SCHOOLEY CALDWELL

ARCHITECTURE. INSPIRED.

October 4, 2024 SCA 24140.00

ADDENDUM NO. 1

To the Contract Documents for:

MIFFLIN HIGH SCHOOL ROOF REPLACEMENT
3245 Oak Spring Street,
Columbus, OH 43219

TO ALL BIDDERS:

This Addendum supplements and amends the original Bidding Documents, shall be taken into account in preparing bids, and shall become a part of the Contract Documents.

The following documents are a part of and are issued with this Addendum and are attached to this Addendum.

Table of Contents
Notice to Bidders
Bid Form
Answers to Bidders Questions
Pre-Bid Meeting Sign-in Sheet
Pre-Bid Conference Agenda

The following drawings are issued with this Addendum:

AD101
A101
A400
A401
A402

The following revised specifications are issued with this Addendum:

Section 01 11 00 Summary of Work
Section 07 01 50 Preparation for Re-Roofing
Section 07 53 00 Elastomeric Sheet Roofing
Section 09 91 00 Painting (New)

Bidding Requirements

ITEM 1 TABLE OF CONTENTS

Document has been revised.

ITEM 2 DOCUMENT – NOTICE TO BIDDERS

Document has been revised.

ITEM 3 DOCUMENT – BID FORM

Document has been revised.

300 Marconi Boulevard
Columbus, Ohio 43215

T 614 628.0300
F 614 628.0311

schooleycaldwell.com

ITEM 4 DOCUMENT – PRE-BID MEETING SIGN IN SHEET

Document has been added.

ITEM 5 DOCUMENT – PRE-BID CONFERENCE AGENDA

Document has been added.

Specifications

ITEM 6 SECTION 01 11 00 – SUMMARY OF WORK

Section has been revised.

ITEM 7 SECTION 07 01 50 - PREPARATION FOR RE-ROOFING

Section has been revised.

ITEM 8 SECTION 07 53 00 – ELASTOMERIC SHEET ROOFING

Section has been revised.

ITEM 9 SECTION 09 91 00 – PAINTING

Section has been added.

Drawings

ITEM 10 SHEET AD101 – ROOF DEMOLITION PLAN

Sheet has been revised

ITEM 11 SHEET A101 – ROOF PLAN

Sheet has been revised

ITEM 12 SHEET A400 – EXTERIOR DETAILS

Sheet has been revised.

ITEM 13 SHEET A401 – EXTERIOR DETAILS

Sheet has been revised.

ITEM 14 SHEET A402 – EXTERIOR DETAILS

Sheet has been revised.

END OF DOCUMENT

DOCUMENT 00 01 10

TABLE OF CONTENTS

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

NOTICE TO BIDDERS

Electronic Bids will be received by the Board of Education of the City School District of the City of Columbus, Ohio, (the "School District Board"), at the Office of Capital Improvements ***(via Public Purchase)*** for the following Project:

CCS Project No.25003 – Roof Replacement at Mifflin High School

Mifflin High School
546 Jack Gibbs Boulevard
Columbus, Ohio 43215

Franklin County

in accordance with the Drawings and Specifications prepared by:

Schooley Caldwell Associates
300 Marconi Boulevard, Suite 100
Columbus, Ohio 43215
Telephone 614-628-0300

Prospective Vendors:
The District is soliciting bids for **CCS Project No. 25003 – Roof Replacement at Mifflin High School**. If your company meets our qualifications, please use the following link to access the bid: http://www.publicpurchase.com/gems/browse/home

The "Select Region" and "Select Agency" icons in the mid to upper, right corner of the screen must be used to locate our District before viewing our bids.

Please register in Public Purchase even if you are not interested in this particular bid. (If you register in Public Purchase under a commodity and we select that commodity when creating a bid, you will receive an automatic notification.)
Please note the following:

- Registration on the Public Purchase website is free.
- For your initial registration with Public Purchase, it will take Public Purchase about an hour to process. Please allow time for this processing after you register.
- If you have questions about the bid, please submit them using the Public Purchase system. Please do not call our offices with questions.
- Additional guidelines for using Public Purchase can be found on the District's website using the following link: http://www.ccsoh.us/Vendors.aspx

All bids must be submitted to Public Purchase. We cannot accept any faxed or e-mailed bids.

