
| R5                            | SANITARY NAPKIN DISPOSAL              | 28"        |     |    |       | C.F.    | C.I.    | 102800-A | ALIGN W/ TOP OF TOILET PAPER DISPENSER |
| R6                            | BABY CHANGING STATION                 | 36"        | 0"  |    |       | C.F.    | C.I.    | 102800-A |  |
| R7                            | TOILET PAPER DISPENSER                |            |     |    |       | C.F.    | C.I.    | 102800-A |  |
| R8.1                          | GRAB BAR- 12" HORIZONTAL              |            |     |    |       | C.F.    | C.I.    | 102800-A |  |
| R8.2                          | GRAB BAR- 24" HORIZONTAL              |            |     |    |       | C.F.    | C.I.    | 102800-A |  |
| R9.1                          | GRAB BAR- 24" HORIZONTAL              |            |     |    |       | C.F.    | C.I.    | 102800-A |  |
| R9.2                          | GRAB BAR- 36" HORIZONTAL              |            |     |    |       | C.F.    | C.I.    | 102800-A |  |
| R10                           | SHOWER STALL - ADA                    | 34"        | 36" |    |       | C.F.    | C.I.    | 102800-A |  |
| R11                           | SHOWER CURTAIN                        | 18"        | 36" |    |       | C.F.    | C.I.    | 102800-A |  |
| R12                           | TOWEL HOOK                            | 78"        |     |    |       | C.F.    | C.I.    | 102800-A |  |
| R13                           | CHURICAL DISPENSING UNIT              | 72"        |     | 0" |       | C.F.    | C.I.    | 102800-A |  |
|                               |                                       |            |     | 0" |       | C.F.    | C.I.    | 102800-A |  |

| FIXTURE MOUNTING CRITERIA & HEIGHTS - ADA 2010 STANDARDS |   | PRE-K<br>AGES 3-4            | K-GARTEN<br>AGES 5-8 | STUDENT<br>AGES 9-12 | ADULT   | ADULT<br>AMBULATORY | ADULT<br>WHEELCHAIR |
|--|---|------------------------------|----------------------|----------------------|---------|---------------------|---------------------|
| WATER CLOSET   |  | A 12"                        | 15"                  | 15"                  | 18"     | 18"                 | 18"                 |
|  |   | B 20" - LOWER<br>25" - UPPER | 25"                  | 27"                  | 34"     | 34"                 | 34"                 |
|  |   | C 14"                        | 14"                  | 17"                  | 20"     | 20"                 | 20"                 |
|  |   | D 9"                         | 9"                   | 12" MAX              | 12" MAX | 12" MAX             | 12" MAX             |
|  |   | E 12" - LOWER<br>42" - UPPER | 42"                  | 42"                  | 42"     | 42"                 | 42"                 |
|  |   | F 12"                        | 12"                  | 18"                  | 18"     | 18"                 | 18"                 |
|  |   | G 24" MIN                    | 24" MIN              | 24" MIN              | 36"     | 36"                 | 36"                 |
|  |   | H1 -                         | -                    | -                    | 12" MIN | 12" MIN             | 12" MIN             |
|  |   | H2 6"                        | 6"                   | 6"                   | -       | -                   | -                   |
|  |   |                              |                      |                      |         |                     |                     |
| URINAL   |  | A 12"                        | 15"                  | 15"                  | 17" MAX | 17" MAX             | 17" MAX             |
|  |   |                              |                      |                      |         |                     |                     |
| LAVATORY   |  | A 24" MIN                    | 24" MIN              | 24" MIN              | 27" MIN | 27" MIN             | 27" MIN             |
|  |   | B 31" MAX                    | 31" MAX              | 31" MAX              | 34"     | 34"                 | 34"                 |
|  |   | C 6"                         | 6"                   | 6"                   | 6"      | 6"                  | 6"                  |

|                       |                |     |          |
|-----------------------|----------------|-----|----------|
| Job No.               | #18045         | JND | Drawn    |
| Scale                 |                | JTH | Checked  |
| Date                  | 03/16/2020     | PLH | Approved |
| Drawing Title         | Drawing Number |     |          |
| ACCESSORY<br>SCHEDULE | A7.0           |     |          |
| Sheet                 | Of             |     |          |


| DOOR SCHEDULE - FIRST FLOOR |          |       |        |       |           |          |          |      |                  |                |        |          |             |       |             |              |              |                |                 |          |
|-----------------------------|----------|-------|--------|-------|-----------|----------|----------|------|------------------|----------------|--------|----------|-------------|-------|-------------|--------------|--------------|----------------|-----------------|----------|
| OPENING NO.                 | LOCATION | DOOR  |        |       |           |          |          | TYPE | SIDE LIGHT WIDTH | TRANSOM HEIGHT | FRAME  |          | DETAIL REF. |       | FIRE RATING | HARDWARE SET | GLAZING TYPE | ACCESS CONTROL | SMOKE CONTROL   | COMMENTS |
|                             |          | FROM  | TO     | TYPE  | WIDTH     | HEIGHT   | MATERIAL |      |                  |                | FINISH | MATERIAL | FINISH      | HEAD  |             |              |              |                |                 |          |
| 000A                        | E101     | FGFG  | 6'-0"  | 7'-0" | AL        | MFR PTD  | C.C      |      |                  |                | AL     | MFR PTD  | *           | *     |             | X1.2         | GL-3         |                | SEE NOTE 1      |          |
| 0001                        | E101     | FGFG  | 6'-0"  | 7'-0" | AL        | MFR PTD  | C.C      |      |                  |                | AL     | MFR PTD  | *           | *     |             | X1.1         | GL-3         |                | SEE NOTES 1 & 3 |          |
| 0008                        | F112A    | F     | 3'-0"  | 7'-0" | INSUL HM  | PTD      | F1B      |      |                  |                | HM     | PTD      | HC.02       | JC.02 |             | X1.5         | GL-3         |                | SEE NOTE 1      |          |
| 003                         | E112A    | F     | 3'-0"  | 7'-0" | INSUL HM  | PTD      | F1B      |      |                  |                | HM     | PTD      | HC.02       | JC.02 |             | X1.5         | -            |                |                 |          |
| 004                         | E100B    | FG    | 3'-0"  | 7'-0" | AL        | MFR PTD  | S.E      |      |                  |                | AL     | MFR PTD  | *           | *     |             | X1.7         | GL-3         |                | SEE NOTE 1      |          |
| 005                         | D101     | FGFG  | 6'-0"  | 7'-0" | AL        | MFR PTD  | CH       |      |                  |                | AL     | MFR PTD  | *           | *     |             | X1           | GL-3         |                | SEE NOTE 1      |          |
| 006                         | D101     | FGFG  | 6'-0"  | 7'-0" | AL        | MFR PTD  | CH       |      |                  |                | AL     | MFR PTD  | *           | *     |             | X1           | GL-3         |                | SEE NOTE 1      |          |
| 007                         | D103     | FF    | 6'-0"  | 7'-0" | INSUL HM  | PTD      | F1       |      |                  |                | HM     | PTD      | HC.02       | JC.02 |             | X3           | GL-3         |                |                 |          |
| 008                         | D100A    | NN    | 6'-0"  | 7'-0" | INSUL HM  | PTD      | F1       |      |                  |                | HM     | PTD      | HC.02       | JC.02 |             | X1.3         | GL-3         |                |                 |          |
| 009                         | C102     | F     | 4'-0"  | 7'-0" | INSUL HM  | PTD      | F1B      |      |                  | 2'-2 1/2"      | HM     | PTD      | HC.02       | JC.02 |             | X4           | -            |                | LOUVER TRANSOM  |          |
| 010                         | C106     | FF    | 6'-0"  | 7'-0" | INSUL HM  | PTD      | F2       |      |                  | 2'-2 1/2"      | HM     | PTD      | HC.02       | JC.02 |             | X3           | GL-1         |                | LOUVER TRANSOM  |          |
| 011                         | NN       | C100C | FF     | 6'-0" | 7'-0"     | INSUL HM | PTD      | F2   |                  |                | HM     | PTD      | HC.02       | JC.02 |             | X3           | GL-1         |                | LOUVER TRANSOM  |          |
| 012                         | C107     | FF    | 6'-0"  | 7'-0" | INSUL HM  | PTD      | F2       |      |                  |                | HM     | PTD      | HC.02       | JC.02 |             | X4           | GL-1         |                | LOUVER TRANSOM  |          |
| 013                         | C108     | F     | 4'-0"  | 7'-0" | INSUL HM  | PTD      | F2       |      | 1'-2"            | 2'-3"          | HM     | PTD      | HC.02       | JC.02 |             | X1.4         | GL-1         |                | LOUVER TRANSOM  |          |
| 014                         | C109     | F     | 3'-0"  | 7'-0" | INSUL HM  | PTD      | F2       |      | 1'-2"            | 1'-4"          | HM     | PTD      | HC.02       | JC.02 |             | X4           | GL-1         |                | LOUVER TRANSOM  |          |
| 015                         | C109     | OH    | 10'-0" | 8'-8" | INSUL MTL | MFR PTD  | S.E      |      |                  |                | AL     | MFR PTD  | 6A8.2       | 8A8.2 |             | X1.7         | GL-3         |                | SEE NOTE 1      |          |
| 016                         | C100A    | FG    | 3'-0"  | 7'-0" | AL        | MFR PTD  | C.G      |      |                  |                | AL     | MFR PTD  | *           | *     |             | X1           | GL-3         |                | SEE NOTE 1      |          |
| 017                         | A100B    | FGFG  | 6'-0"  | 7'-0" | AL        | MFR PTD  | C.A      |      |                  |                | AL     | MFR PTD  | *           | *     |             | X1           | GL-3         |                |                 |          |
| 018                         | A107     | NN    | 6'-0"  | 7'-0" | INSUL HM  | PTD      | F1       |      |                  |                | HM     | PTD      | HB.01       | JB.01 |             | X1.3         | GL-3         |                |                 |          |
| 019                         | A112     | NN    | 6'-0"  | 7'-0" | INSUL HM  | PTD      | F1       |      | 2'-0"            |                | HM     | PTD      | HB.12       | JB.12 |             | X1.3         | GL-3         |                |                 |          |
| 020                         | A112     | N     | 3'-0"  | 7'-0" | HM        | PTD      | F2       |      | 2'-0"            |                | HM     | PTD      | HB.12       | JB.12 |             | X1.6         | GL-3         |                |                 |          |
| 021                         | B110     | FGFG  | 6'-0"  | 7'-0" | AL        | MFR PTD  | C.E      |      |                  |                | AL     | MFR PTD  | *           | *     |             | X1.8         | GL-3         |                | SEE NOTES 1 & 3 |          |
| 022                         | B112     | F     | 4'-0"  | 7'-0" | INSUL HM  | PTD      | F1B      |      |                  |                | HM     | PTD      | HC.12       | JC.12 |             | X4           | -            |                |                 |          |
| 023                         | F108     | N     | 3'-0"  | 7'-0" | INSUL HM  | PTD      | F2       |      | 2'-0"            |                | HM     | PTD      | HB.12       | JB.12 |             | X1.6         | GL-1         |                |                 |          |
| 024                         | F108     | NN    | 6'-0"  | 7'-0" | INSUL HM  | PTD      | F1       |      | 2'-0"            |                | HM     | PTD      | HB.12       | JB.12 |             | X1.3         | GL-3         |                |                 |          |
| 025                         | F113     | NN    | 6'-0"  | 7'-0" | INSUL HM  | PTD      | F1       |      |                  |                | HM     | PTD      | HB.01       | JB.01 |             | X1.3         | GL-3         |                |                 |          |
| 026                         | F100B    | FGFG  | 6'-0"  | 7'-0" | AL        | MFR PTD  | C.A      |      |                  |                | AL     | MFR PTD  | *           | *     |             | X1           | GL-3         |                | SEE NOTE 1      |          |
| A100                        | A100A    | B100A | FG     | 9'-4" | 10'-0"    | FABRIC   | -        |      |                  |                | -      | -        | 3A8.2       | 2A8.2 | 120 MIN     |              |              |                |                 |          |
| A101                        | A101     | A100A | G      | 3'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | H2.44       | J2.44 |             | N1           | GL-11        |                |                 |          |
| A101A                       | A101A    | A101  | F      | 3'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | H2.44       | J2.44 |             | N1.2         | GL-11        |                | SEE NOTE 2      |          |
| A102                        | A100A    | A102  | G      | 3'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | H2.44       | J2.44 |             | N1           | GL-11        |                |                 |          |
| A102A                       | A102     | A102A | F      | 3'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | H2.44       | J2.44 |             | N1.2         | GL-11        |                | SEE NOTE 2      |          |
| A103                        | A105     | A103  | F      | 3'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | H2.04       | J2.04 |             | N10.2        | -            |                |                 |          |
| A103A                       | A103A    | A103  | F      | 3'-0" | 7'-0"     | HM       | PTD      | F1A  |                  |                | HM     | PTD      | H2.03       | J2.03 |             | N10.7        | -            |                |                 |          |
| A104                        | A104     | A104  | F      | 3'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | H2.44       | J2.44 |             | N4           | -            |                | SEE NOTE 2      |          |
| A106                        | A100B    | A106  | G      | 3'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | H2.44       | J2.44 |             | N1           | GL-11        |                |                 |          |
| A108                        | A108     | A100B | G      | 3'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | H2.44       | J2.44 |             | N1           | GL-11        |                |                 |          |
| A109                        | A100B    | A109  | G      | 3'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | H2.44       | J2.44 |             | N1           | GL-11        |                |                 |          |
| A110                        | A110     | A100B | G      | 3'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | H2.44       | J2.44 |             | N1           | GL-11        |                |                 |          |
| A111                        | A100B    | A111  | G      | 3'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | H2.44       | J2.44 |             | N1           | GL-11        |                |                 |          |
| A112                        | A112     | A100B | NN     | 6'-0" | 7'-0"     | WD       | -        |      |                  | F1             | HM     | PTD      | H1.13       | J1.13 | 60 MIN      | N7           | GL-12        |                |                 |          |
| A113                        | A100B    | A113  | G      | 3'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | H2.44       | J2.44 |             | N1           | GL-11        |                |                 |          |
| A114                        | A114     | A100B | G      | 3'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | H2.44       | J2.44 |             | N1           | GL-11        |                |                 |          |
| A116                        | A116     | A100A | F      | 3'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | H2.44       | J2.44 |             | N1           | GL-11        |                |                 |          |
| A117                        | A117     | A100A | G      | 3'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | H2.04       | J2.04 |             | N11          | -            |                |                 |          |
| A118                        | A118     | A100A | G      | 3'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | H2.44       | J2.44 |             | N1           | GL-11        |                | ELEVATOR DOOR   |          |
| A118A                       | A118A    | A118  | F      | 3'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | H2.44       | J2.44 |             | N1.2         | -            |                | SEE NOTE 2      |          |
| A119                        | A100A    | A119  | G      | 3'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | H2.44       | J2.44 |             | N1           | GL-11        |                |                 |          |
| A119A                       | A119     | A119A | F      | 3'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | H2.44       | J2.44 |             | N1.2         | GL-11        |                | SEE NOTE 2      |          |
| B100A                       | E100A    | B100A | GG     | 6'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | H2.04       | J2.04 |             | N17          | GL-11        |                |                 |          |
| B101                        | E100A    | B101  | GG     | 6'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | *           | *     |             | N6.3         | GL-11        |                | SEE NOTE 1      |          |
| B101A                       | B101     | B101A | N      | 3'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | H2.44       | J2.44 |             | N1.1         | GL-11        |                |                 |          |
| B101B                       | B101     | B101B | F      | 3'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | H2.44       | J2.44 |             | N14          | GL-11        |                |                 |          |
| B101C                       | B109     | B101  | G      | 3'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | H2.44       | J2.44 |             | N1.2         | GL-11        |                |                 |          |
| B101D                       | B101     | B101D | N      | 3'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | H2.44       | J2.44 |             | N1.1         | GL-11        |                |                 |          |
| B102                        | C100A    | B102  | F      | 3'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | H2.04       | J2.04 |             | N10.2        | -            |                |                 |          |
| B103                        | B103     | B100A | F      | 3'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | H2.04       | J2.44 |             | N10.2        | -            |                |                 |          |
| B104                        | B100A    | B104  | G      | 3'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | H2.44       | J2.44 |             | N1           | GL-11        |                |                 |          |
| B104A                       | B104     | B104A | F      | 3'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | H2.44       | J2.44 |             | N1.2         | -            |                | SEE NOTE 2      |          |
| B105                        | B105     | B100A | G      | 3'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | H2.44       | J2.44 |             | N1           | GL-11        |                |                 |          |
| B106                        | B106     | B100A | N      | 3'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | H2.44       | J2.44 |             | N1.1         | GL-11        |                |                 |          |
| B107                        | B100A    | B107  | N      | 3'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | H2.44       | J2.44 |             | N1.1         | GL-11        |                |                 |          |
| B108                        | B108     | B100A | N      | 3'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | H2.44       | J2.44 |             | N1.1         | GL-11        |                |                 |          |
| B109                        | B109     | B100A | G      | 3'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | H2.44       | J2.44 |             | N1           | GL-11        |                |                 |          |
| B110                        | B100A    | B110  | FGFG   | 6'-0" | 7'-0"     | AL       | MFR PTD  | S.2  |                  |                | AL     | MFR PTD  | *           | *     |             | N8           | GL-3         |                | SEE NOTE 1      |          |
| B111                        | B100A    | B111  | G      | 3'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | H2.44       | J2.44 |             | N1.1         | GL-11        |                |                 |          |
| B112                        | B100A    | B112  | F      | 3'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | H2.04       | J2.04 |             | N10.2        | -            |                |                 |          |
| B113                        | B113     | B100A | G      | 3'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | H2.44       | J2.44 |             | N1           | GL-11        |                |                 |          |
| B113A                       | B113A    | B113  | F      | 3'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | H2.44       | J2.44 |             | N1.2         | GL-11        |                | SEE NOTE 2      |          |
| C100A                       | C100A    | B100A | GG     | 6'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | H2.04       | J2.04 |             | N17          | GL-11        |                |                 |          |
| C100B                       | C100A    | B101  | G      | 3'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | H2.04       | J2.04 |             | N6           | GL-11        |                | SEE NOTE 1      |          |
| C100C                       | C100B    | C100C | NN     | 6'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | H1.02       | J1.02 |             | N6           | GL-11        |                |                 |          |
| C101                        | C101     | E100A | NN     | 6'-0" | 7'-0"     | WD       | -        |      |                  |                | HM     | PTD      | H1.03       | J1.03 | 90 MIN      | N7.1         | GL-12        |                |                 |          |
| C101A                       | C101     | E100A | GG     | 6'-0" | 7'-0"     | WD       | -        |      |                  |                | AL     | MFR PTD  | *           | *     | 90 MIN      | N7.1         | GL-12        |                | SEE NOTE 1      |          |
| C101B                       | C101     | E100A | GG     | 6'-0" | 7'-0"     | WD       | -        |      |                  |                |        |          |             |       |             |              |              |                |                 |          |



| KEYNOTES LISTED ON THIS SHEET ARE FOR CONVENIENCE ONLY. REFER TO SHEET CS.3 FOR COMPLETE LIST |   |
|---|---|
| 033000-1  | CONCRETE SLAB ON GRADE (REFER TO STRUCTURAL FOR MORE INFORMATION)       |
| 033000-G  | UNDER SLAB VAPOR BARRIER  |
| 042000-F2   | FACE BRICK 1, SPECIAL SHAPE 1   |
| 042000-F1   | WEEP VENT   |
| 042000-K  | FLEXIBLE METAL FLASHING   |
| 042000-M1   | FLAT MORTAR CONTROL   |
| 051200-A  | STRUCTURAL STEEL (REFER TO STRUCTURAL FOR MORE INFORMATION)             |
| 061000-B  | BLOCKING  |
| 061000-E  | EXTERIOR PLYWOOD SHEATHING, FIRE-RESISTANT TREATING, 1/2" UNO           |
| 071400-B3   | JOINT COVER SHEET   |
| 072100-E  | MINERAL WOOL INSULATION   |
| 072500-A  | NON-COMBUSTIBLE AIR & WEATHER RESISTIVE BARRIER, FLUID-APPLIED          |
| 072500-B  | NON-COMBUSTIBLE AIR & WEATHER RESISTIVE BARRIER, FLUID-APPLIED          |
| 072500-C1   | TRANSITION MEMBRANE   |
| 072123-21   | Z CLIP, SIZE AS INDICATED   |
| 072123-23-B1  | ATTACHMENT CLIP   |
| 072123-23-B2  | FLASHING  |
| 072600-D  | METAL FLASHING  |
| 078400-A  | FIRESTOPPING  |
| 079200-A  | JOINT SEALANT AND BACKER ROD  |
| 079200-B  | JOINT SEALANT   |
| 081113-B  | HOLLOW METAL DOOR FRAME   |
| 081113-D  | JAMB ANCHOR   |
| 083223-A  | OVERLAPPING COILING DOOR  |
| 083403-A  | COILING FABRIC FIRE CURTAIN (REFER TO CS SERIES FOR RATING INFORMATION) |
| 087100-C  | METAL THRESHOLD   |
| 088000-C  | DOOR GLAZING, REFER TO DOOR SCHEDULE FOR GLASS TYPE                     |
| 092116-A  | ABUSE RESISTANT WALLBOARD, 5/8" THICKNESS UNO                           |
| 092216-B  | NON-COMBUSTIBLE METAL STUD, SIZE AS INDICATED                           |
| 092216-C  | HAT SHAPED METAL FURRING CHANNEL, SIZE AS INDICATED                     |
| 096700-B  | STONE TILE MOLD   |
| 124813-A  | RECESSED ENTRANCE FLOOR MAT AND FRAME                                   |
| 321313-A  | CONCRETE SIDEWALK (REFER TO CIVIL FOR MORE INFORMATION)                 |
| 321313-D  | ISOLATION JOINT (REFER TO CIVIL FOR MORE INFORMATION)                   |

ISSUED FOR BID

|  |       |
|--|-------|
|  | Seal: |
|--|-------|



GWIO INC.  
800 WYMAN PARK DRIVE, SUITE 300  
BALTIMORE, MARYLAND 21211, 410-332-1009

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I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER 10910, EXPIRATION DATE 11/04/2020

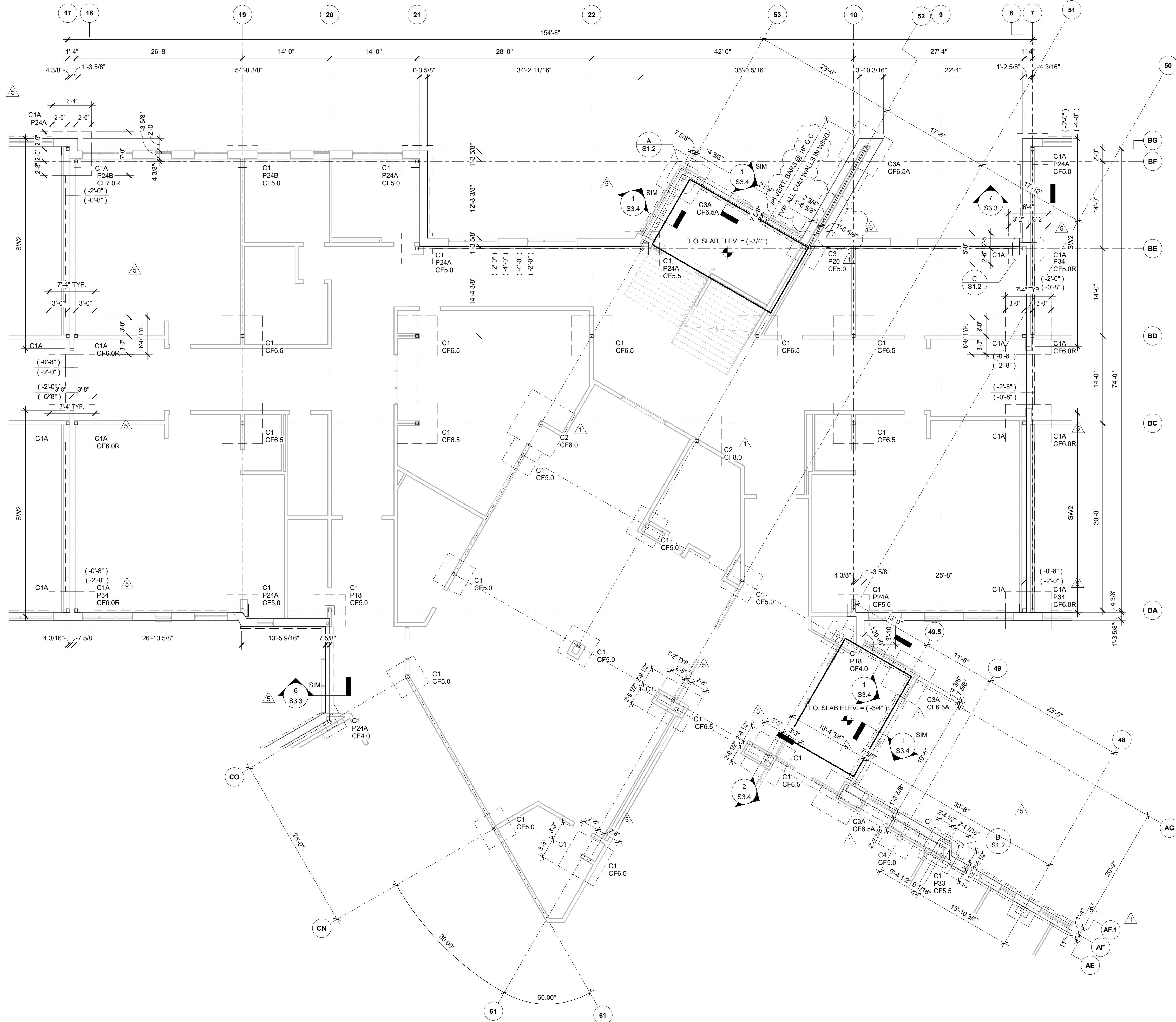
| No. | Date       | Description |
|-----|------------|-------------|
| 3   | 04/03/2020 | Addendum #3 |
| 6   | 04/22/2020 | Addendum #6 |

WAVERLEY ELEMENTARY  
SCHOOL REPLACEMENT

MARYLAND PSC NO. 10.058.21

FREDERICK COUNTY PUBLIC SCHOOLS

|                            |              |                |          |
|----------------------------|--------------|----------------|----------|
| Job No.                    | #18045       | JND            | Drawn    |
| Scale                      | As indicated | JTH            | Checked  |
| Date                       | 03/16/2020   | PLH            | Approved |
| Drawing Title              |              | Drawing Number |          |
| OPENING TYPES &<br>DETAILS |              | A8.2           |          |
| Sheet                      |              | Of             |          |

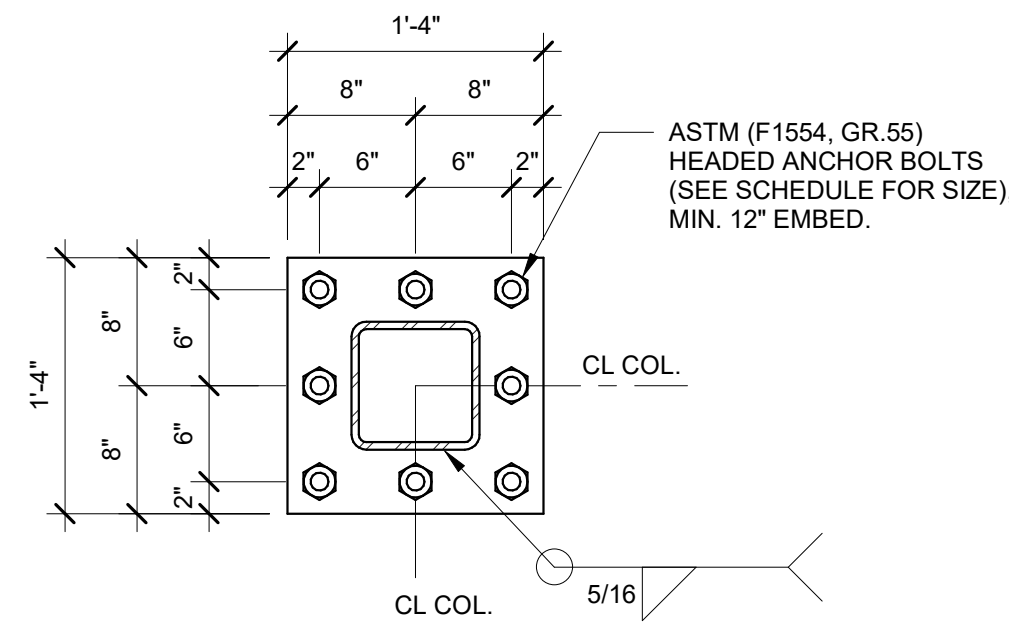


## FOUNDATION PLAN - AREA B

1/8" = 1'-0"

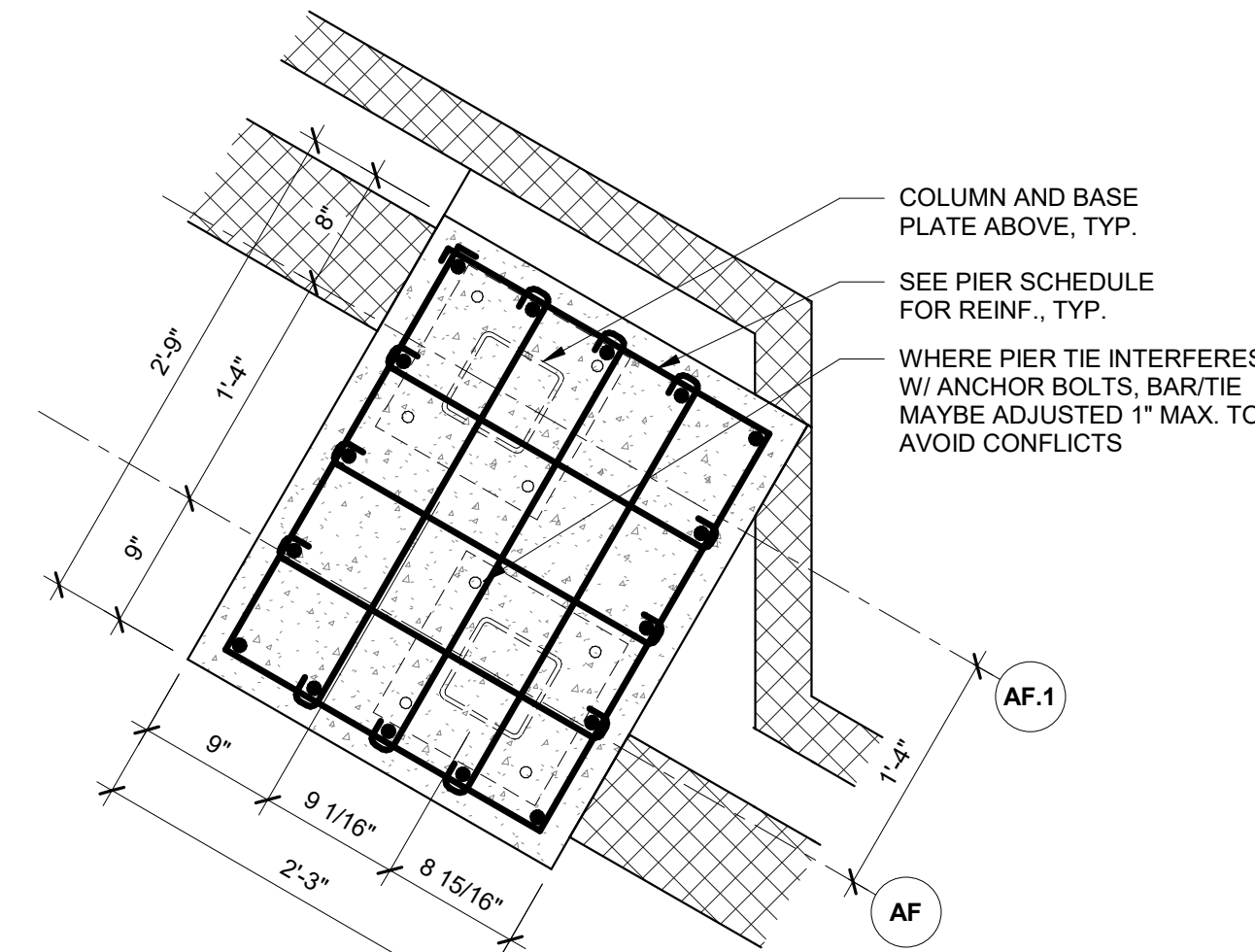
### FOUNDATION PLAN NOTES:

1. TOP OF FIRST FLOOR SLAB ELEVATION IS 410.00' (0'-0"), U.N.O.
2. ALL ELEVATIONS NOTED THUS (X'-X") DESIGNATE TOP OF FOOTING OR PIER ELEVATIONS AND ARE WITH RESPECT TO THE FIRST FLOOR TOP OF SLAB ELEVATION (0'-0").
3. TOP OF INTERIOR FOOTING ELEVATION IS (-0'-8") BELOW FIRST FLOOR TOP OF SLAB ELEVATION, U.N.O.
4. TOP OF EXTERIOR FOOTING ELEVATION IS (-2'-0") BELOW FIRST FLOOR TOP OF SLAB ELEVATION, U.N.O.
5. TOP OF PIER ELEVATION IS (-0'-8") BELOW TOP OF GRADE ELEVATION, U.N.O.
6. ALL COLUMNS THAT EXTEND 1'-0" OR MORE BELOW TOP OF SLAB OR GRADE SHALL BE COATED WITH BITUMINOUS PAINT.
7. ALL WALL FOOTINGS SHALL BE WF2.0, U.N.O. ALL INTERIOR NON-LOAD BEARING MASONRY WALLS MAY BEAR ON THICKENED SLAB, U.N.O. SEE TYPICAL THICKENED SLAB AT NON-LOAD BEARING INTERIOR MASONRY WALL DETAIL FOR SIZE AND REINFORCING.
8. ALL COLUMNS SHALL CENTER ON FOOTINGS AND PIERS, U.N.O. ALL WALLS SHALL CENTER ON WALL FOUNDATIONS, U.N.O.
9. ALL INTERIOR FLOOR SLABS SHALL BE 4" THK. NON-AIR ENTRAINED CONCRETE W/ 6X6 W2.1XW2.1 W.W.R. ON 6" THK. COMPACTED AASHTO NO. 57 CRUSHED STONE, U.N.O. PROVIDE SAWCUT CONTROL JOINTS AS INDICATED IN THE CAST-IN-PLACE CONCRETE CONSTRUCTION SECTION OF THE GENERAL SPECIFICATIONS. SUBMIT A CONTROL JOINT LOCATION PLAN TO THE ENGINEER FOR REVIEW & APPROVAL.
10. ALL EXTERIOR CONCRETE SLABS SHALL BE 5" THK. AIR ENTRAINED CONCRETE W/ 6X6 W2.9XW2.9 W.W.R. ON 6" THK. COMPACTED AASHTO NO. 57 CRUSHED STONE, U.N.O. ALL EXTERIOR SLABS SHALL BE TURNED DOWN AROUND PERIMETER AND EXTEND TO (-2'-6") BELOW FINISHED GRADE. SEE TYPICAL SLAB TURNDOWN DETAIL FOR MORE INFO.
11. CONTRACTOR SHALL VERIFY WALL LOCATIONS WITH ARCHITECTURAL PLANS PRIOR TO FOUNDATION LAYOUT. ANY DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ARCHITECT AND ENGINEER.
12. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS AND ELEVATIONS NOT SHOWN.
13. SEE ARCHITECTURAL DRAWINGS FOR ALL NECESSARY EMBEDDED ITEMS, RAMPS, STAIRS, LANDINGS, AND FINISH DETAILS.
14. CONTRACTOR SHALL COORDINATE WITH PLUMBING DRAWINGS FOR ANY CONFLICTS BETWEEN FOUNDATIONS AND NEW OR EXISTING PIPING. STEP FOOTINGS DOWN AS REQUIRED SO THAT PIPES DO NOT PENETRATE FOOTINGS AND SO THAT BOTTOM OF FOOTINGS ARE ABOVE PIPING A MINIMUM DISTANCE EQUAL TO THE PIPE DIAMETER.

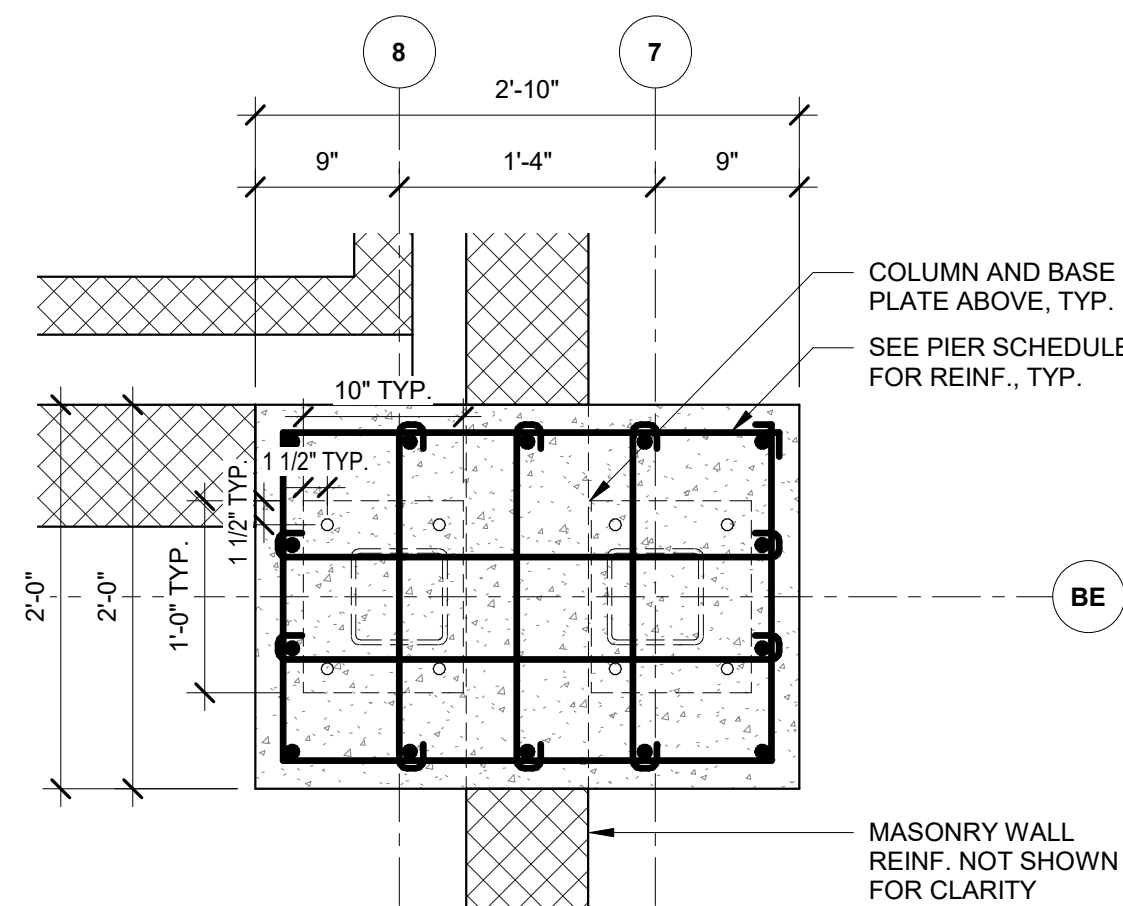


NOTES:  
1. SEE COLUMN & BASE PLATE SCHEDULE FOR MORE INFO.  
2. MASONRY WALLS NOT SHOWN FOR CLARITY.

A COLUMN C3A BASE DETAIL  
1" = 1'-0"

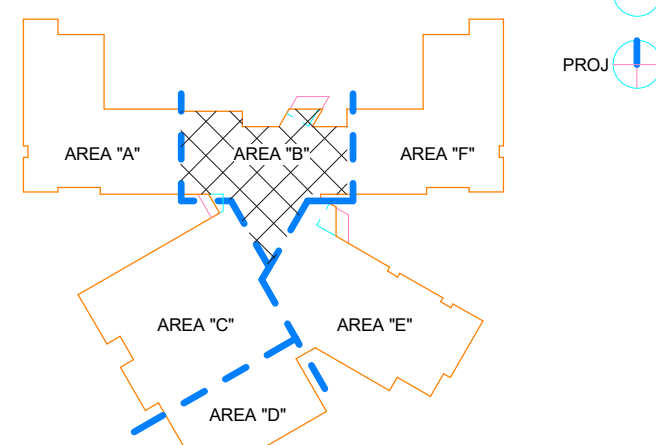


B COMBINED PIER "P33" DETAIL  
1" = 1'-0"



C COMBINED PIER "P34" DETAIL  
1" = 1'-0"

KEY PLAN:



KEYNOTES LISTED ON THIS SHEET ARE FOR CONVENIENCE ONLY. REFER TO SHEET CS.2 FOR COMPLETE LIST

ISSUED FOR PERMIT

CEG  
CARNEY ENGINEERING GROUP

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GWWO INC.  
800 WYMAN PARK DRIVE, SUITE 300  
BALTIMORE, MARYLAND 21211, 410-352-1909

I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A QUALIFIED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.  
LICENSE NUMBER: 51768, EXPIRATION DATE: 11/21/2021

| Revisions: |            |             |
|------------|------------|-------------|
| No.        | Date       | Description |
| 1          | 04/01/2020 | ADDENDUM #1 |
| 5          | 04/15/2020 | ADDENDUM #5 |
| 6          | 04/22/2020 | ADDENDUM #6 |

WAVERLEY ELEMENTARY  
SCHOOL REPLACEMENT

FREDERICK COUNTY PUBLIC SCHOOLS

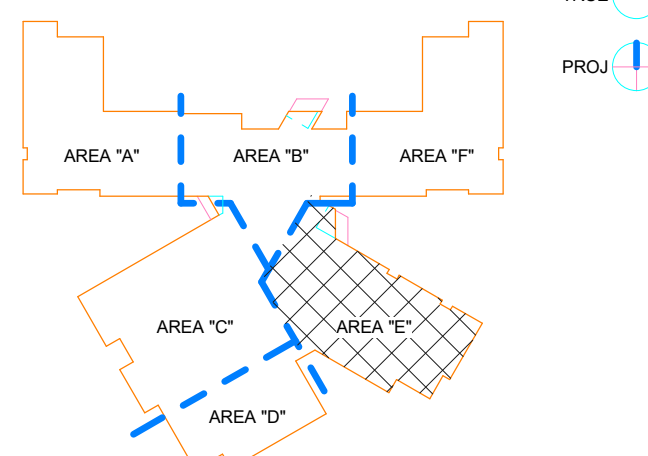
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|---------------|--------------------------|----------------|
| Job No.       | C018.0159.00             | Drawn          |
| Scale         | As indicated             | SAP Checked    |
| Date          | 03/16/2020               | BLP Approved   |
| Drawing Title | FOUNDATION PLAN - AREA B | Drawing Number |

|       |                          |      |    |
|-------|--------------------------|------|----|
| Sheet | FOUNDATION PLAN - AREA B | S1.2 | Of |
|-------|--------------------------|------|----|