Electronic Bids will be received for:

Base Bid:	**Estimates:**
Roof Replacement at Mifflin HS:	$2,400,000.00

Unit Prices:
Replace Tectum Plank
Roof Drain ~~Rodding~~Snaking
Replace Damaged Urethan Insulation Bonded to Composite Tectum Decks

until **Tuesday, October 15, 2024 at 10:00 a.m.,** when they will be opened and **posted publicly to the District website immediately thereafter.**

A **virtual pre-bid meeting** will be held on **Wednesday, September 25, 2024, at 10:00 a.m**. at the following link/location:

https://ccsoh-us.zoom.us/j/86055663648?pwd=Yn1nlBO6dceLa6YulFz363Bm4bLQDc.1
Meeting ID: 860 5566 3648
Passcode: 740784
To join by phone use the following:
+1 646 558 8656

A **virtual bid evaluation meeting** will be held on **Friday, October 18, 2024, at 10:00 a.m**. Link will be sent to apparent low bidder after bid opening.

Plans and Specifications may be secured at the bidder's expense plus shipping costs from Franklin Imaging, 500 Schrock Road, Columbus, OH 43229, (T) 614-885-6894 or printroom@franklinimaging.com. Public inspection may be made at the City of Columbus Plan Room – operated by the Ohio Business Development Center, 1393 East Broad Street- Suite 104, Columbus, OH 43203, Office: 614-645-5663, Cell: 912-290-2122, Office Hours: Monday & Wednesday 1:00-4:00pm. **Project information may be viewed at Dodge Data & Analytics at:** http://dodgeprojects.construction.com/ and The Builders Exchange, 9555 Rockside Road, Suite 300, Valley View, OH 44125 if you are a member.

Inquiries concerning these plans and specifications shall be directed in writing to Melinda Shah with Schooley Caldwell Associates; Office PH 614-628-0300 or mshah@schooleycaldwell.com . Any written addendum will be sent to all plan holders. A bid guaranty and contract bond meeting the requirements of Section 153.571 of the Ohio Revised Code must accompany each bid. The Board of Education reserves the right to reject any or all proposals.

DOMESTIC STEEL USE REQUIREMENTS AS SPECIFIED IN SECTION 153.011 OF THE REVISED CODE APPLY TO THIS PROJECT. COPIES OF SECTION 153.011 OF THE REVISED CODE CAN BE OBTAINED FROM ANY OF THE OFFICES OF THE DEPARTMENT OF ADMINISTRATIVE SERVICES.

Columbus City Schools has established an Outreach Program to increase participation of businesses designated as Local Economically Disadvantaged Enterprises (LEDE). The Board of Education (BOE) has established an aspirational goal of 20% participation by business designated as LEDE. Vendors are strongly encouraged to use a good faith effort to support the BOE in achieving the Districts LEDE participation goals. Additional information can be obtained by reviewing the BOE Community Inclusion Policy 6400 or by contacting the Outreach Department at outreachservices@columbus.k12.oh.us

BID FORM

Project Name: ***CCS Project No. 25003 – Roof Replacement at Mifflin High School***

Location of Project & County:
3245 Oak Spring Street – Columbus, Ohio 43219,
Franklin County

Contract Completion is ***August 1, 2025***.

Having read and examined the Contract Documents, including without limitation the Drawings and Specifications, prepared by the Architect for the above-referenced Project, and the following Addenda:

Addendum Number	Date of Receipt
_____	_____
_____	_____
_____	_____

The undersigned Bidder proposes to perform all Work for the applicable Contract(s), in accordance with the Contract Documents, for the following sum(s):

ITEM 1. GENERAL TRADES CONTRACT FOR ROOF REPLACEMENT

ALL LABOR AND MATERIALS, for the sum of $_____

Sum in words: _____

ITEM 2. UNIT PRICES

Description	Unit Prices	Measure	Quantity	Extension
Unit Price U-1: Replace Tectum Plank.	**$_____/**	**SF**	**750**	**$_____**
Unit Price U-2: Roof Drain ~~Rodding~~Snaking $_____	**$_____/**	**EA**	**39**	
Unit Price U-3: Replace damaged urethane insulation bonded to composite Tectum decks	**$_____/**	**SF**	**250**	**$_____**

BIDDER'S CERTIFICATION

The Bidder hereby acknowledges that the following representations in this Bid are material and not mere recitals:

1. The Bidder has read and understands the Contract Documents and agrees to comply with all requirements of the Contract Documents, regardless of whether the Bidder has actual knowledge of the requirements and regardless of any statement or omission made by the Bidder which might indicate a contrary intention.

2. The Bidder represents that the Bid is based upon the Basis of Design and Acceptable Components specified by the Contract Documents.