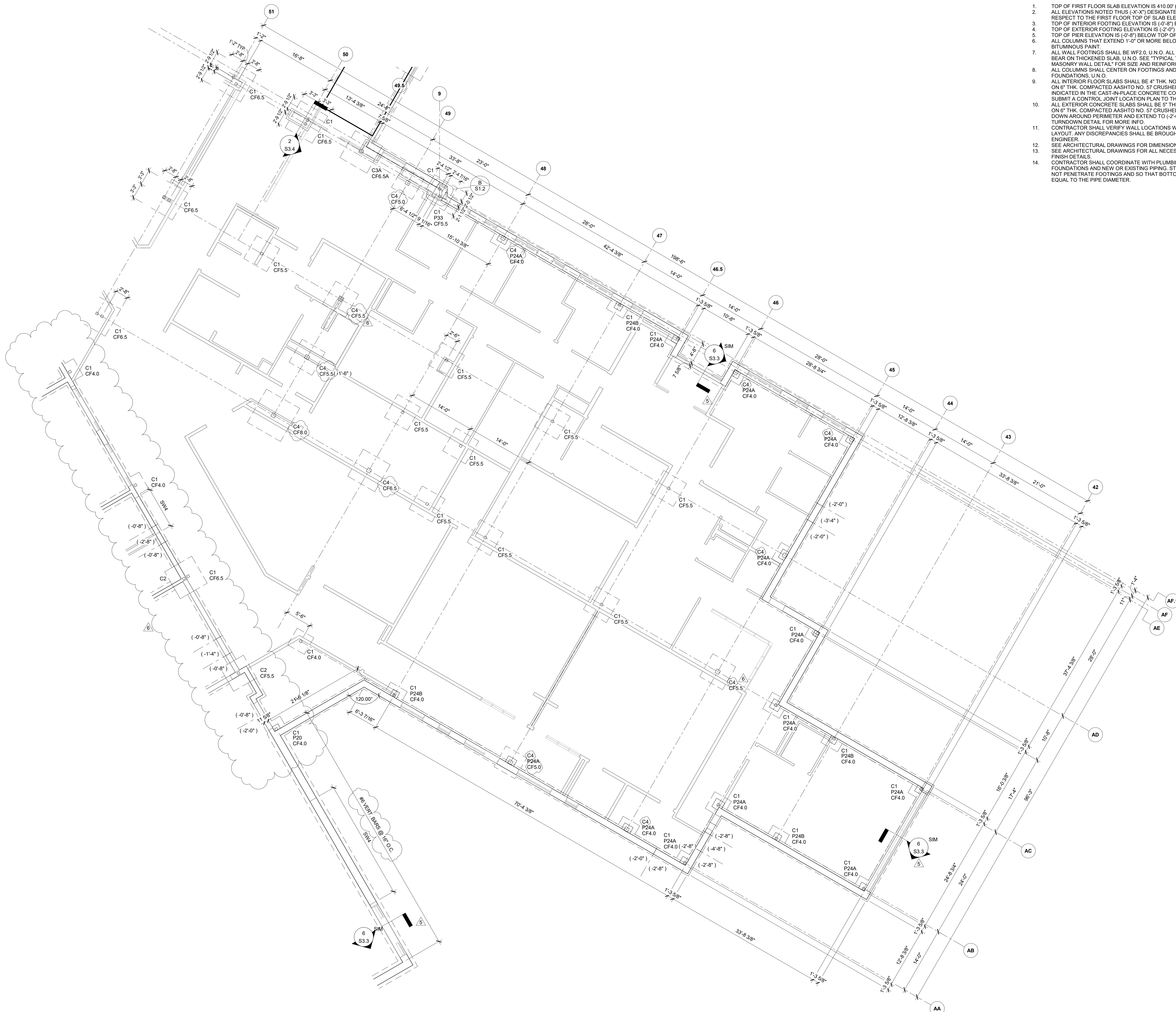
$$\frac{1}{8}'' = 1'-0''$$

- FOUNDATION PLAN NOTES:**
1. TOP OF FIRST FLOOR SLAB ELEVATION IS 410.00' (0'-0"), U.N.O.
  2. ALL ELEVATIONS NOTED THUS (-X'-X") DESIGNATE TOP OF FOOTING OR PIER ELEVATIONS AND ARE WITH RESPECT TO THE FIRST FLOOR TOP OF SLAB ELEVATION.
  3. TOP OF INTERIOR FOOTING ELEVATION IS (-0'-8") BELOW FIRST FLOOR TOP OF SLAB ELEVATION, U.N.O.
  4. TOP OF EXTERIOR FOOTING ELEVATION IS (-2'-0") BELOW FIRST FLOOR TOP OF SLAB ELEVATION, U.N.O.
  5. EXTERIOR ELEVATION (-0'-8") IS WITH RESPECT TO THE FIRST FLOOR TOP OF SLAB ELEVATION, U.N.O.
  6. ALL COLUMNS THAT EXTEND -1'-0" OR MORE BELOW TOP OF SLAB OR GRADE SHALL BE COATED WITH BITUMINOUS PAINT.
  7. ALL WALL FOOTINGS SHALL BE WF2.0, U.N.O. ALL INTERIOR NON-LOAD BEARING MASONRY WALLS MAY BEAR ON THICKENED SLAB, U.N.O. SEE "TYPICAL THICKENED SLAB AT NON-LOAD BEARING INTERIOR MASONRY WALL DETAIL" FOR SIZE AND REINFORCING.
  8. ALL MASONRY SHALL CENTER ON FOOTINGS AND PIERS, U.N.O. ALL WALLS SHALL CENTER ON WALL FOUNDATIONS, U.N.O.
  9. ALL INTERIOR FLOOR SLABS SHALL BE 4" THK. NON-AR ENTRAINED CONCRETE W/ 6X6 W2 12X2 1 W 1 W R. 6" COMPACTED AASHTO NO. 57 CRUSHED STONE, U.N.O. PROVIDE SAWCUT CONTROL JOINTS AS INDICATED IN THE CAST-IN-PLACE CONCRETE CONSTRUCTION SECTION OF THE GENERAL SPECIFICATIONS. SUBMIT A CONTROL JOINT LOCATION PLAN TO THE ENGINEER FOR REVIEW & APPROVAL.
  10. EXTERIOR CONCRETE FLOOR SLABS SHALL BE 5" THK. NON-AR ENTRAINED CONCRETE W/ 6X6 2 12X2 2 W 1 W R. 6" THK. COMPACTED AASHTO NO. 57 CRUSHED STONE, U.N.O. ALL EXTERIOR SLABS SHALL BE TURNED DOWN DETAIL AND EXTEND TO (-2'-6") BELOW FINISHED GRADE, SEE "TYPICAL SLAB TURN DOWN DETAIL".
  11. CONTRACTOR SHALL VERIFY WALL LOCATIONS WITH ARCHITECTURAL PLANS PRIOR TO FOUNDATION LAYOUT. ANY DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ARCHITECT AND ENGINEER.
  12. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS AND ELEVATIONS NOT SHOWN.
  13. SEE ARCHITECTURAL DRAWINGS FOR ALL NECESSARY EMBEDDED ITEMS, RAMPS, STAIRS, LANDINGS, AND FINISH ELEVATIONS.
  14. CONTRACTOR SHALL COORDINATE WITH PLUMBING DRAWINGS FOR ANY CONFLICTS BETWEEN FOUNDATIONS AND NEW OR EXISTING PIPING. STEP FOOTINGS DOWN AS REQUIRED SO THAT PIPES DO NOT INTERFERE WITH FOUNDATIONS SO THAT BOTTOM OF FOOTINGS ARE ABOVE PIPING A MINIMUM DISTANCE EQUAL TO THE PIPE DIAMETER.

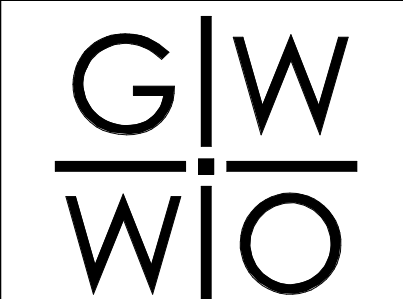
KEY PLAN:



KEYNOTES LISTED ON THIS SHEET ARE FOR CONVENIENCE ONLY. REFER TO SHEET CS.2 FOR COMPLETE LIST



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800 WYMAN PARK DRIVE, SUITE 300  
BALTIMORE, MARYLAND 21211, 410-332-1009

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I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND,  
LICENSE NUMBER 51796, EXPIRATION DATE 11/21/2021

| Revisions: |            |             |
|------------|------------|-------------|
| No.        | Date       | Description |
| 5          | 04/15/2020 | ADDENDUM #5 |
| 6          | 04/22/2020 | ADDENDUM #6 |

WAVERLEY ELEMENTARY  
SCHOOL REPLACEMENT

FREDERICK COUNTY PUBLIC SCHOOLS

|         |              |          |
|---------|--------------|----------|
| Job No. | C018.0159.00 | Drawn    |
| Scale   | 1/8" = 1'-0" | Checked  |
| Date    | 03/16/2020   | Approved |

|               |                |
|---------------|----------------|
| Drawing Title | Drawing Number |
|---------------|----------------|

FOUNDATION PLAN -

## S1.5

|       |   |
|-------|---|
| Sheet | C |
|-------|---|

# FLOOR & LOW ROOF FRAMING PLAN - AREA C

1/8" = 1'-0"

## FLOOR FRAMING PLAN NOTES:

1. TOP OF FIRST FLOOR SLAB ELEVATION IS 410.00' (0'-0"), U.N.O.
2. TOP OF FLOOR SLAB ELEVATION IS 425.33' (+15'-7").
3. TOP OF STEEL BEAM ELEVATION IS 424.71' (+14'-8 1/2"), U.N.O.
4. ALL ELEVATIONS NOTED THUS ("'-X") REFERENCED TO TOP OF FIRST FLOOR SLAB ELEVATION.
5. FLOOR SLAB SHALL BE 1 1/2" THK. 20-GAGE COMPOSITE DECK (VULCRAFT 1.5 VULOR SIMILAR) WITH 3 1/2" OF LIGHTWEIGHT CONCRETE (5" TOTAL THICKNESS) W/ 6X6 W2.1XW2.1 W.W.R. OR EQUIVALENT FIBER REINFORCEMENT. ATTACHMENT REQUIREMENTS INCLUDE: 5/8" DIA. PUDDLE WELDS IN 3/4" FASTENER PATTERN AT ALL SUPPORTS AND 12" O.C. AT ALL MEMBERS PARALLEL TO DECK SPAN. PROVIDE #10 SIDELAP SCREWS @ 12" O.C. BETWEEN SUPPORTS, U.N.O. WHERE SHEAR STUDS OCCUR. THE STUD WELD MAY REPLACE A DECK PUDDLE WELD. FLOOR SLABS SHALL BE POURED TO A UNIFORM THICKNESS AND SHALL NOT BE INCREASED IN THICKNESS TO ACCOUNT FOR DEFLECTION IN THE FRAMING, U.N.O.
6. PROVIDE 1/4" THK. EDGE ANGLE OR BENT PLATE AT ALL FLOOR EDGES, TYP. U.N.O.
7. ALL ANGLE TO MASONRY OR CONCRETE WALL CONNECTIONS ARE 5/8" Ø EXP. ANCHORS @ 24" O.C. MIN. 4" EMBED, U.N.O.
8. COORDINATE WITH MECHANICAL, ELECTRICAL & PLUMBING DRAWING FOR ALL SLAB PENETRATION SIZES & LOCATIONS. PENETRATIONS SHOWN ON THE STRUCTURAL DRAWINGS ARE APPROXIMATE AND ALL PENETRATIONS MAY NOT BE SHOWN. PROVIDE REINFORCING OR ADDITIONAL FRAMING PENETRATIONS AS SHOWN IN THE TYPICAL FLOOR SLAB PENETRATION FRAMING DETAILS.
9. FLOOR SLAB AND FRAMING TO BE CONT. THRU MEP CHASES, U.N.O. PROVIDE ADDITIONAL FRAMING AT FLOOR PENETRATIONS PER TYPICAL FLOOR SLAB PENETRATION FRAMING DETAILS AS REQUIRED.
10. BRACE MASONRY OR CONCRETE WALLS UNTIL METAL DECK HAS BEEN INSTALLED AND CONCRETE FLOOR HAS BEEN POURED.
11. SEE PLANS AND SCHEDULE FOR ALL MASONRY LINTEL DETAILS; COORDINATE LINTEL LOCATIONS WITH ARCHITECTURAL AND MECHANICAL DRAWINGS.
12. PROVIDE GAP AT TOP OF NON-LOAD BEARING WALLS TO ALLOW FOR DEFLECTIONS OF STRUCTURE. U.N.O. FILL GAP WITH COMPRESSIBLE MATERIAL OR FIRE-RATED INSULATION IF WALL IS FIRE-RATED. COORDINATE WITH ARCHITECTURAL DRAWINGS.
13. SEE ARCHITECTURAL DRAWINGS FOR TOP OF NON-LOAD BEARING WALL HEIGHTS.
14. JOIST SEAT DEPTH FOR K-SERIES JOISTS SHALL BE 2 1/2" U.N.O.
15. JOIST BRIDGING SHALL BE DESIGNED AND PROVIDED BY JOIST MANUFACTURER IN ACCORDANCE WITH THE STEEL JOIST INSTITUTE'S (SJI) REQUIREMENTS.
16. EXPOSED STRUCTURAL STEEL FRAMING
  - A. FOR EXPOSED STRUCTURAL STEEL TUBES, PREPARE AND CLEAN ALL SURFACES TO ALLOW FOR SMOOTH APPLICATION OF PAINT FINISHES.
  - B. ALL SHOP WELDS SHALL BE GROUND SMOOTH.
  - C. IT IS ACCEPTABLE TO INSERT FILL MATERIALS BETWEEN WELD POINTS IN ORDER TO PROVIDE A CLEAN AND CONTINUOUS CONNECTION.
17. SEE ARCHITECTURAL DRAWINGS FOR ALL NECESSARY EMBEDDED ITEMS, RAMPS, STAIRS, LANDINGS, AND FINISH DETAILS.
18. DETAILS AS SHOWN INDICATE TYPICAL CONNECTIONS AND CONDITIONS.
19. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS AND ELEVATIONS NOT SHOWN.

## MASONRY LINTEL PLAN NOTES:

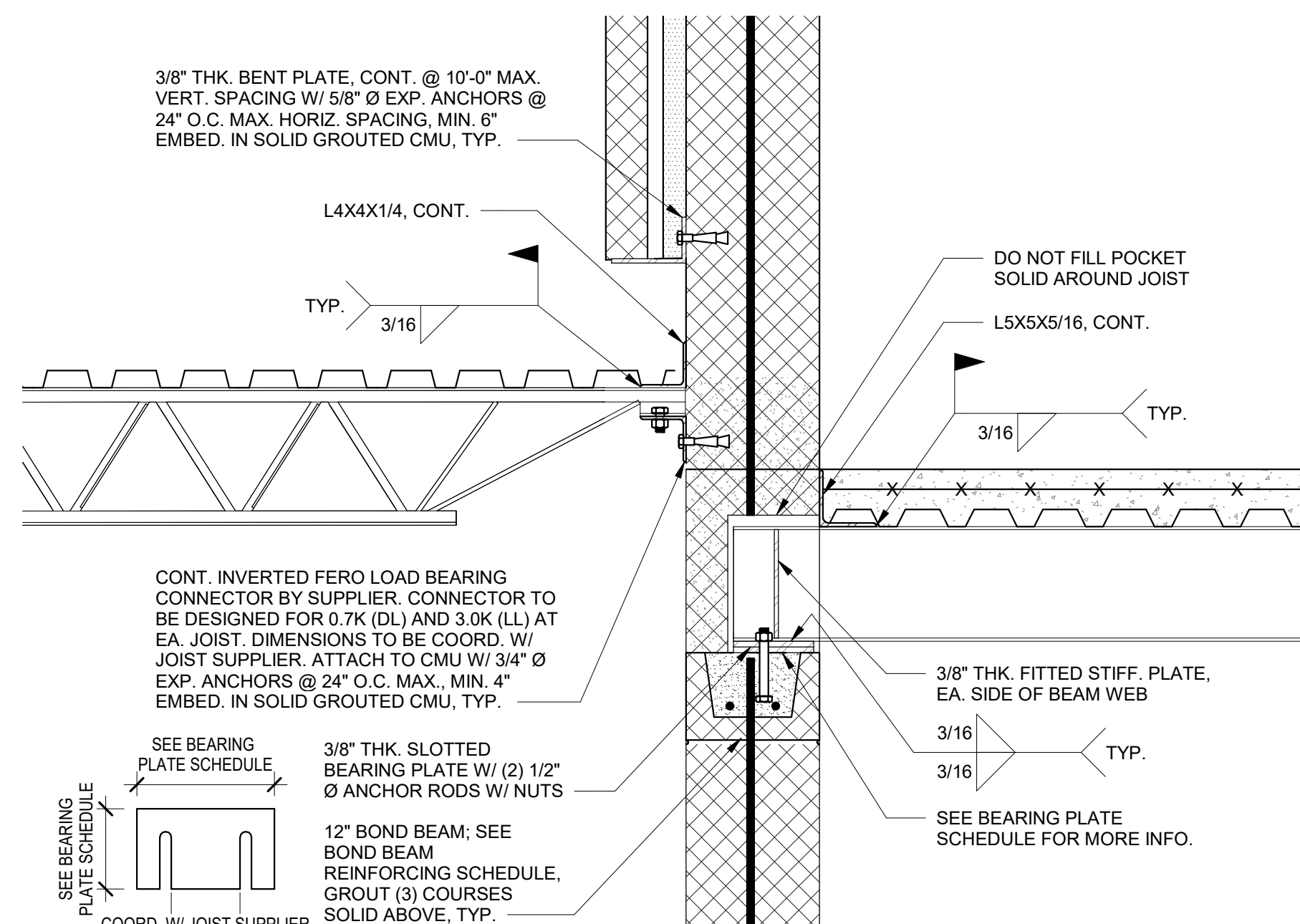
1. CONTRACTOR SHALL REFER TO ARCH. AND MECH. DRAWINGS FOR ALL PENETRATIONS THROUGH MASONRY WALLS FOR ALL OPENINGS GREATER THAN 12". NOTIFY ARCHITECT AND ENGINEER IF LINTEL IS NOT SHOWN ON LINTEL PLAN OR SCHEDULE.
2. VERIFY ALL WALL THICKNESS W/ ARCH. DRAWINGS PRIOR TO FABRICATION.
3. ALL LINTELS TO EXTEND 8" MIN. ON MIN. 16" THK. SOLID OR GROUTED SUPPORTING MASONRY, U.N.O.
4. ALL LINTELS WITH CLEAR OPENINGS 6'-0" OR GREATER SHALL HAVE (2) 1/2" Ø X 6" LONG HEADED STUDS AT EA. END, WELDED TO BOTTOM OF LINTEL AND EMBEDDED IN SOLID GROUT OR PROVIDE BEARING PLATE. CONTACT ENGINEER FOR EXACT BEARING PLATE SIZE.
5. ALL EXTERIOR WALL LINTELS SHALL BE GALVANIZED.
6. ALL STEEL LINTEL WALLS SUPPORTING BRICK SHALL BE TEMPORARILY SHORED WHERE A HEIGHT OF MASONRY GREATER THAN HALF THE SPAN OF A LINTEL WILL BE PLACED ABOVE THE LINTEL PRIOR TO MASONRY GAINING DESIGN STRENGTH. SHORING SHALL REMAIN IN PLACE UNTIL MASONRY HAS GAINED DESIGN STRENGTH AND ALL REQUIRED PERMANENT BRACING IS INSTALLED.
7. CONTRACTOR SHALL CREATE A LINTEL ERECTION PLAN AND SUBMIT FOR APPROVAL ALONG WITH DETAILED LINTEL SHOP DRAWINGS.

## MASONRY REINF. PLAN NOTES:

1. ALL EXTERIOR AND LOAD BEARING MASONRY WALLS SHALL BE REINFORCED W/ #5 VERT. BARS @ 3'-0" O.C. U.N.O.
2. ALL VERT. BARS ARE TO BE CENTERED IN MASONRY WALL, U.N.O.
3. BARS SPECIFIED ARE CONTINUOUS AND DO NOT INCLUDE DISCONTINUOUS VERT. BARS AT STEEL LINTEL BEARING.
4. AT ALL MASONRY WALLS (LOAD BEARING AND NON-LOAD BEARING) PROVIDE CONTINUOUS BOND BEAMS & REINFORCING AT THE TOP OF ALL WALLS AND AT EVERY FLOOR LEVEL. REFER TO BOND BEAM REINFORCING SCHEDULE FOR REINFORCING SIZE & QUANTITY. WHERE FLOOR-TO-FLOOR HEIGHTS EXCEED 11'-0", PROVIDE INTERMEDIATE BOND BEAMS AT 10'-0" MAXIMUM SPACING.
5. REFER TO MASONRY SHEAR WALL REINFORCING SCHEDULE FOR REINFORCING IN MASONRY SHEAR WALLS. NO CONTROL JOINTS SHALL BE LOCATED IN A SHEAR WALL. PROVIDE A JOINT AT EITHER END OF A SHEAR WALL WHERE REQUIRED TO MEET MAXIMUM SPACING LIMITS INDICATED.
6. SEE TYPICAL DETAILS FOR REINF. NOT SPECIFIED IN PLAN.
7. HORIZONTAL JOINT REINFORCEMENT SHALL CONSIST OF TRUSS TYPE ASTM A62 COLD DRAWN NO. 8 GAUGE GALVANIZED WIRE STEEL, LOCATED 18" O.C. CROSS RODS TO BE WELDED TO SIDE RODS AT 16" O.C. TO FORM A TRUSS. LAP SPICES 6" MINIMUM. PROVIDE HORIZONTAL REINFORCING IN TWO COURSES ABOVE AND BELOW OPENINGS AND AT THE TOP OF WALLS OR PARTITIONS.
8. PROVIDE CONTROL JOINTS IN MASONRY WALLS AS INDICATED IN THE CONCRETE MASONRY CONSTRUCTION SECTION OF THE GENERAL NOTES, U.N.O.
9. PROVIDE MASONRY TIES BETWEEN WYTHES WHEN MULTI-WYTHE WALL IS NOT A FIREWALL, TYP.

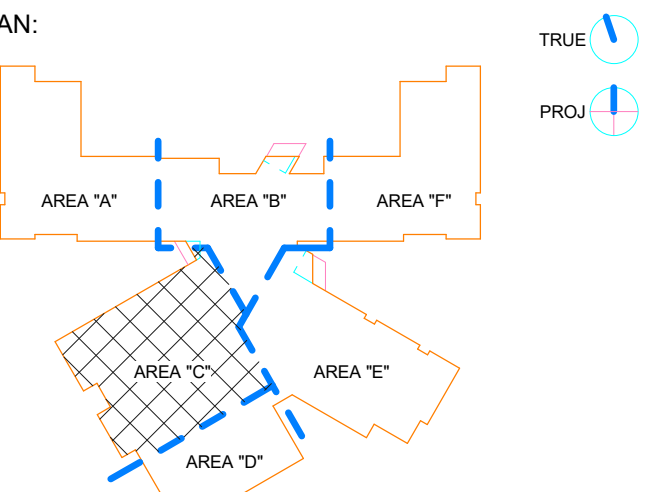
## ROOF FRAMING PLAN NOTES:

1. TOP OF FIRST FLOOR SLAB ELEVATION IS 410.00' (0'-0"), U.N.O.
2. ALL ELEVATIONS NOTED THUS ("'-X") REFERENCED TO TOP OF FIRST FLOOR SLAB ELEVATION.
3. PROVIDE 1/4" THK. EDGE ANGLE OR BENT PLATE AT ALL ROOF EDGES, TYP. U.N.O.
4. ALL ANGLE TO MASONRY WALL CONNECTIONS ARE 5/8" Ø EXPANSION BOLTS @ 24" O.C. MIN. 4" EMBED, U.N.O.
5. COORDINATE WITH MECHANICAL, ELECTRICAL & PLUMBING DRAWING FOR ALL ROOF PENETRATION SIZES & LOCATIONS. PENETRATIONS SHOWN ON THE STRUCTURAL DRAWINGS ARE APPROXIMATE AND ALL PENETRATIONS MAY NOT BE SHOWN. PROVIDE FRAMING FOR ALL PENETRATIONS AS SHOWN IN THE TYPICAL ROOF PENETRATION FRAMING DETAIL.
6. SEE ARCHITECTURAL AND HVAC DRAWINGS FOR EXACT LOCATIONS OF ROOF TOP UNITS, ROOF DRAINS, AND ROOF VENTS.
7. SEE PLANS AND SCHEDULE FOR ALL MASONRY LINTEL DETAILS; COORDINATE LINTEL LOCATIONS WITH ARCHITECTURAL AND MECHANICAL DRAWINGS.
8. PROVIDE GAP AT TOP OF NON-LOAD BEARING WALLS TO ALLOW FOR DEFLECTIONS OF STRUCTURE. U.N.O. FILL GAP WITH COMPRESSIBLE MATERIAL OR FIRE-RATED INSULATION IF WALL IS FIRE-RATED. COORDINATE WITH ARCHITECTURAL DRAWINGS.
9. SEE ARCHITECTURAL DRAWINGS FOR TOP OF NON-LOAD BEARING WALL HEIGHTS.
10. JOIST AND BEAM BEARING ELEVATIONS VARY. SLOPE WALLS AND BEAMS ACCORDINGLY, WHERE REQUIRED, FOR BEARING ELEVATIONS.
11. JOIST SEAT DEPTH FOR K-SERIES JOISTS SHALL BE 2 1/2" U.N.O.
12. JOIST BRIDGING SHALL BE DESIGNED AND PROVIDED BY JOIST MANUFACTURER IN ACCORDANCE WITH THE STEEL JOIST INSTITUTE'S (SJI) REQUIREMENTS.
13. EXPOSED STRUCTURAL STEEL FRAMING
  - A. FOR EXPOSED STRUCTURAL STEEL TUBES, PREPARE AND CLEAN ALL SURFACES TO ALLOW FOR SMOOTH APPLICATION OF PAINT FINISHES.
  - B. ALL SHOP WELDS SHALL BE GROUND SMOOTH.
  - C. IT IS ACCEPTABLE TO INSERT FILL MATERIALS BETWEEN WELD POINTS IN ORDER TO PROVIDE A CLEAN AND CONTINUOUS CONNECTION.
14. DETAILS AS SHOWN INDICATE TYPICAL CONNECTIONS AND CONDITIONS.
15. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS AND ELEVATIONS NOT SHOWN.