3. The Bidder acknowledges that all Work shall be completed in the Contract Time, and that each applicable portion of the Work shall be completed upon the respective Milestones, unless an extension of time is granted in accordance with the Contract Documents.

4. The Bidder has visited the Site, become familiar with local conditions and has correlated personal observations with the requirements of the Contract Documents. The Bidder has no outstanding questions regarding the interpretation or clarification of the Contract Documents.

5. During the performance of the Contract, the Bidder agrees to comply with OAC Chapters 123:2-3 through 123:2-9 and agrees to incorporate the monthly reporting provisions of OAC Section 123:2-9-01 into all subcontracts on the Project, regardless of tier. The Bidder understands the State Equal Opportunity Division may conduct pre-award and post-award compliance reviews to determine if the Bidder maintains nondiscriminatory employment practices, maintains an affirmative action program and is exerting good faith efforts to accomplish the goals of the affirmative action program. For a full statement of the rules regarding Equal Employment Opportunity in the Construction Industry, see OAC Chapters 123:2-1 through 123:2-9.

6. The Bidder and each person signing on behalf of the Bidder certifies, and in the case of a Bid by a joint venture each member thereof certifies as to such member's entity, under penalty of perjury, that to the best of the undersigned's knowledge and belief: (a) the Base Bid, any Unit Prices and any Alternate bid in the Bid have been arrived at independently without collusion, consultation, communication or agreement, for the purpose of restricting competition as to any matter relating to such Base Bid, Unit Prices or Alternate bid with any other Bidder; (b) unless otherwise required by law, the Base Bid, any Unit Prices and any Alternate bid in the Bid have not been knowingly disclosed by the Bidder and shall not knowingly be disclosed by the Bidder prior to the bid opening, directly or indirectly, to any other Bidder who would have any interest in the Base Bid, Unit Prices or Alternate bid; (c) no attempt has been made or shall be made by the Bidder to induce any other Person to submit or not to submit a Bid for the purpose of restricting competition.

7. The Bidder shall execute the Contract Form with the School District Board, if a Contract is awarded on the basis of this Bid, and if the Bidder does not execute the Contract Form for any reason, other than as authorized by law, the Bidder and the Bidder's Surety are liable to the School District Board as provided in Article 6 of the Instructions to Bidders.

8. The Bidder certifies that the upon the execution of the Contract Form, the Contractor shall be enrolled in good standing in the Ohio Bureau of Workers' Compensation ("OBWC") Drug-Free Workplace Program ("DFWP") or an OBWC-approved DFWP throughout the entire Project, in accordance with ORC Section 153.03 – 153.031, including placement of its employees in a pool with a random drug testing rate of at least 5%. The Bidder acknowledges the responsibility to require all Subcontractors to be enrolled in good standing in the OBWC DFWP or an OBWC-approved DFWP that meets the

requirements specified in ORC Section 153.03 – 153.031, including placement of its employees in a pool with a drug testing rate of at least 5%, prior to the Subcontractor providing labor at the Site.

9. The Bidder agrees to furnish any information requested by the School District Board or the Architect to evaluate the responsibility of the Bidder.

10. The Bidder agrees to furnish the submittals required by paragraph 7.3 of the Instructions to Bidders for execution of the Contract Form within ten (10) days of the date of the Notice of Intent to Award.

11. The Bidder represents that the Bidder is not subject to a finding for recovery under ORC Section 9.24 or that Bidder has taken the appropriate remedial steps required under ORC Section 9.24 or otherwise qualifies under this section.

12. The Bidder acknowledges that, by signing the Bid Form on the Bidder Signature and Information Form on the following page, it is signing the actual Bid and when submitted as a part of its bid packages, shall serve as the Bidder's authorization for the further consideration and activity in the bidding and contract process.

13. The Bidder has included with this Bid the following required documents:

    a. Bid Form

    b. Bid Guaranty and Bid Bond

    c. LEDE Community Inclusion Forms

    d. Power of Attorney

Each Bid shall contain the name of every individual interested therein. If the Bidder is a corporation, partnership, sole proprietorship, or limited liability corporation, an officer, partner or principal of the Bidder, as applicable, shall print or type the legal name of the Bidder on the line provided and sign the Bid Form. If the Bidder is a joint venture, an officer, partner or principal, as applicable, of each member of the joint venture shall print or type the legal name of the applicable member on the line provided and sign the Bid Form. All signatures must be original.