1 SECTION  
S1.9 1" = 1'-0"

KEY PLAN:



KEYNOTES LISTED ON THIS SHEET ARE FOR CONVENIENCE ONLY. REFER TO SHEET CS.2 FOR COMPLETE LIST

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CEG  
CARNEY ENGINEERING GROUP

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GWWO INC.  
880 WYMAN PARK DRIVE, SUITE 300  
BALTIMORE, MARYLAND 21211, 410-353-1909

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I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A QUALY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.  
LICENSE NUMBER: 51706, EXPIRATION DATE: 11/21/2021

| Revisions: |            |             |
|------------|------------|-------------|
| No.        | Date       | Description |
| 5          | 04/15/2020 | ADDENDUM #5 |
| 6          | 04/22/2020 | ADDENDUM #6 |

WAVERLEY ELEMENTARY  
SCHOOL REPLACEMENT

FREDERICK COUNTY PUBLIC SCHOOLS

|               |  |                |
|---------------|--|----------------|
| Job No.       | C018.0159.00                           | Drawn          |
| Scale         | As indicated                           | SAP Checked    |
| Date          | 03/16/2020                             | BLP Approved   |
| Drawing Title | FLOOR & LOW ROOF FRAMING PLAN - AREA C | Drawing Number |
| Sheet         | S1.9                                   | Of             |



1/8" = 1'-0"

ROOF FRAMING PLAN - AREA E

1/8" = 1'-0"

ROOF FRAMING PLAN NOTES:

1. TOP OF FIRST FLOOR SLAB ELEVATION IS 410.00' (0'-0"). U.N.O.
2. ALL ELEVATIONS NOTED THUS (+X'-X") REFERENCED TO TOP OF FIRST FLOOR SLAB ELEVATION.
3. PROVIDE 1/4" THK. EDGE ANGLE OR BENT PLATE AT ALL ROOF EDGES, TYP., U.N.O.
4. ALL ANGLE TO MASONRY WALL CONNECTIONS ARE 5/8" Ø EXPANSION BOLTS @ 24" O.C., MIN. 4" EMBED, U.N.O.
5. COORDINATE WITH MECHANICAL, ELECTRICAL & PLUMBING DRAWING FOR ALL ROOF PENETRATION SIZES & LOCATIONS. PENETRATIONS SHOWN ON THE STRUCTURAL DRAWINGS ARE APPROXIMATE AND ALL PENETRATIONS MAY NOT BE SHOWN. PROVIDE FRAMING FOR ALL PENETRATIONS AS SHOWN IN THE TYPICAL ROOF PENETRATION FRAMING DETAIL.
6. SEE ARCHITECTURAL AND HVAC DRAWINGS FOR EXACT LOCATIONS OF ROOF TOP UNITS, ROOF DRAINS, AND ROOF VENTS.
7. SEE PLANS AND SCHEDULE FOR ALL MASONRY LINTEL DETAILS. COORDINATE LINTEL LOCATIONS WITH ARCHITECTURAL AND MECHANICAL DRAWINGS.
8. PROVIDE GAP AT TOP OF NON-LOAD BEARING WALLS TO ALLOW FOR DEFLECTIONS OF STRUCTURE, U.N.O. FILL GAP WITH COMPRESSIBLE MATERIAL OR FIRESAFING INSULATION IF WALL IS FIRE-RATED. COORDINATE WITH ARCHITECTURAL DRAWINGS.
9. SEE ARCHITECTURAL DRAWINGS FOR TOP OF NON-LOAD BEARING WALL HEIGHTS. JOIST AND BEAM BEARING ELEVATIONS VARY. SLOPE WALLS AND BEAMS ACCORDINGLY, WHERE REQUIRED, FOR BEARING ELEVATIONS.
11. JOIST SEAT DEPTH FOR K-SERIES JOISTS SHALL BE 2 1/2" U.N.O.
12. JOIST BRIDGING SHALL BE DESIGNED AND PROVIDED BY JOIST MANUFACTURER IN ACCORDANCE WITH THE STEEL JOIST INSTITUTE'S (SJI) REQUIREMENTS
13. EXPOSED STRUCTURAL STEEL FRAMING:
  - A. FOR EXPOSED STRUCTURAL STEEL TUBES, PREPARE AND CLEAN ALL SURFACES TO ALLOW FOR SMOOTH APPLICATION OF PAINT FINISHES.
  - B. ALL SHOT WELDS SHALL BE GRIND SMOOTH
  - C. IT IS ACCEPTABLE TO INSERT FILL MATERIALS BETWEEN WELD POINTS IN ORDER TO PROVIDE A CLEAN AND CONTINUOUS CONNECTION
14. DETAILS AS SHOWN INDICATE TYPICAL CONNECTIONS AND CONDITIONS.
15. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS AND ELEVATIONS NOT SHOWN.

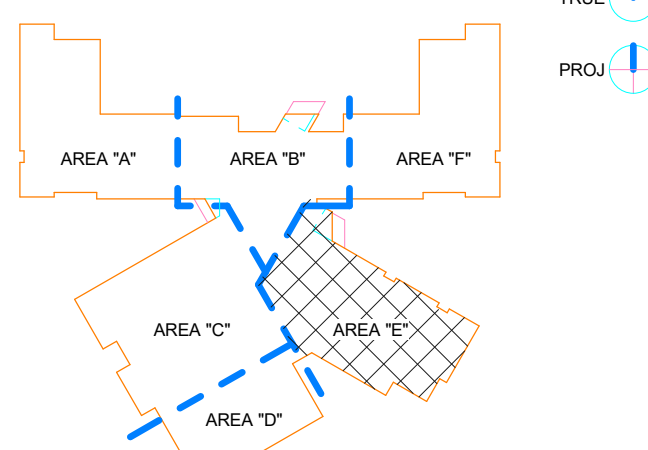
MASONRY LINTEL PLAN NOTES:

1. CONTRACTOR SHALL REFER TO ARCH. AND MECH. DRAWINGS FOR ALL PENETRATIONS THROUGH MASONRY WALLS. PROVIDE LINTELS FOR ALL OPENINGS GREATER THAN 12". NOTIFY ARCHITECT AND ENGINEER IF LINTEL IS NOT SHOWN ON LINTEL PLAN OR SCHEDULE.
2. VERIFY ALL WALL THICKNESS W/ ARCH. DRAWINGS PRIOR TO FABRICATION.
3. ALL LINTELS TO EXTEND 6" MIN. ON MIN. 16" THK. SOLID OR GROUTED SUPPORTING MASONRY, U.N.O.
4. ALL LINTELS WITH CLEAR OPENINGS 6'-0" OR GREATER SHALL HAVE (2) 1/2" Ø X 6' LONG HEADED STUDS AT EA. END, WELDED TO BOTTOM OF LINTEL AND EMBEDDED IN SOLID GROUT OR PROVIDE BEARING PLATE. CONTACT ENGINEER FOR EXACT BEARING PLATE SIZE.
5. ALL EXTERIOR WALL LINTELS SHALL BE GALVANIZED.
6. ALL STEEL LINTELS FOR EXTERIOR WALLS SUPPORTING BRICK SHALL BE TEMPORARILY SHORED WHERE A HEIGHT OF MASONRY GREATER THAN HALF THE SPAN OF A LINTEL WILL BE PLACED ABOVE THE LINTEL PRIOR TO MASONRY GAINING DESIGN STRENGTH. SHORING SHALL REMAIN IN PLACE UNTIL MASONRY HAS GAINED DESIGN STRENGTH AND ALL REQUIRED PERMANENT BRACING IS INSTALLED.
7. CONTRACTOR SHALL CREATE A LINTEL ERECTION PLAN AND SUBMIT FOR APPROVAL ALONG WITH DETAILED LINTEL SHOP DRAWINGS.

MASONRY REINF. PLAN NOTES:

1. ALL EXTERIOR AND LOAD BEARING MASONRY WALLS SHALL BE REINFORCED W/ #5 VERT. BARS @ 32" O.C. U.N.O.
2. ALL VERT. BARS ARE TO BE CENTERED IN MASONRY WALL, U.N.O.
3. BARS SPECIFIED ARE CONTINUOUS AND DO NOT INCLUDE DISCONTINUOUS VERT. BARS AT STEEL LINTEL BEARING.
4. AT ALL MASONRY WALLS (LOAD BEARING AND NON-LOAD BEARING) PROVIDE CONTINUOUS BOND BEAMS & REINFORCING AT THE TOP OF ALL WALLS AND AT EVERY FLOOR LEVEL. REFER TO BOND BEAM REINFORCING SCHEDULE FOR REINFORCING SIZE & QUANTITY. WHERE FLOOR-TO-FLOOR HEIGHTS EXCEED 11'-0", PROVIDE INTERMEDIATE BOND BEAMS AT 10'-0" MAXIMUM SPACING.
5. REFER TO MASONRY SHEAR WALL REINFORCING SCHEDULE FOR REINFORCING IN MASONRY SHEAR WALLS. NO CONTROL JOINTS SHALL BE LOCATED IN A SHEAR WALL. PROVIDE A JOINT AT EITHER END OF A SHEAR WALL WHERE REQUIRED TO MEET MAXIMUM SPACING LIMITS INDICATED.
6. SEE TYPICAL DETAILS FOR REINF. NOT SPECIFIED IN PLAN.
7. HORIZONTAL JOINT REINFORCEMENT SHALL CONSIST OF TRUSS TYPE ASTM A82 COLD DRAWN NO. 9 GAUGE GALVANIZED WIRE STEEL, LOCATED 16" O.C. CROSS RODS TO BE WELDED TO SIDE RODS AT 16" O.C. TO FORM A TRUSS. LAP SPLICES 6" MINIMUM. PROVIDE HORIZONTAL REINFORCING IN TWO COURSES ABOVE AND BELOW OPENINGS AND AT THE TOP OF WALLS OR PARTITIONS.
8. PROVIDE CONTROL JOINTS IN MASONRY WALLS AS INDICATED IN THE CONCRETE MASONRY CONSTRUCTION SECTION OF THE GENERAL NOTES, U.N.O.
9. PROVIDE MASONRY TIES BETWEEN WYTHES WHEN MULTIWYTHE WALL IS NOT A FIREWALL, TYP.

KEY PLAN:



KEYNOTES LISTED ON THIS SHEET ARE FOR CONVENIENCE ONLY. REFER TO SHEET CS.2 FOR COMPLETE LIST

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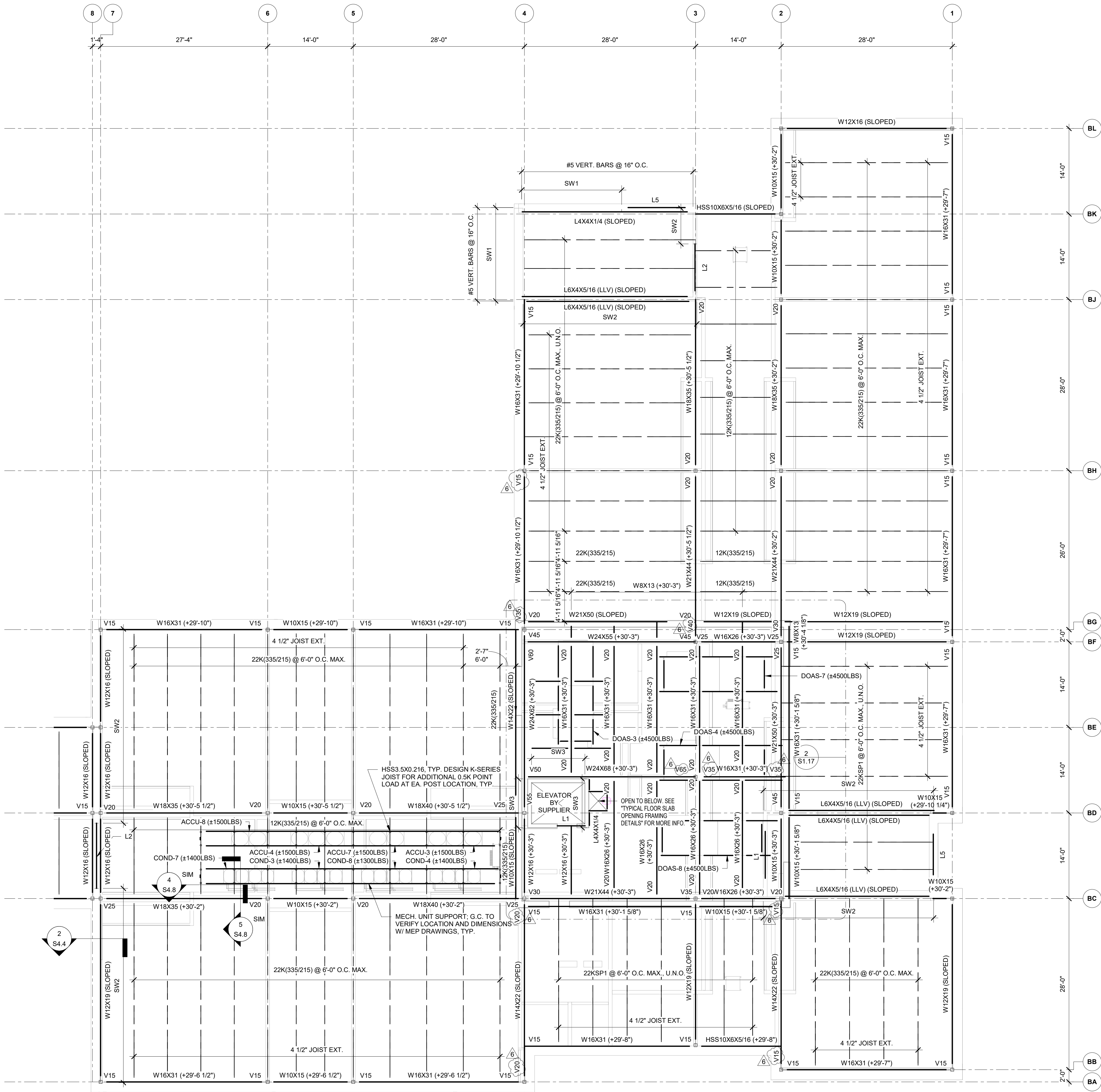
I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A QUALY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.  
LICENSE NUMBER: 51768, EXPIRATION DATE: 11/21/2021

| Revisions: |            |             |
|------------|------------|-------------|
| No.        | Date       | Description |
| 6          | 04/22/2020 | ADDENDUM #6 |

WAVERLEY ELEMENTARY  
SCHOOL REPLACEMENT

FREDERICK COUNTY PUBLIC SCHOOLS

|               |                            |                |
|---------------|----------------------------|----------------|
| Job No.       | C018.0159.00               | Drawn          |
| Scale         | 1/8" = 1'-0"               | SAP            |
| Date          | 03/16/2020                 | BLP            |
| Drawing Title | ROOF FRAMING PLAN - AREA E | Drawing Number |
| Sheet         | S1.16                      | Of             |



## ROOF FRAMING PLAN - AREA F

1/8" = 1'-0"

### ROOF FRAMING PLAN NOTES:

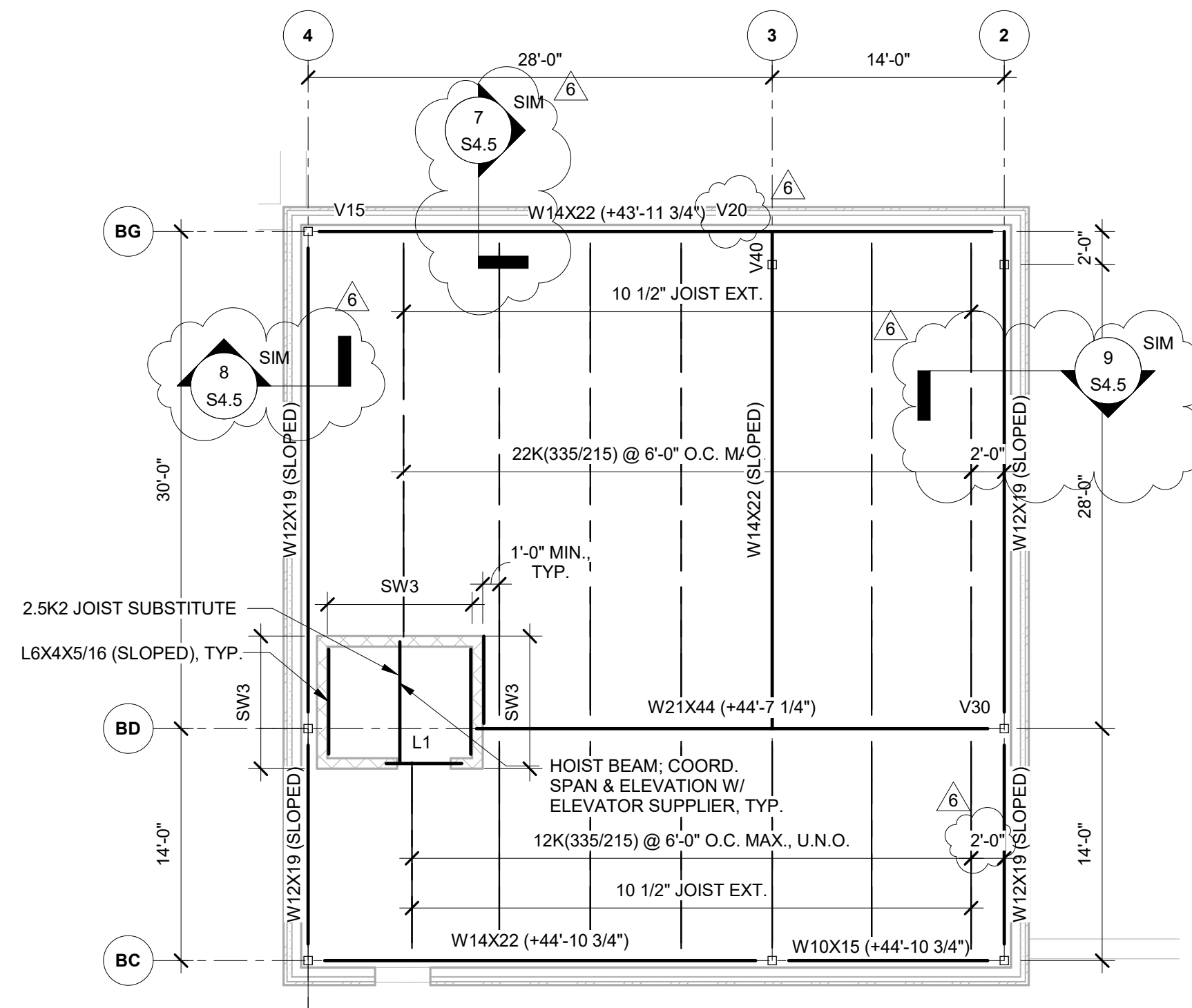
- TOP OF FIRST FLOOR SLAB ELEVATION IS 410.00' (0'-0"), U.N.O.
- ALL ELEVATIONS NOTED THUS (+X'-Y") REFERENCED TO TOP OF FIRST FLOOR SLAB ELEVATION.
- PROVIDE 1/4" THK. EDGE ANGLE OR BENT PLATE AT ALL ROOF EDGES, TYP., U.N.O.
- ALL ANGLE TO MASONRY WALL CONNECTIONS ARE 5/8" Ø EXPANSION BOLTS @ 24" O.C., MIN. 4" EMBED, U.N.O.
- COORDINATE WITH MECHANICAL, ELECTRICAL & PLUMBING DRAWING FOR ALL ROOF PENETRATION SIZES & LOCATIONS. PENETRATIONS SHOWN ON THE STRUCTURAL DRAWINGS ARE APPROXIMATE AND ALL PENETRATIONS MAY NOT BE SHOWN. PROVIDE FRAMING FOR ALL PENETRATIONS AS SHOWN IN THE TYPICAL ROOF PENETRATION FRAMING DETAIL.
- SEE ARCHITECTURAL AND HVAC DRAWINGS FOR EXACT LOCATIONS OF ROOF TOP UNITS, ROOF DRAINS, AND ROOF VENTS.
- SEE PLANS AND SCHEDULE FOR ALL MASONRY LINTEL DETAILS. COORDINATE LINTEL LOCATIONS WITH ARCHITECTURAL AND MECHANICAL DRAWINGS.
- PROVIDE GAP AT TOP OF NON-LOAD BEARING WALLS TO ALLOW FOR DEFLECTIONS OF STRUCTURE, U.N.O. FILL GAP WITH COMPRESSIBLE MATERIAL OR FIRESAFING INSULATION IF WALL IS FIRE-RATED. COORDINATE WITH ARCHITECTURAL DRAWINGS.
- SEE ARCHITECTURAL DRAWINGS FOR TOP OF NON-LOAD BEARING WALL HEIGHTS.
- JOIST AND BEAM BEARING ELEVATIONS VARY. SLOPE WALLS AND BEAMS ACCORDINGLY, WHERE REQUIRED, FOR BEARING ELEVATIONS.
- JOIST SEAT DEPTH FOR K-SERIES JOISTS SHALL BE 2 1/2" U.N.O.
- JOIST BRIDGING SHALL BE DESIGNED AND PROVIDED BY JOIST MANUFACTURER IN ACCORDANCE WITH THE STEEL JOIST INSTITUTE'S (SJI) REQUIREMENTS
- EXPOSED STRUCTURAL STEEL FRAMING
  - FOR EXPOSED STRUCTURAL STEEL TUBES, PREPARE AND CLEAN ALL SURFACES TO ALLOW FOR SMOOTH APPLICATION OF PAINT FINISHES.
  - ALL SHOP WELDS SHALL BE GRIND SMOOTH
  - IT IS ACCEPTABLE TO INSERT FILL MATERIALS BETWEEN WELD POINTS IN ORDER TO PROVIDE A CLEAN AND CONTINUOUS CONNECTION
- DETAILS AS SHOWN INDICATE TYPICAL CONNECTIONS AND CONDITIONS.
- SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS AND ELEVATIONS NOT SHOWN.

### MASONRY LINTEL PLAN NOTES:

- CONTRACTOR SHALL REFER TO ARCH. AND MECH. DRAWINGS FOR ALL PENETRATIONS THROUGH MASONRY WALLS. PROVIDE LINTELS FOR ALL OPENINGS GREATER THAN 12". NOTIFY ARCHITECT AND ENGINEER IF LINTEL IS NOT SHOWN ON LINTEL PLAN OR SCHEDULE.
- VERIFY ALL WALL THICKNESS W/ ARCH. DRAWINGS PRIOR TO FABRICATION.
- ALL LINTELS TO EXTEND 6" MIN. ON MIN. 16" THK. SOLID OR GROUTED SUPPORTING MASONRY, U.N.O.
- ALL LINTELS WITH CLEAR OPENINGS 6'-0" OR GREATER SHALL HAVE (2) 1/2" Ø X 6' LONG HEADED STUDS AT EA. END, WELDED TO BOTTOM OF LINTEL AND EMBEDDED IN SOLID GROUT OR PROVIDE BEARING PLATE. CONTACT ENGINEER FOR EXACT BEARING PLATE SIZE.
- ALL EXTERIOR WALL LINTELS SHALL BE GALVANIZED.
- ALL STEEL LINTELS FOR EXTERIOR WALLS SUPPORTING BRICK SHALL BE TEMPORARILY SHORED WHERE A HEIGHT OF MASONRY GREATER THAN HALF THE SPAN OF A LINTEL WILL BE PLACED ABOVE THE LINTEL PRIOR TO MASONRY GAINING DESIGN STRENGTH. SHORING SHALL REMAIN IN PLACE UNTIL MASONRY HAS GAINED DESIGN STRENGTH AND ALL REQUIRED PERMANENT BRACING IS INSTALLED.
- CONTRACTOR SHALL CREATE A LINTEL ERECTION PLAN AND SUBMIT FOR APPROVAL ALONG WITH DETAILED LINTEL SHOP DRAWINGS.

### MASONRY REINF. PLAN NOTES:

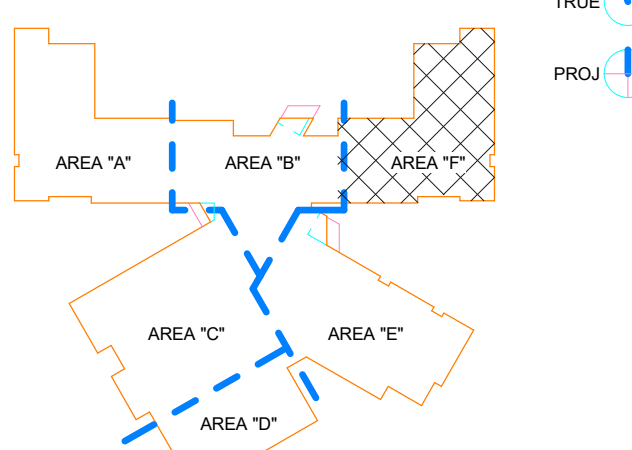
- ALL EXTERIOR AND LOAD BEARING MASONRY WALLS SHALL BE REINFORCED W/ #5 VERT. BARS @ 32" O.C., U.N.O.
- ALL VERT. BARS ARE TO BE CENTERED IN MASONRY WALL, U.N.O.
- BARS SPECIFIED ARE CONTINUOUS AND DO NOT INCLUDE DISCONTINUOUS VERT. BARS AT STEEL LINTEL BEARING.
- AT ALL MASONRY WALLS (LOAD BEARING AND NON-LOAD BEARING) PROVIDE CONTINUOUS BOND BEAMS & REINFORCING AT THE TOP OF ALL WALLS AND AT EVERY FLOOR LEVEL. REFER TO BOND BEAM REINFORCING SCHEDULE FOR REINFORCING SIZE & QUANTITY. WHERE FLOOR-TO-FLOOR HEIGHTS EXCEED 11'-0", PROVIDE INTERMEDIATE BOND BEAMS AT 10'-0" MAXIMUM SPACING.
- REFER TO MASONRY SHEAR WALL REINFORCING SCHEDULE FOR REINFORCING IN MASONRY SHEAR WALLS. NO CONTROL JOINTS SHALL BE LOCATED IN A SHEAR WALL. PROVIDE A JOINT AT EITHER END OF A SHEAR WALL WHERE REQUIRED TO MEET MAXIMUM SPACING LIMITS INDICATED.
- SEE TYPICAL DETAILS FOR REINF. NOT SPECIFIED IN PLAN.
- HORIZONTAL JOINT REINFORCEMENT SHALL CONSIST OF TRUSS TYPE ASTM A82 COLD DRAWN NO. 9 GAUGE GALVANIZED WIRE STEEL, LOCATED 16" O.C. CROSS RODS TO BE WELDED TO SIDE RODS AT 16" O.C. TO FORM A TRUSS. LAP SPLICES 6" MINIMUM. PROVIDE HORIZONTAL REINFORCING IN TWO COURSES ABOVE AND BELOW OPENINGS AND AT THE TOP OF WALLS OR PARTITIONS.
- PROVIDE CONTROL JOINTS IN MASONRY WALLS AS INDICATED IN THE CONCRETE MASONRY CONSTRUCTION SECTION OF THE GENERAL NOTES, U.N.O.
- PROVIDE MASONRY TIES BETWEEN WYTHES WHEN MULTIWYTHE WALL IS NOT A FIREWALL, TYP.



## HIGH ROOF FRAMING PLAN - AREA F

1/8" = 1'-0"

KEY PLAN:



KEYNOTES LISTED ON THIS SHEET ARE FOR CONVENIENCE ONLY. REFER TO SHEET CS.2 FOR COMPLETE LIST

ISSUED FOR PERMIT

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CEG  
CARNEY ENGINEERING GROUP

Seal:  
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W|O  
GW INC.  
800 WYMAN PARK DRIVE, SUITE 300  
BALTIMORE, MARYLAND 21211, 410-350-1909

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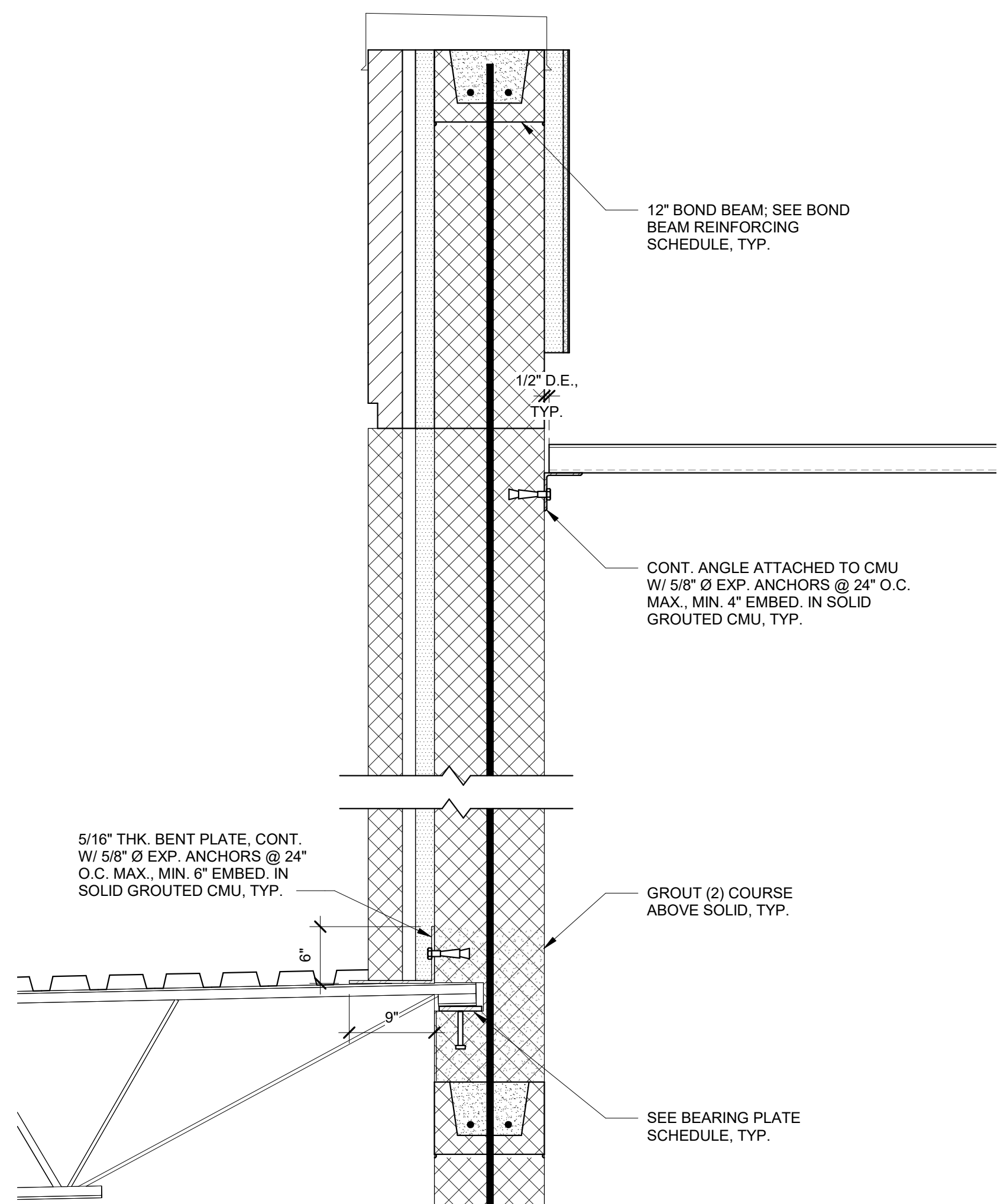
I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A QUALY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.  
LICENSE NUMBER: 51768, EXPIRATION DATE: 11/21/2021

| Revisions: |            |             |
|------------|------------|-------------|
| No.        | Date       | Description |
| 6          | 04/22/2020 | ADDENDUM #6 |

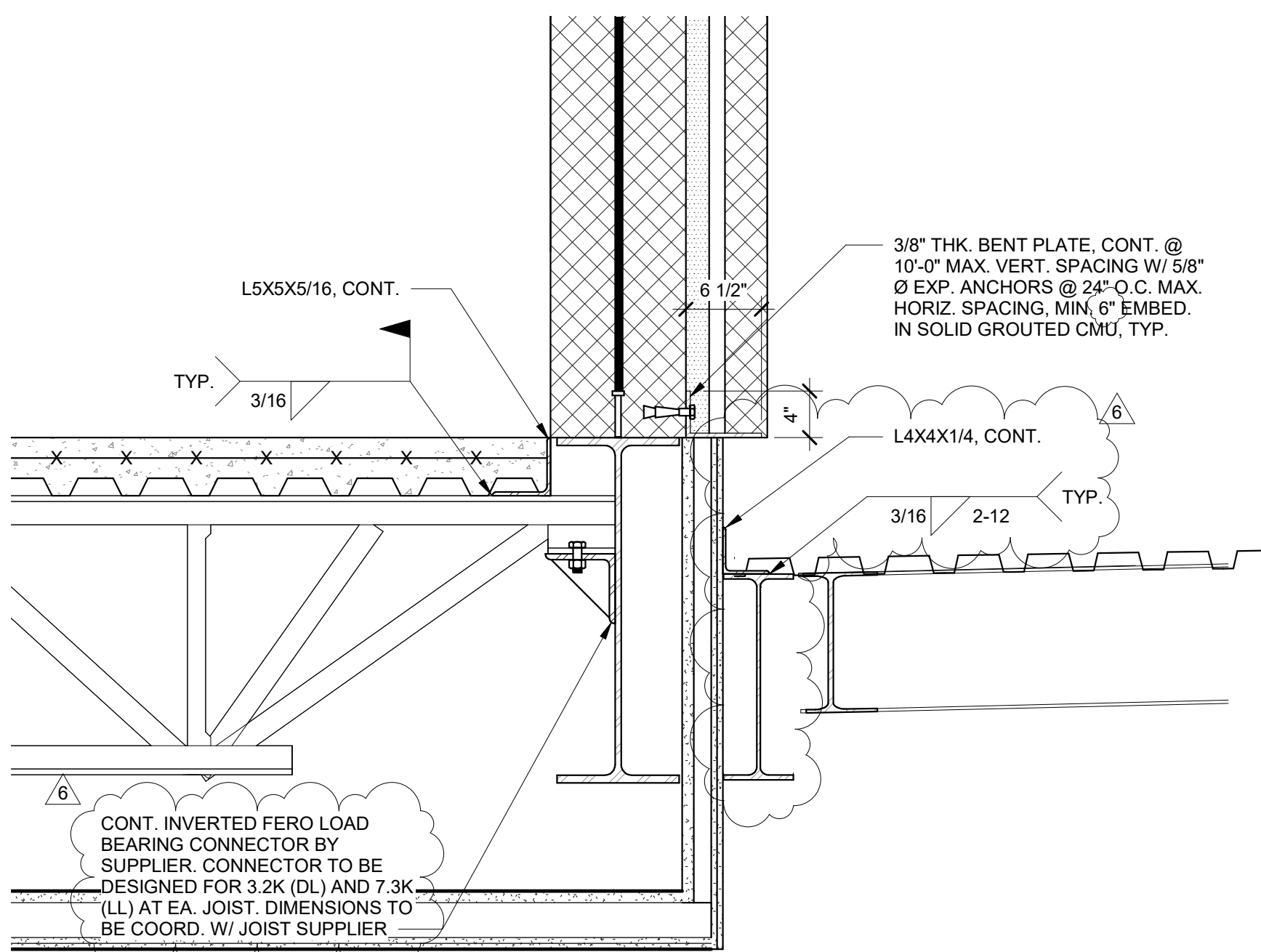
WAVERLEY ELEMENTARY  
SCHOOL REPLACEMENT

FREDERICK COUNTY PUBLIC SCHOOLS

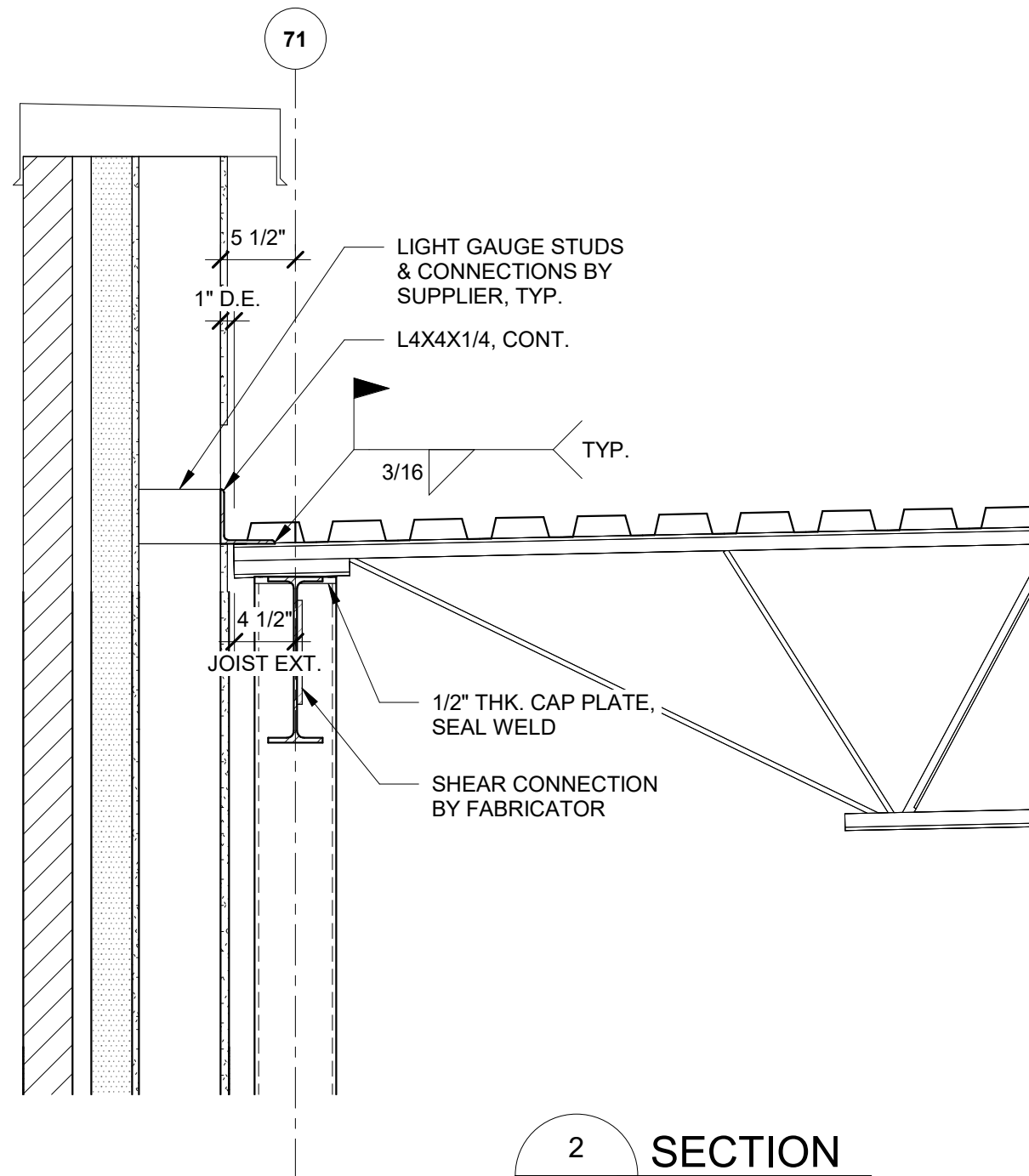
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|---------------|----------------------------|----------|
| Job No.       | C018.0159.00               | Drawn    |
| Scale         | 1/8" = 1'-0"               | SAP      |
| Date          | 03/16/2020                 | BLP      |
| Drawing Title | ROOF FRAMING PLAN - AREA F | Approved |
| Sheet         | S1.17                      | Of       |



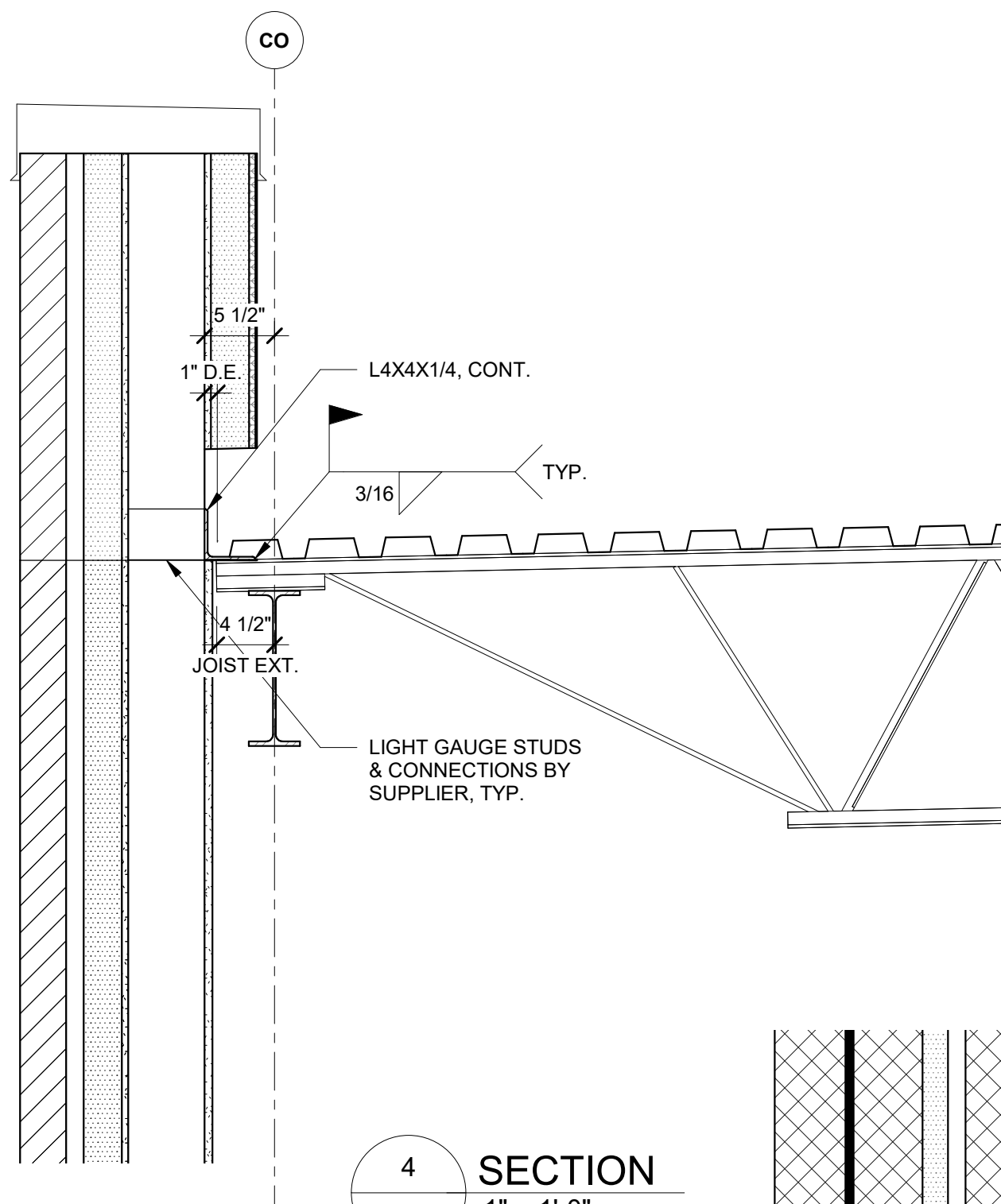
1 SECTION  
S4.7 1" = 1'-0"