BIDDER SIGNATURE AND INFORMATION

BIDDER'S NAME (PRINT): _____

Authorized Signature: _____

Title: _____

Company Name: _____

Mailing Address: _____

_____

Telephone Number: (_____) _____ Facsimile Number (_____)_____

Where Incorporated: _____ Type of Business (circle one):

corporation partnership sole proprietorship limited liability corporation

Federal ID Number: _____

Contact person for
Contract processing: _____

Partnership or Joint Venture

BIDDER'S NAME (PRINT): _____

Authorized Signature: _____

Title: _____

Company Name: _____

Mailing Address: _____

_____

Telephone Number: (_____) _____ Facsimile Number (_____)_____

Where Incorporated: _____ Type of Business (circle one):

corporation partnership sole proprietorship limited liability corporation

Federal ID Number: _____

Contact person for
Contract processing: _____

744693v2

SCHOOLEY CALDWELL

ARCHITECTURE. INSPIRED.

October 4, 2024 SCA 24140.00

MIFFLIN HIGH SCHOOL ROOF REPLACEMENT
COLUMBUS CITY SCHOOLS
3245 Oak Spring Street
Columbus, OH 43219

ANSWERS TO BIDDERS' QUESTIONS – ADDENDUM 1

1. The roofing specifications call for 25 PSI polyisocyanurate insulation, does the tapered need to be 25 PSI, since we are now using 1/2" HD ISO? *25 psi insulation has been deleted; replacement insulation in areas of roofing to be replace down to tectum may be 20 psi.*
2. The existing coping face is 7.5" with adding 1 nailer, the face will be 9" (large), do you want the new coping to have a 9" face, may need to be thicker metal, or do you want a fascia extender (2pcs face)? *Metal Era offers Perma-Tile Gold Coping with tested face dimension up to 12 inches in 0.063 thick metal. Or Perma-Tite Continuous Cleat coping has 12 inch texted face in 0.063 aluminum.* Coping is to be one-piece of minimum 0.063 aluminum thickness.
3. Specifications and plans call for 1/2" HD ISO on parapet walls, the roof manufacturers, require Plywood, Dens-Deck Prime, or similar? *Back of parapet walls will be 3/4 inch plywood.*
4. In summary of work Section 01 11 00 new plywood sheathing under the asphalt shingle roof in is mentioned. IS this correct? *No, existing plywood/OSB underlayment is to remain.*
5. Could we get the contact information for their preferred vendors familiar with the facilities, such as plumbers, electricians, HVAC, and glazers, if they have one for the sawtooth windows? *Columbus City Schools does not have preferred vendors/contractors.*
6. Is it possible to get some photos of what is under the sawtooth, for the workspace as well of the drain piping, for plumber access? I am concerned the plumbers may be concerned about bidding blindly. *Yes, photos will be available in addendum.* There is no guarantee that every gutter has a ceiling grid below it.
7. Please explain if there is masonry restoration work to take place, and if so provide quantities. *There is no masonry work to be performed on the project. Section 04 01 40 has been deleted.*
8. Please provide quantities of desired work for the 05 50 00 Metal Fabrication spec. *There are steel angles associated with roof infill areas as detailed on the drawings.*
9. Is there any fall protection equipment such as railings or cable/davit/anchor systems required? *No fall protection is required.*
10. Please provide locations and quantities of work required for 09 96 00 High Performance Coatings Where painting is indicated above roof, use Section 09 96 00. *Underside of tectum will be painted in some conditions where it is exposed. Section 09 91 00 – Painting will be added for this condition.*
11. On the shaded areas of wet insulation demo on AD101, can the documents be clarified for the bidders to carry an exact square footage such as 2,850 SF in our bids per the PEMCO report? This would ensure that bids are equal amongst the bidders. *Yes, we will establish a baseline area . Adjustment above or below this amount will be by unit price.*