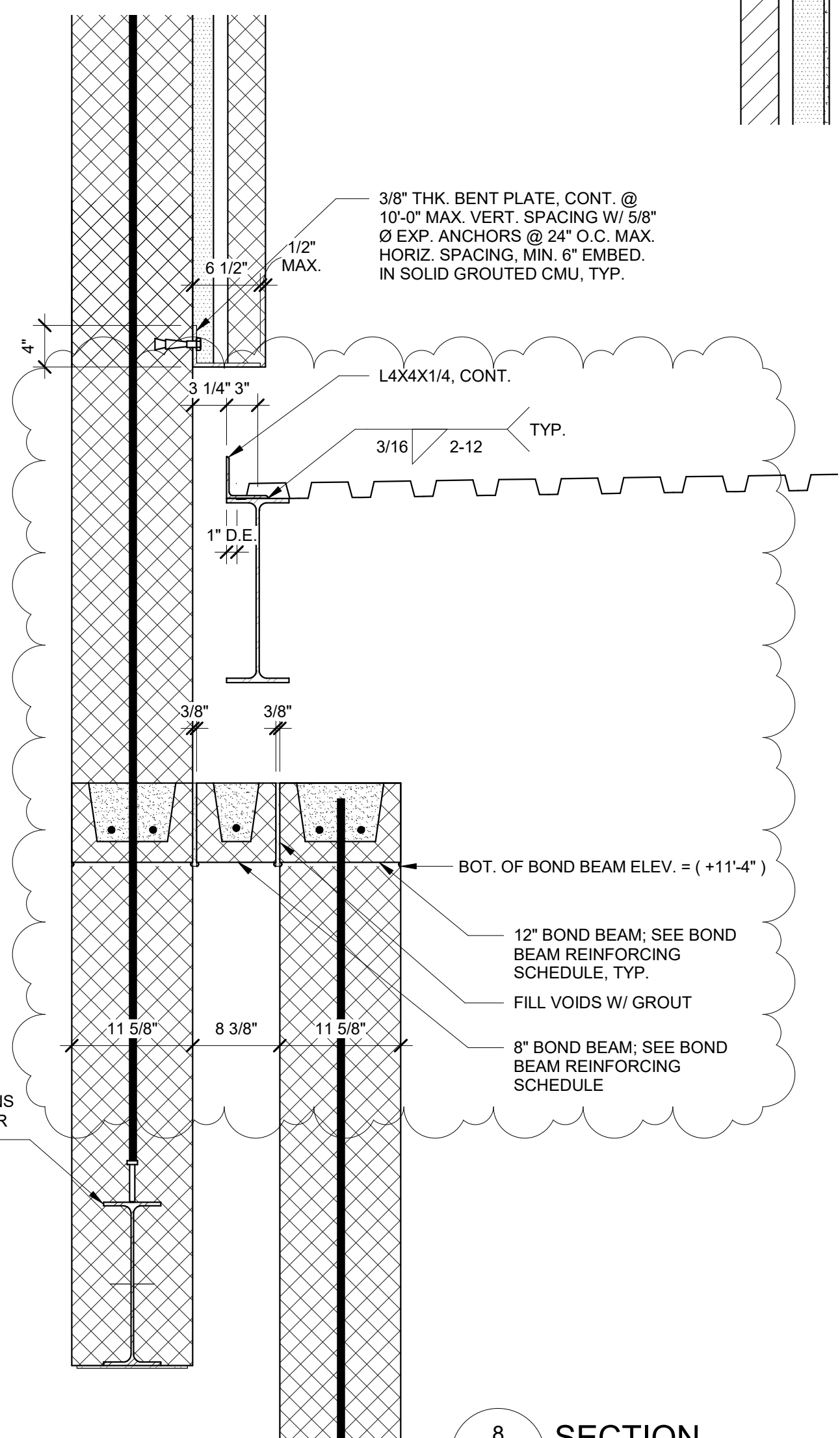
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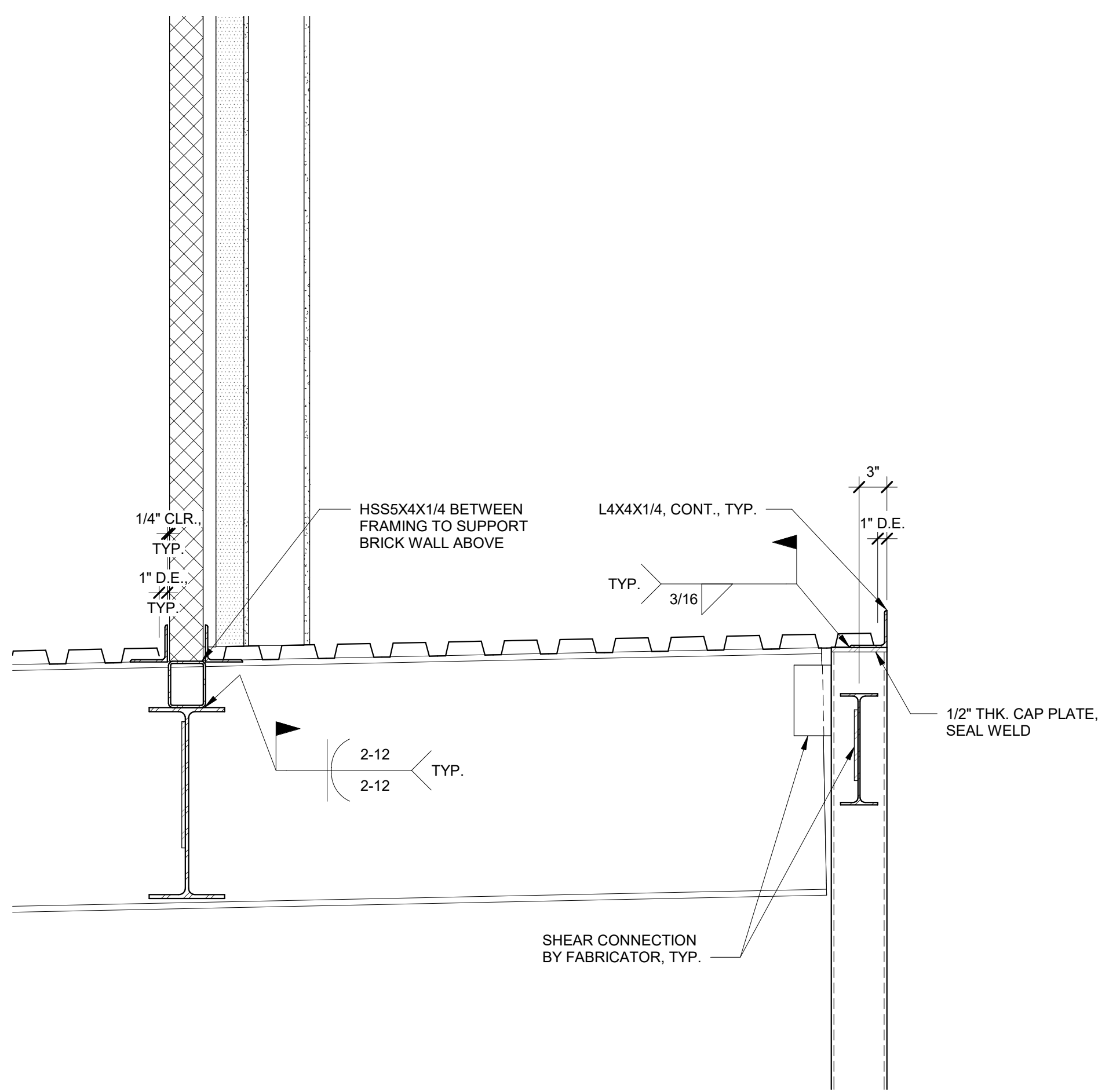
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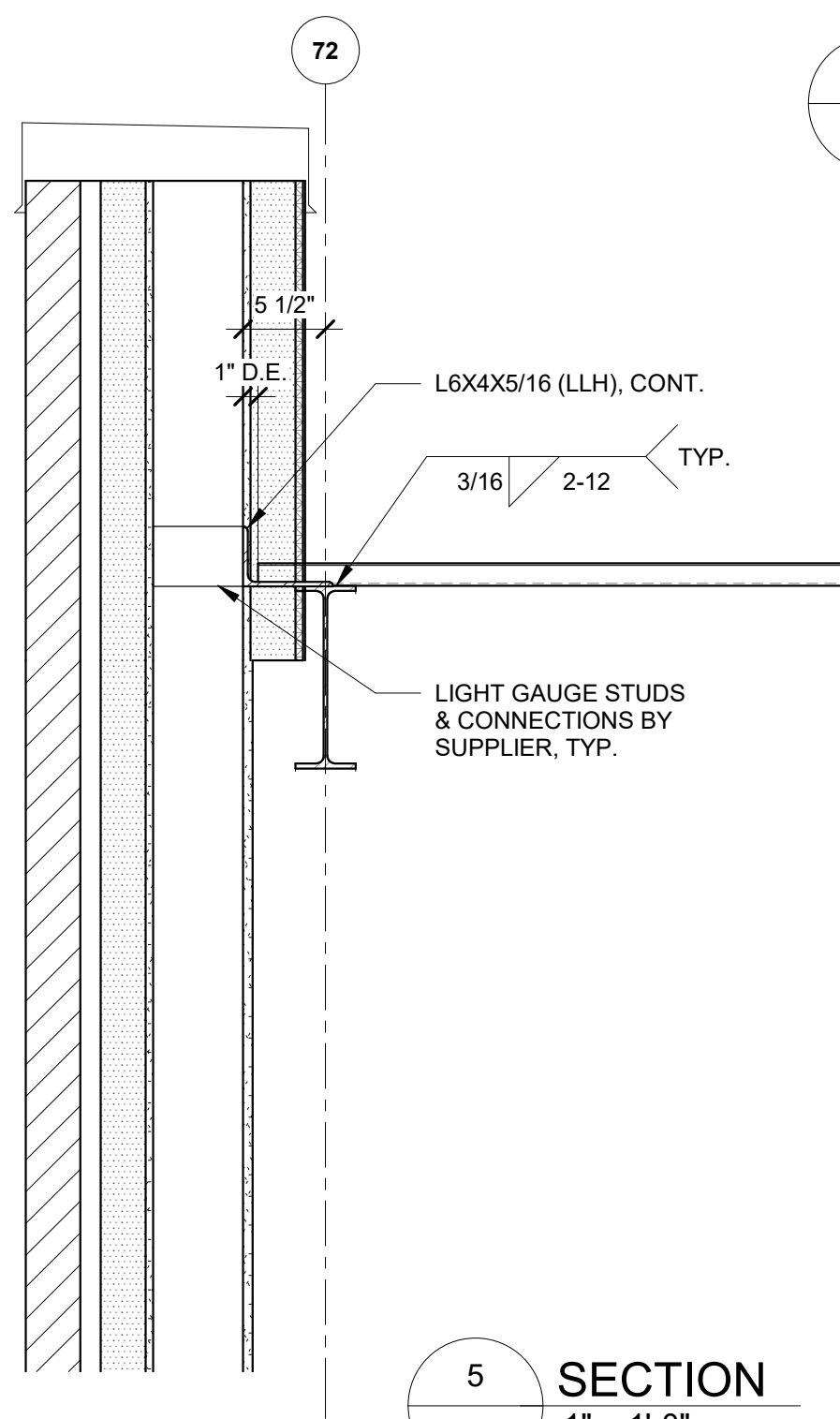
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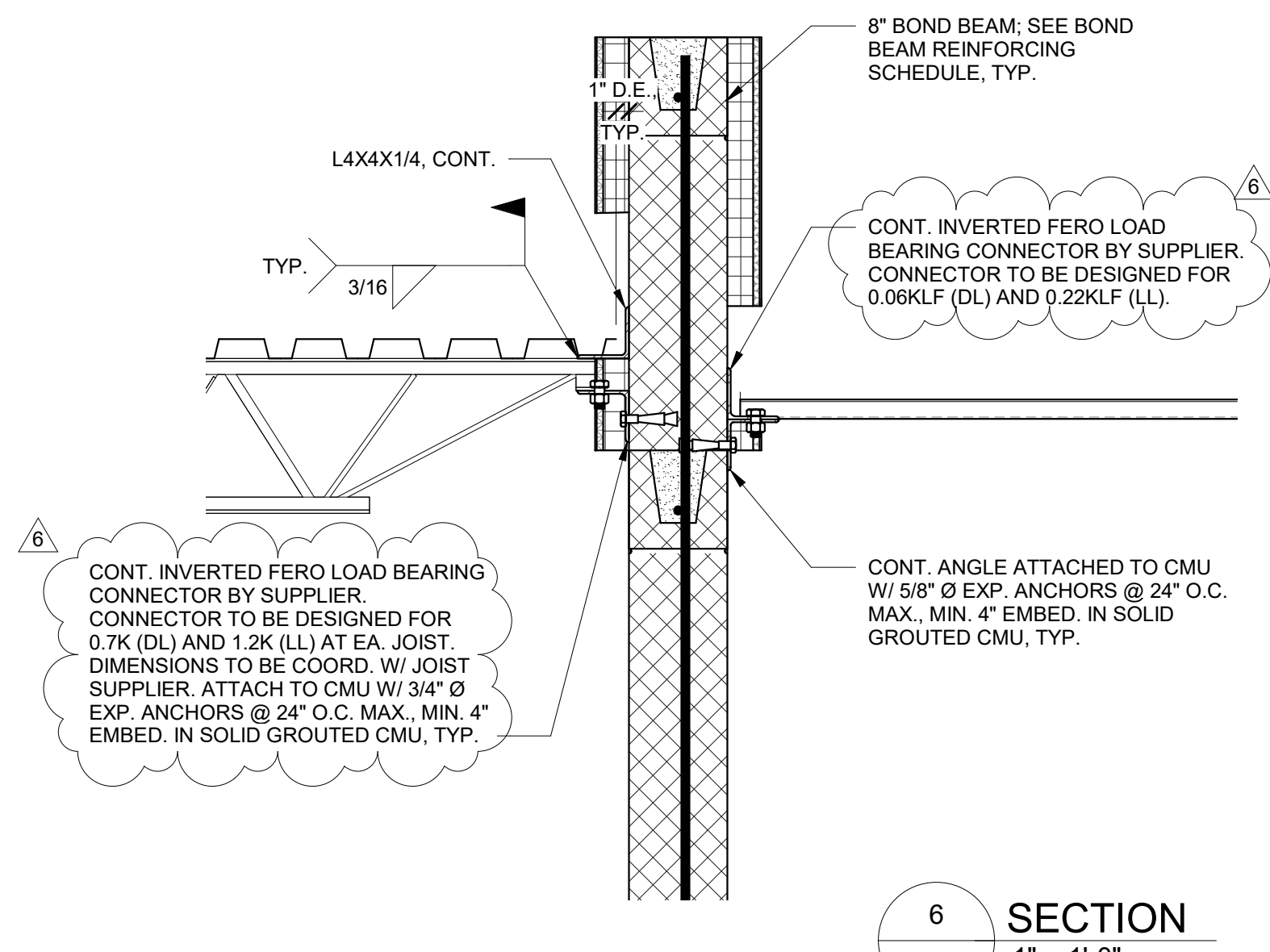
8 SECTION  
S4.7 1" = 1'-0"



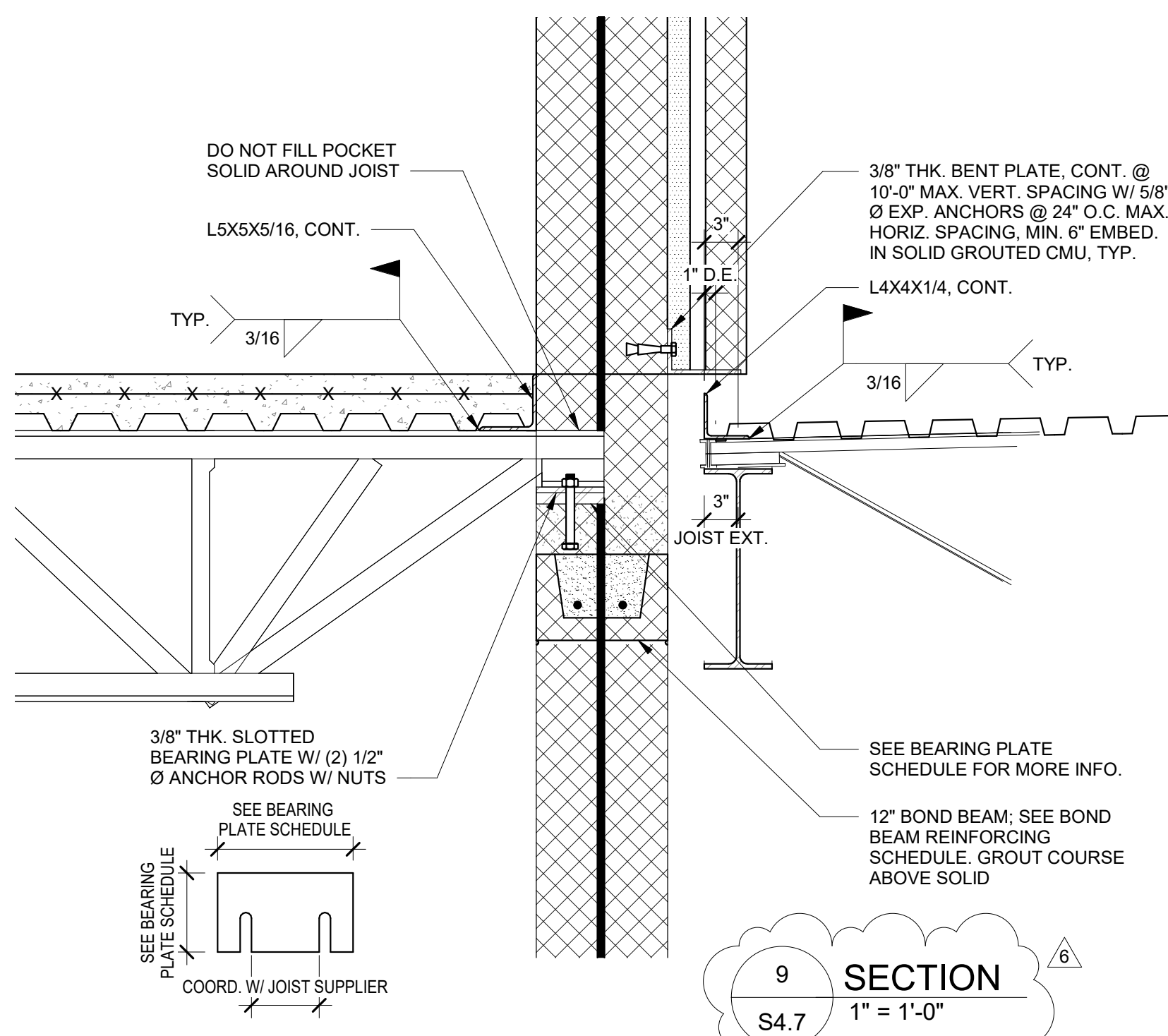
3 SECTION  
S4.7 1" = 1'-0"



5 SECTION  
S4.7 1" = 1'-0"



6 SECTION  
S4.7 1" = 1'-0"



KEY PLAN:

KEYNOTES LISTED ON THIS SHEET ARE FOR CONVENIENCE ONLY. REFER TO SHEET CS.2 FOR COMPLETE LIST

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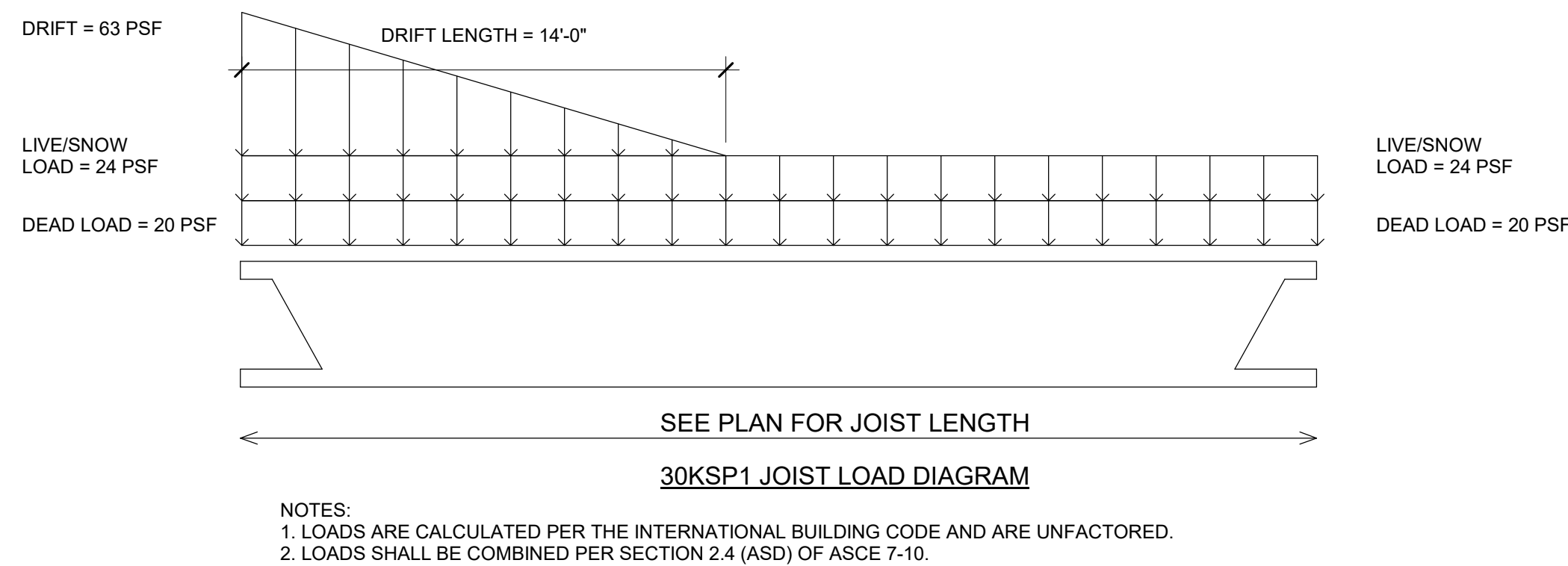
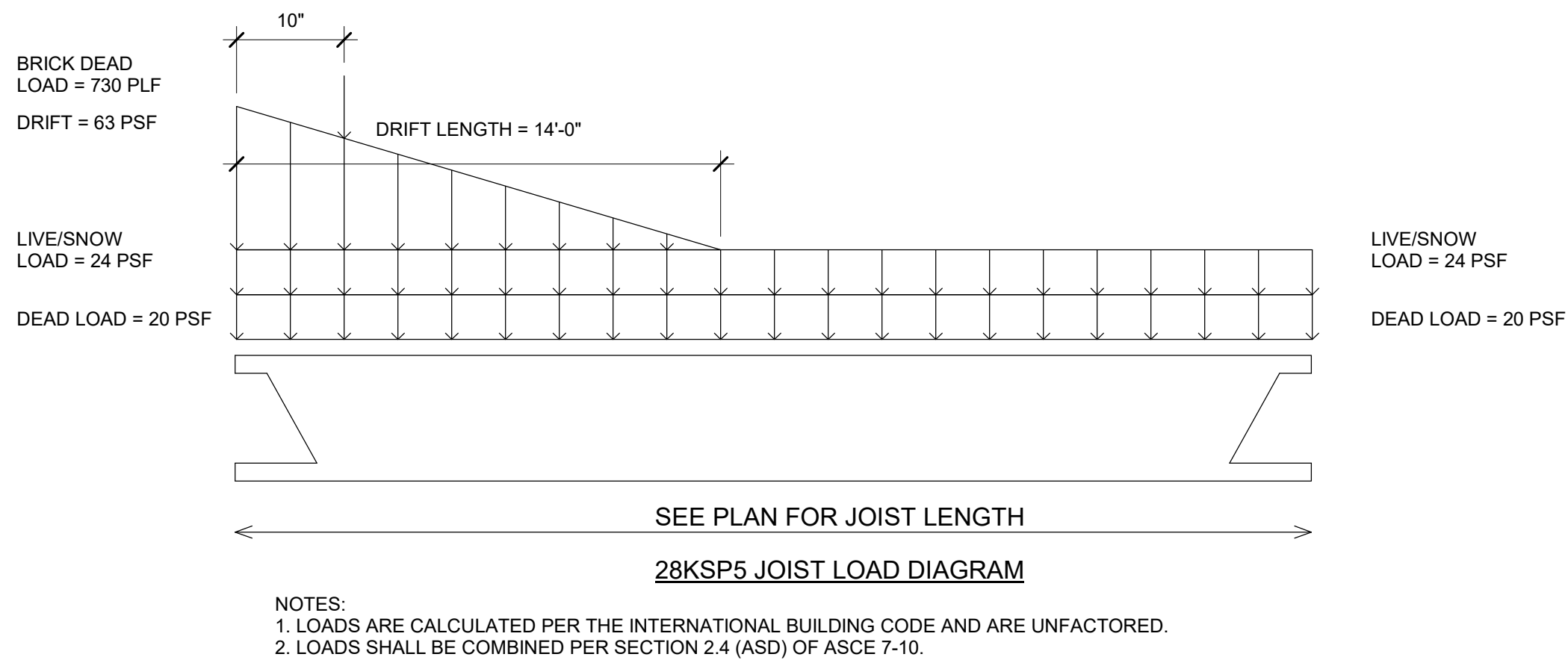
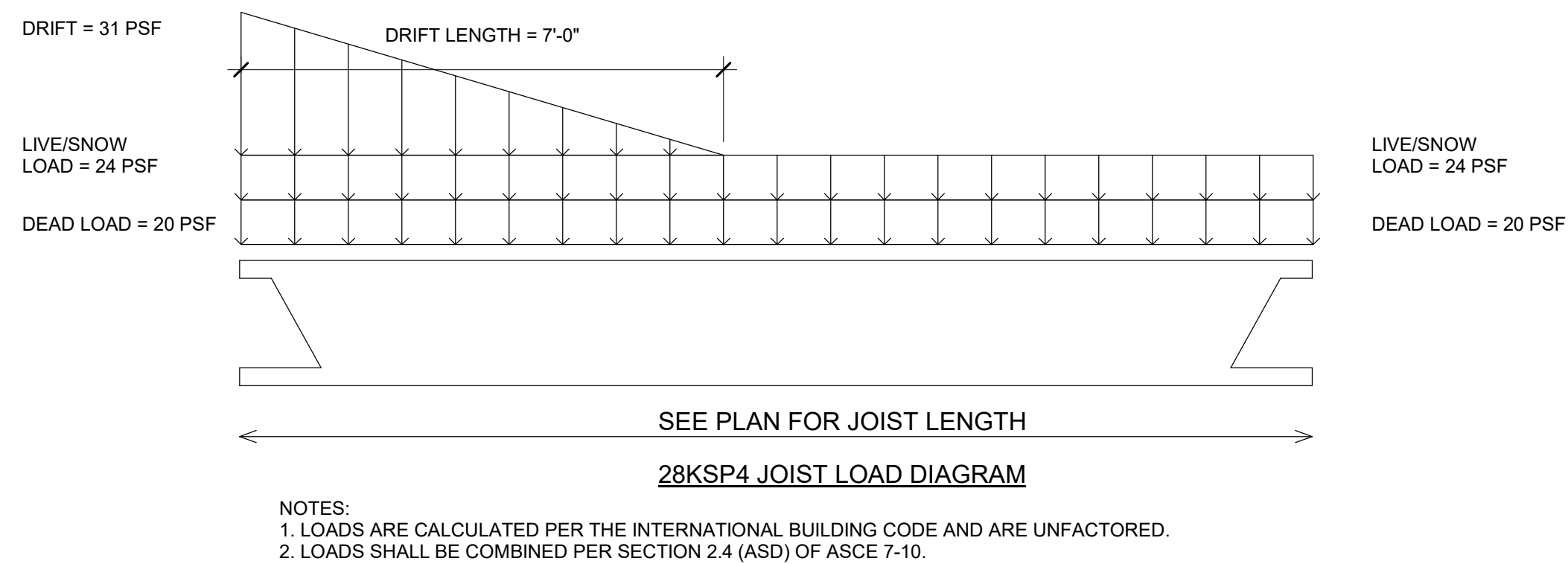
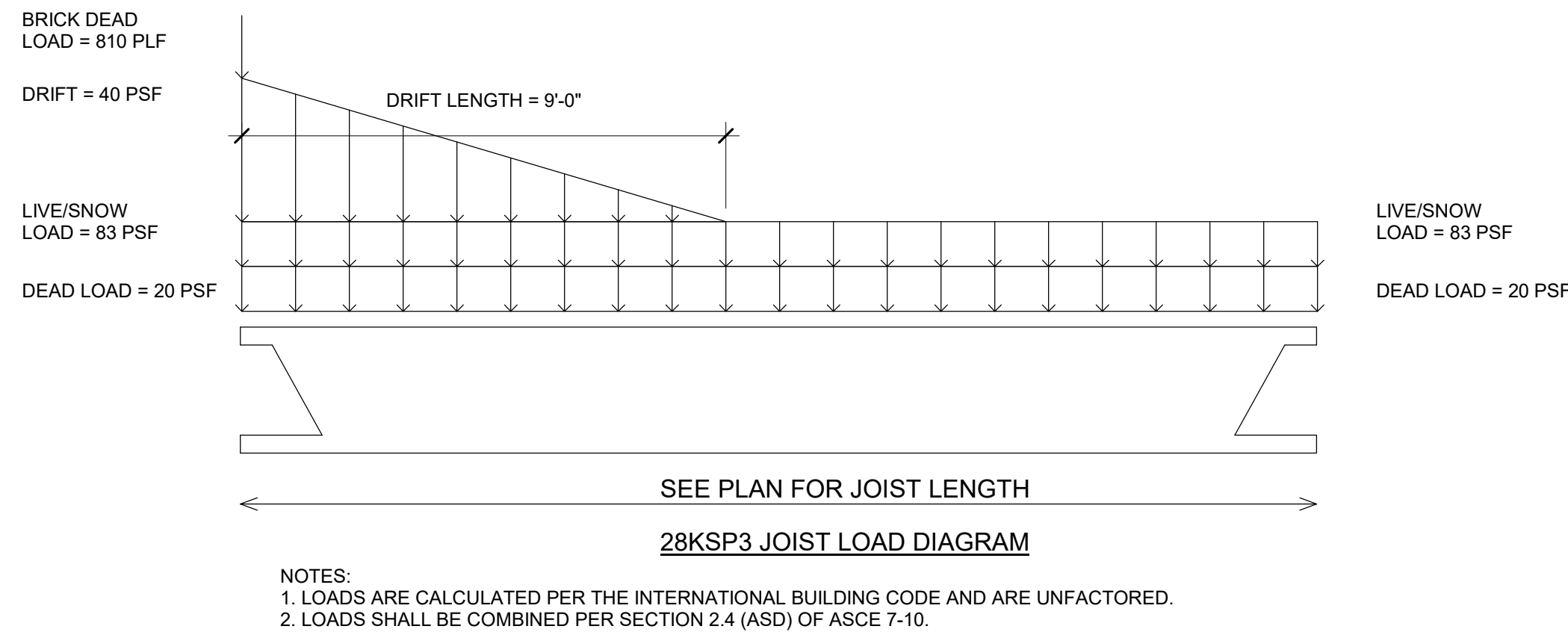
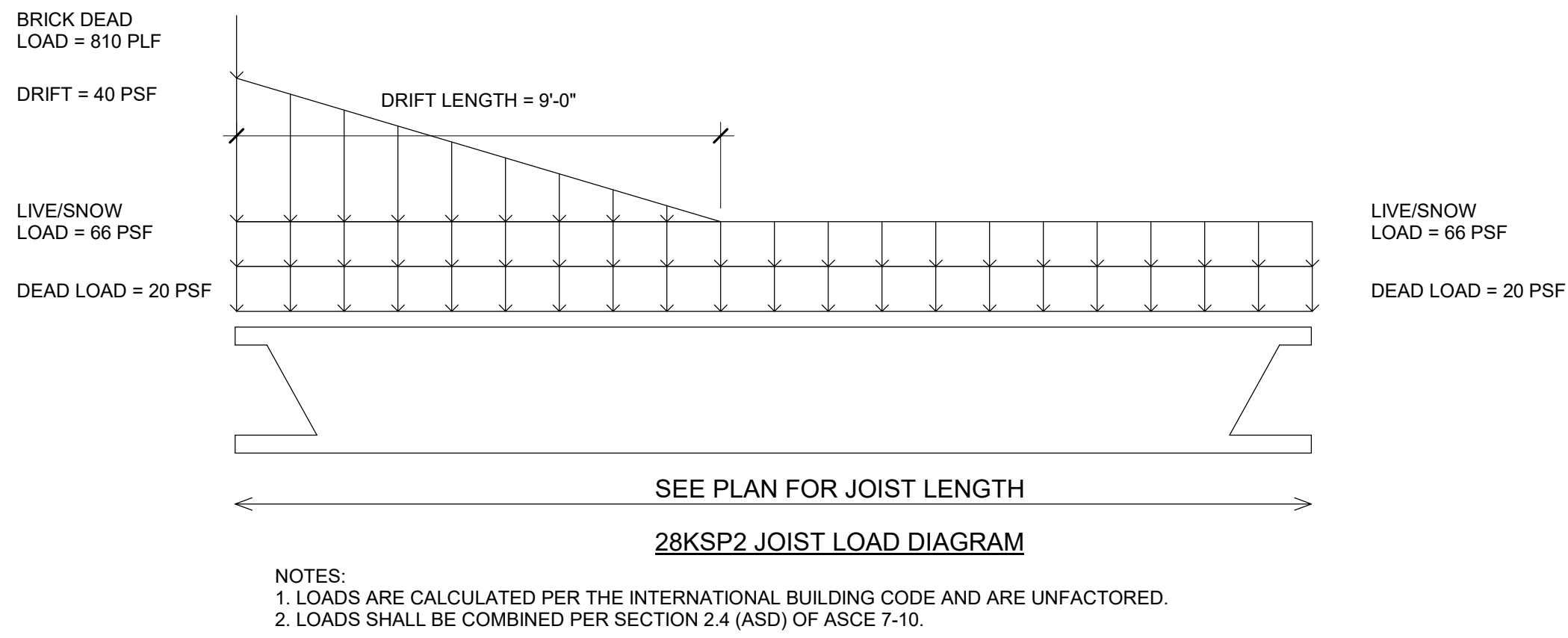
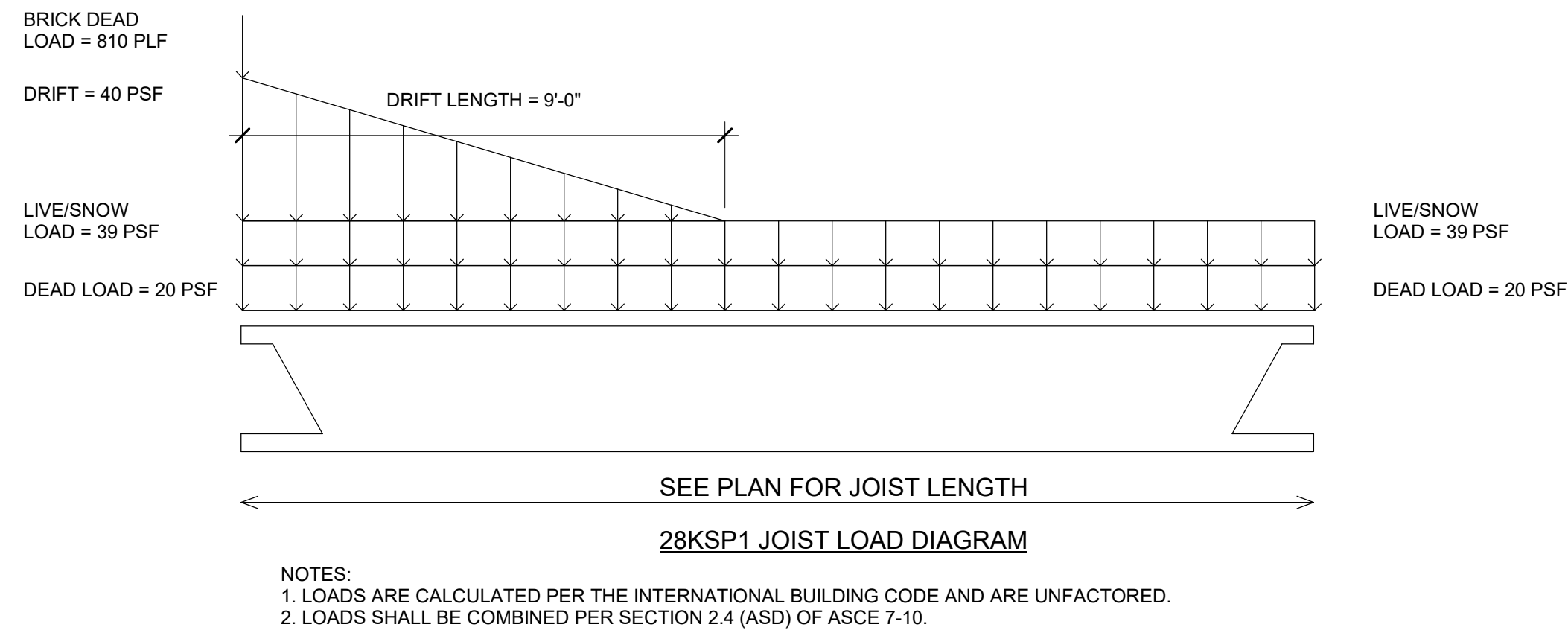
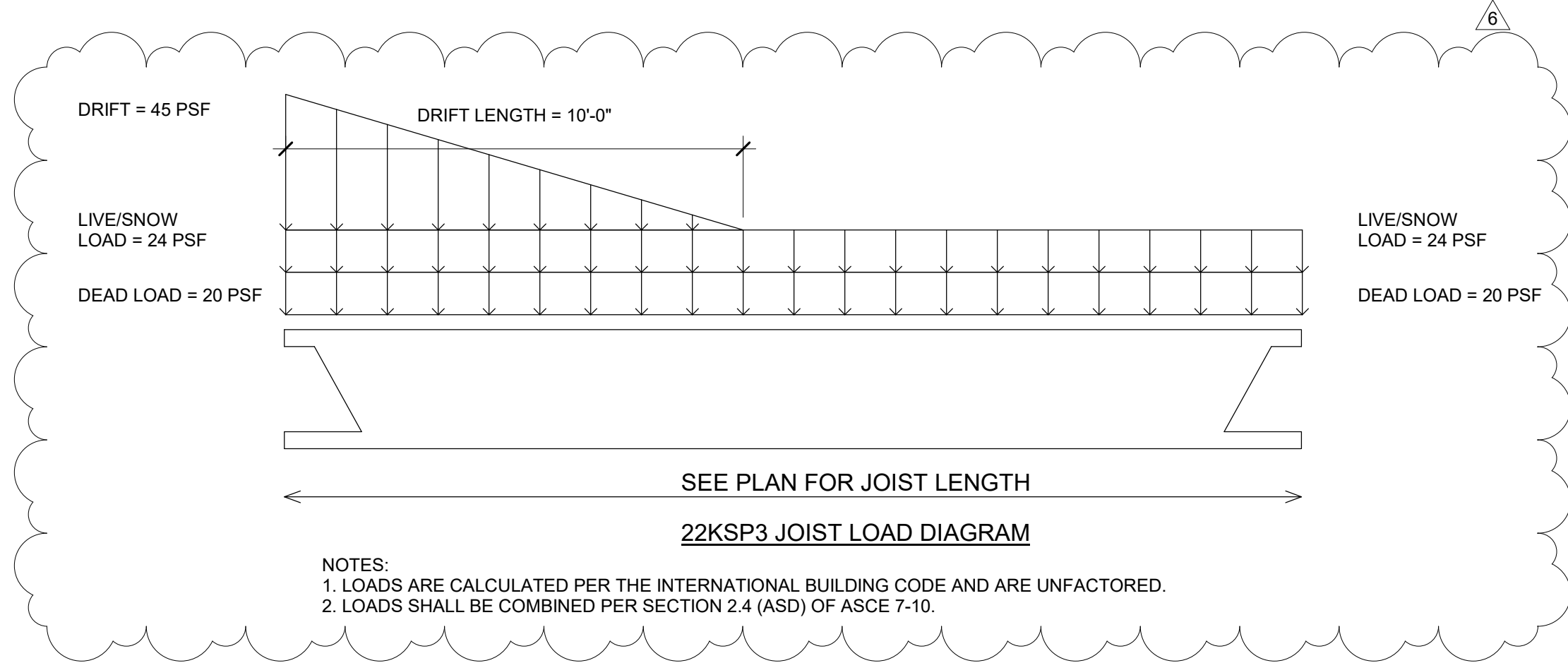
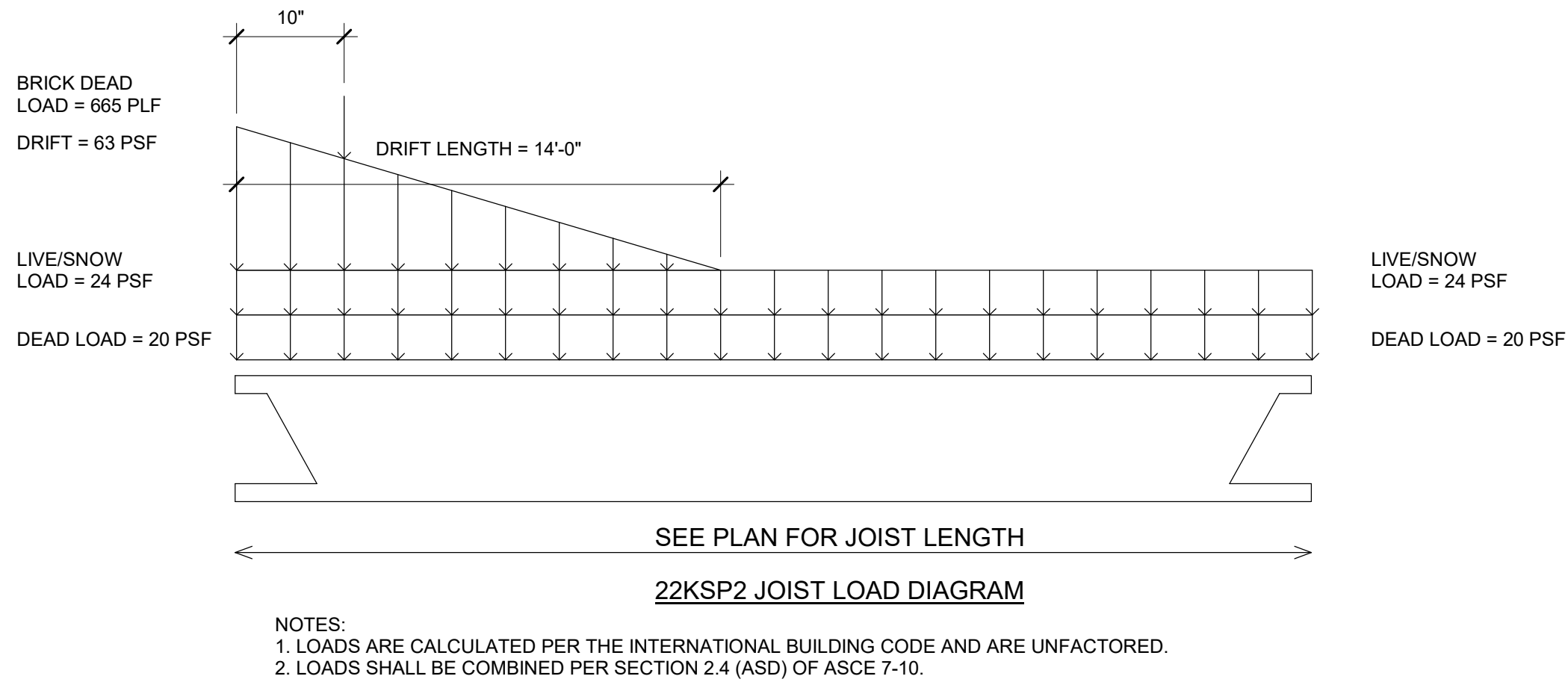
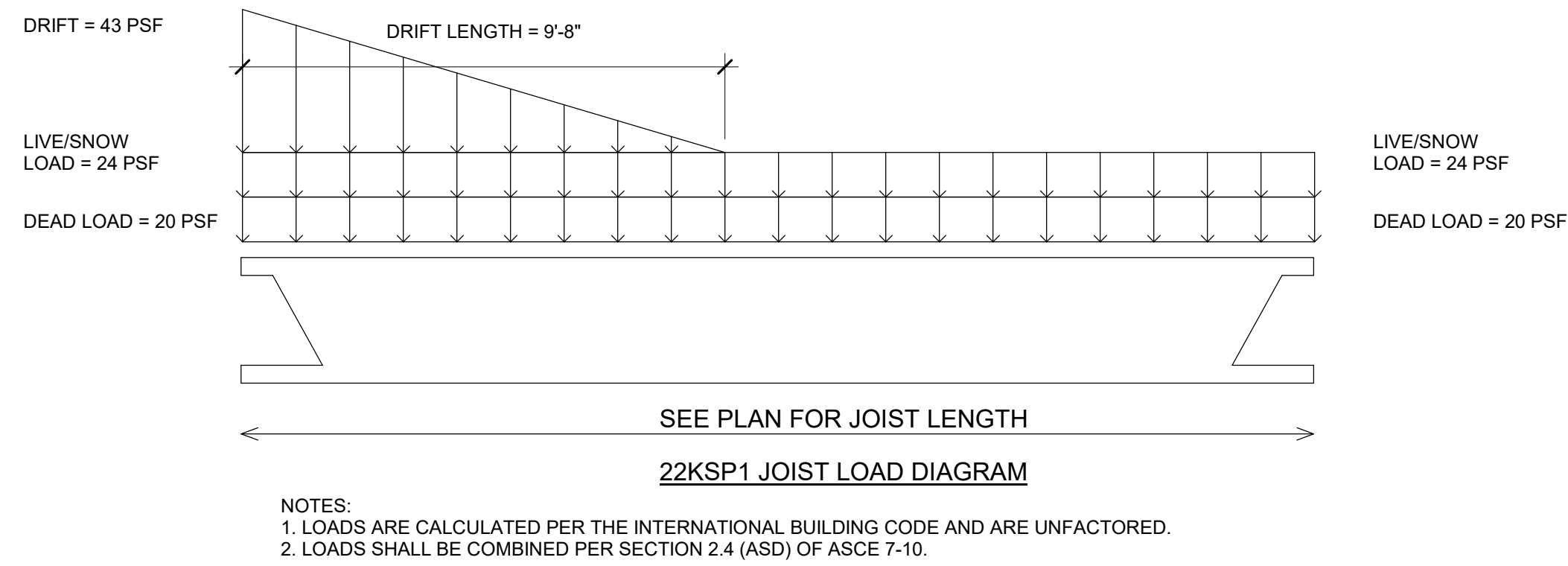
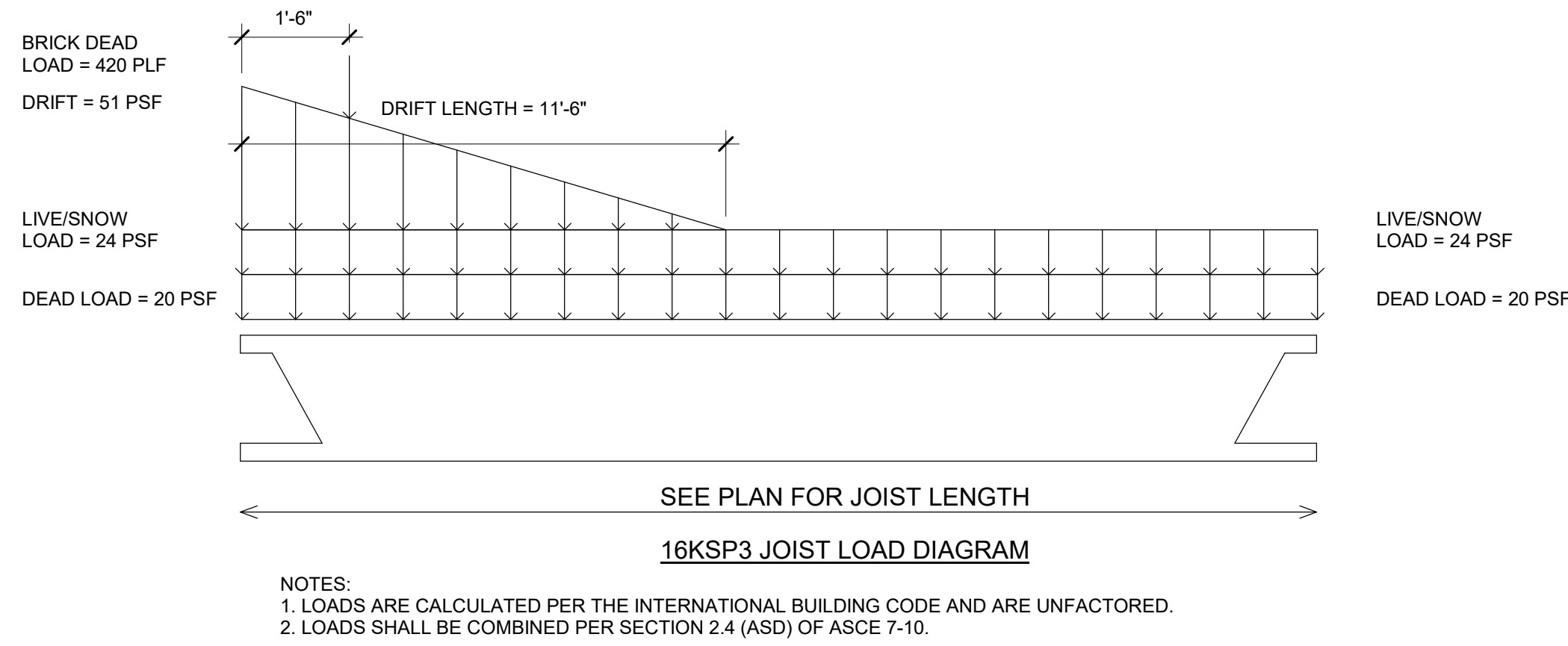
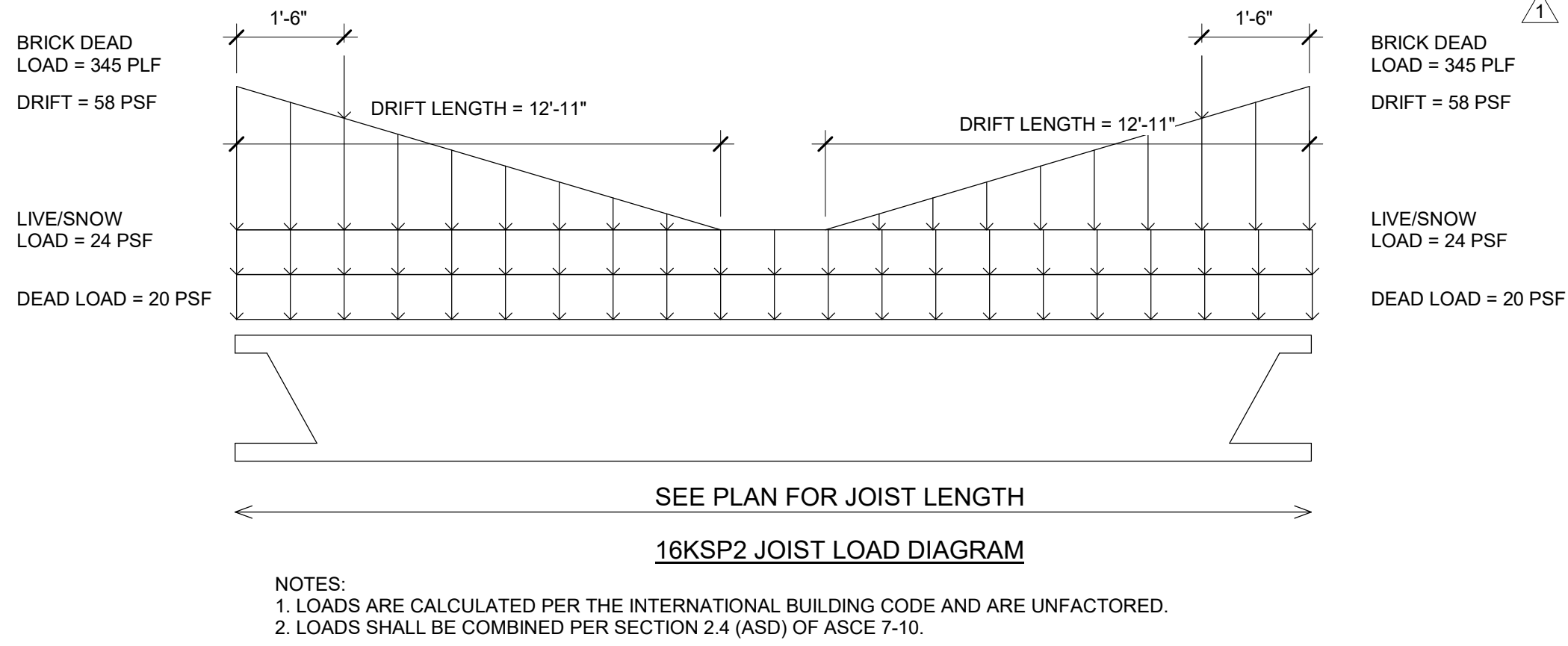
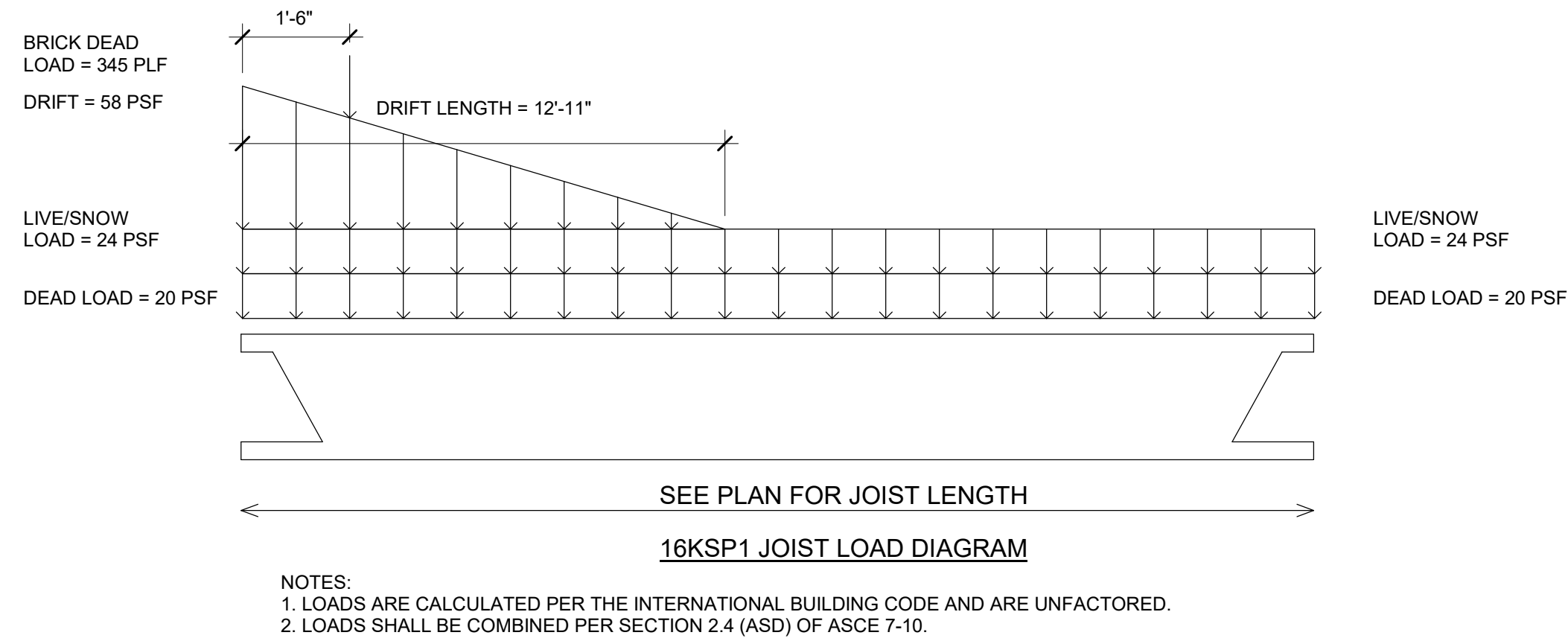
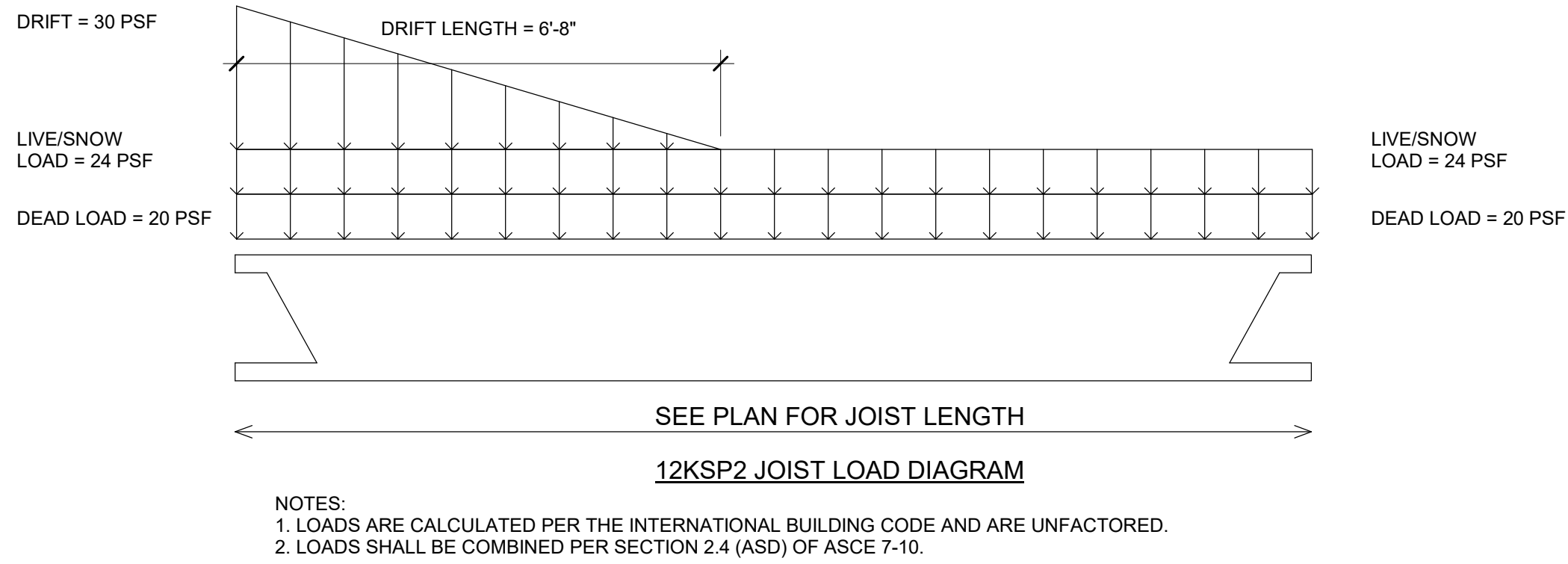
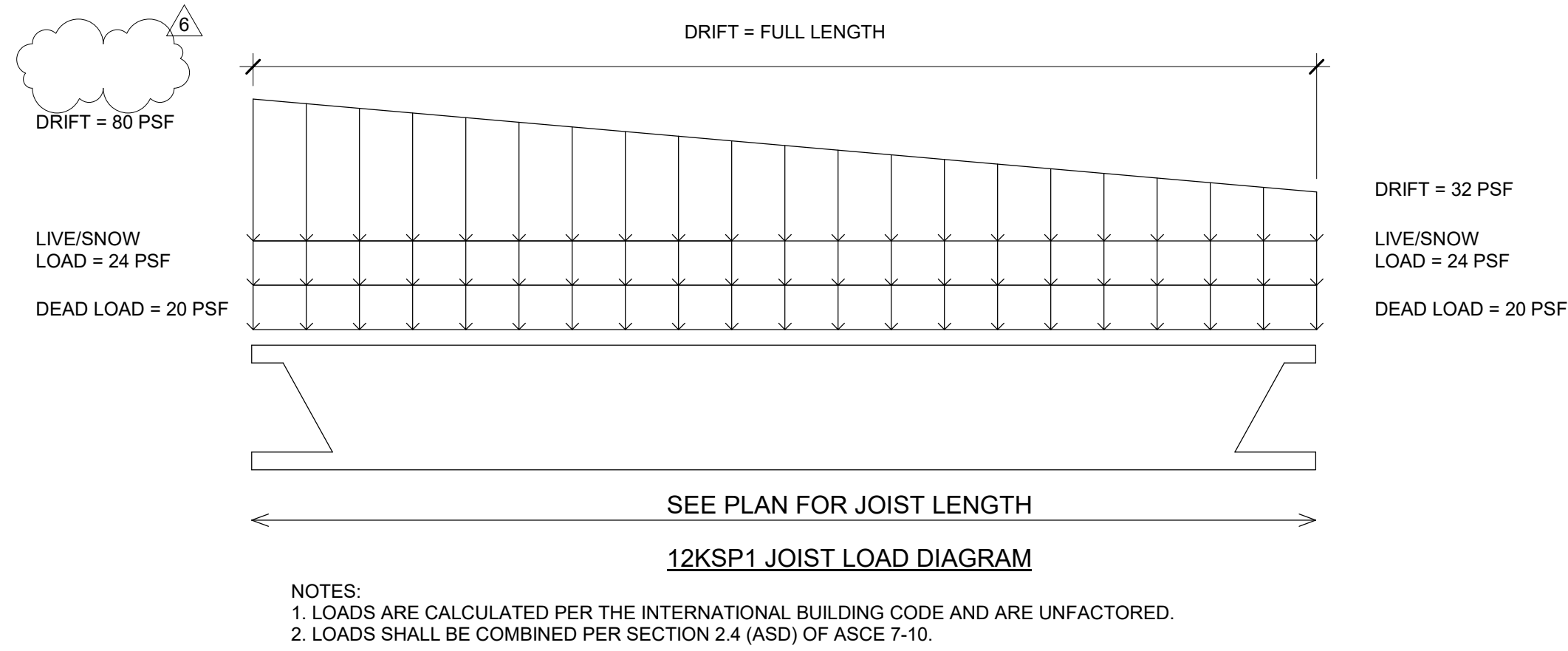
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I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.  
LICENSE NUMBER: 51768, EXPIRATION DATE: 11/21/2021

| Revisions: |            |             |
|------------|------------|-------------|
| No.        | Date       | Description |
| 6          | 04/22/2020 | ADDENDUM #6 |

WAVERLEY ELEMENTARY  
SCHOOL REPLACEMENT

FREDERICK COUNTY PUBLIC SCHOOLS

|               |                       |                |
|---------------|-----------------------|----------------|
| Job No.       | C018.0159.00          | Drawn          |
| Scale         | 1" = 1'-0"            | SAP            |
| Date          | 03/16/2020            | BLP            |
| Drawing Title | ROOF FRAMING SECTIONS | Drawing Number |
| Sheet         | S4.7                  | OF             |



KEY PLAN:

KEYNOTES LISTED ON THIS SHEET ARE FOR CONVENIENCE ONLY. REFER TO SHEET CS.2 FOR COMPLETE LIST

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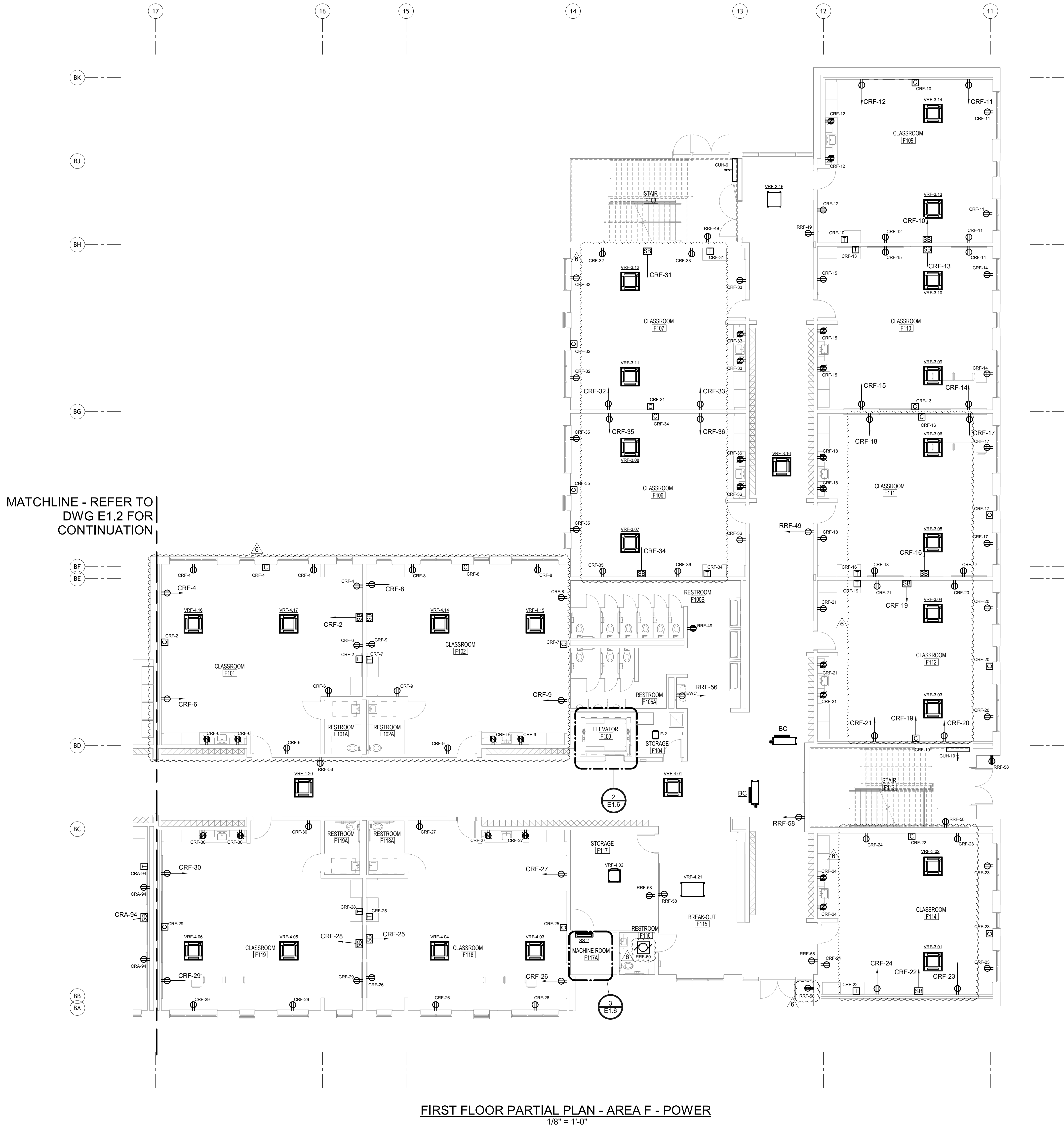
I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A QUALY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.  
LICENSE NUMBER: 51796, EXPIRATION DATE: 11/21/2021

| Revisions: |            |             |
|------------|------------|-------------|
| No.        | Date       | Description |
| 1          | 04/01/2020 | ADDENDUM #1 |
| 6          | 04/22/2020 | ADDENDUM #6 |

WAVERLEY ELEMENTARY  
SCHOOL REPLACEMENT

FREDERICK COUNTY PUBLIC SCHOOLS

|               |                        |                |
|---------------|------------------------|----------------|
| Job No.       | C018.0159.00           | Drawn          |
| Scale         | 3/4" = 1'-0"           | SAP            |
| Date          | 03/16/2020             | BLP            |
| Drawing Title | JOIST LOAD<br>DIAGRAMS | Drawing Number |
| Sheet         | S5.1                   | Of             |

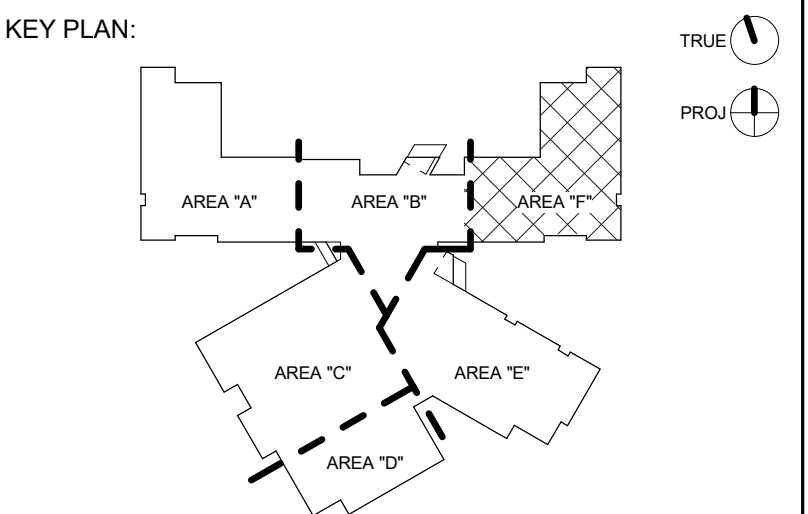


#### GENERAL NOTES:

1. ALL RECEPTACLES SHALL BE TAMPER RESISTANT TYPE, EXCEPT WHERE LOCATED IN PRIVATE OFFICES, KITCHEN, STORAGE, MECHANICAL/ELECTRICAL ROOMS AND RECEPTION AREAS.
2. REFER TO MECHANICAL EQUIPMENT SCHEDULES ON DWG E7.6 FOR ADDITIONAL INFORMATION.
3. REFER TO TELECOMMUNICATION DRAWINGS FOR COORDINATION BETWEEN POWER AND DATA BOXES.
4. CONNECT EACH **BC** BOX ON THIS PLAN TO NEAREST **VRE** UNIT VIA (2)#12 +#125W-3/4".

#### DRAWING NOTES:

1. GFIWP DUPLEX RECEPTACLE SHALL BE MOUNTED 2'-6" ABOVE BOTTOM OF ELEVATOR PIT AND 2'-6" BELOW THE TOP OF THE SHAFT.
2. CONNECT TO ELEVATOR LIGHTS SHOWN ON SHEET E2.1.
3. PROVIDE 3P-30A-F/SS (FUSED AT 20A) FOR ELEVATOR RECEPTACLE DISCONNECT.
4. PROVIDE 3P-30A-F/SS (FUSED AT 20A) FOR ELEVATOR LIGHTING DISCONNECT.
5. ELEVATOR CONTROL SWITCH (EATON)\*\*  
SS-3.11UR27-45-F11" - N/A  
\*\*COORDINATE WITH FIRE ALARM MANUFACTURER AND PROVIDE ALL INTERCONNECTIONS AS REQUIRED  
\*\*COORDINATE WITH ELEVATOR MANUFACTURER PRIOR TO ORDERING. COORDINATE INSTALLATION AND INTERCONNECTIONS WITH ELEVATOR MANUFACTURER'S RECOMMENDATIONS.
6. RADIANT HEATER PANELS: 120V, 1ph, 375W. PROVIDE WITH MANUAL MOTOR STARTER WITH PILOT LIGHT.



KEYNOTES LISTED ON THIS SHEET ARE FOR CONVENIENCE ONLY. REFER TO SHEET CS.2 FOR COMPLETE LIST

SCALE OF FEET  
1/8" = 1'-0"

ISSUED FOR PERMIT

**ALBAN**  
ENGINEERING, INC.  
303 INTERNATIONAL CIRCLE,  
SUITE 400  
HUNT VALLEY, MD 21030  
410.342.5411  
WWW.ALBANENGINEERING.COM  
P.N. 18053

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**W|O**  
GWVO INC.  
800 WYMAN PARK DRIVE, SUITE 300  
BALTIMORE, MARYLAND 21211, 410.350.1909

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LICENSE NUMBER: 45831, EXPIRATION DATE: 06/03/2020

| Revisions: |            |             |
|------------|------------|-------------|
| No.        | Date       | Description |
| 5          | 04/12/2020 | ADDEND. 5   |
| 6          | 04/20/2020 | ADDEND. 6   |

**WAVERLEY ELEMENTARY  
SCHOOL REPLACEMENT**

FREDERICK COUNTY PUBLIC SCHOOLS

|               |                                   |       |          |
|---------------|-----------------------------------|-------|----------|
| Job No.       | #18045                            | Alban | Drawn    |
| Scale         | As indicated                      | Alban | Checked  |
| Date          | 03/16/2020                        | GWD   | Approved |
| Drawing Title | FIRST FLOOR PLAN - AREA F - POWER |       |          |
| Sheet         | E1.6                              |       |          |