300 Marconi Boulevard
Columbus, Ohio 43215

T 614 628.0300
F 614 628.0311

schooleycaldwell.com

12. In Section 07 71 00 – Roof Specialties 1.10 paragraph B, spec mentions a 120 mph wind warranty. Manufacturers will not give a 120 mph wind warranty with only 1" iso. *Wind warranty is offered by Metal Era is for the assembly as tested, and this is not to be interpreted that this is for the roofing system.*
13. Also, I believe in the spec sheet it mentions that all the sheathing under the shingles is to be replaced. I spoke to the architect and he said that also is not the case. *Existing sheathing is to remain and is not replaced.*
14. I never heard of drain rodding, before, it says rodding is using fiberglass or steel rods, to try to break through hard clogs, with ramming. Would you like unit pricing for Snaking as in Unit Price, or would you like rodding? *These terms are used interchangeably and mean the same thing. For consistency, the term 'rodding' where used in the text of the spec will be changed to 'snaking'.*
15. Was the URETHANE INSULATION BONDED TO COMPOSITE TECTUM DECK at the factory or applied in the field when the building was roofed? see photo attached. *From our investigation, we believe at the factory.*
16. Is the existing drain piping cast or PVC? *From our observation, typical drain is no-hub cast iron. Possibly of PVC at sawtooth gutter drains.*
17. No drain specification, is Zurn or similar, acceptable? *There are no new drains. Retrofit drains are specified in Section 22 14 16 – Roof Drains. Drains in the sawtooth gutters are to be removed and reinstalled.*
18. Is the bottom side of the Tectum exposed? Is it natural or painted? *Conditions vary, Where tectum is exposed, it will be indicated to be painted.*
19. Regarding Hydrovacing, do you want a dry vac or a wet vac? *Wet-vac*
20. The existing expansion joints are a raised curb, may we leave them raised, the detail shows a flat roof-to-roof style? *Flat roof expansion joint as detailed is required.*
21. The sawtooth gutter, is calling for 1/8" tapered fiberboard, we cannot adhere to tapered fiberboard, only mop too, can we use 1/8" tapered polyisocyanurate? *Yes*
22. The sawtooth gutter membrane is not called out, is EPDM acceptable? Yes, EPDM
23. The sawtooth gutter is approximately 122' long, drawing note, Roof membrane. No seams allowed in gutter, there have to be seams, the hole 122' will not be completed in 1 day and EPDM only comes in 100' roles? If you want we could use 6" seam tape instead of 3″? *A single joint at a high point away from drains is acceptable.*
24. Sawtooth batten in seam metal siding is needing to be cut and raised for new roof flashings, then new L shelf will need to be slipped, behind and then face fastened w/neoprene sealed washer, is this acceptable? *Yes if this is required to achieve an 8 inch clearance from the top of roof elevation to the bottom of the metal siding.*

END OF QUESTIONS

Roof Replacement at Mifflin High School

Project No. 25003

Capital Improvements

PRE-BID MEETING

September 25, 2024 - 10:00am

Sign In:

Name (Please Write Clearly)	Organization (Please Write Clearly)	E-Mail (Please Write Clearly)	Phone (Please Write Clearly)
Brandie Bronston Houpe	Capital Improvements	bbronston@columbus.k12.oh.us	380-997-7471
Lori Seeger	Capital Improvements	lseeger@columbus.k12.oh.us	380-997-7474
Melinda Shah	Schooley Caldwell Associates	mshah@schooleycaldwell.com	614-628-0300
Brian Kiggins	Schooley Caldwell Associates	bkiggins@schooleycaldwell.com	614-628-0300
Jeff Heidnik	RJK Roofing Solutions	Jeff.Heidnik@rjkco.com	440-478-0112
Jefrey Ficke	RJK Roofing Solutions	jef.ficke@rjkco.com	440-478-0112
Jeremy McKenzie	Harold J. Becker Roofing	jmckenzie@hjbecker.com	937-725-8664
Chad McLeish	Kalkreuth Roofing	cmcleish@krsm.net	304-232-8540
Jeremy Smith	Kalkreuth Roofing	jsmith@krsm.net	304-232-8540
Chris McNess	Kelley Brothers Roofing	ChrisMcNees@kbroof.com	513-829-7717
Allen Sturgill	A.H. Sturgill Roofing	ahs@sturgillroofing.com	937-254-2955
Jeremy Sturgill	A.H. Sturgill Roofing	jerremys@sturgillroofing.com	937-254-2955
Justin Sturgill	A.H. Sturgill Roofing	justins@sturgillroofing.com	937-254-2955
Jessica Phlipot	Command Roofing	jessica@commandroofing.com	937-298-1155
Kevin Harris	Command Roofing	info@commandroofing.com	937-298-1155
Chad Monnin	Command Roofing	info@commandroofing.com	937-298-1155
Greg Bush	Carlisle Syntec/Advanced Building Products	grbush@aadvanced.com	614-600-0259
Daniel Strause	Prodigy Building Solutions	dstrause@buildingprodigy.com	513-515-3199
Eric Groh	Prodigy Building Solutions	egroh@buildingprodigy.com	513-515-3199
Jim Parker	Chemcote Roofing	jparker@chemcote.com	614-989-3077
Chuck Bubenheim	Meade Construction	cbubenheim@meadeconstructioninc.com	419-566-9690
Gregory Hilling	General Maintenance & Engineering Company	ghilling@gmec1934.com	614-279-8611
Jordon Knoebel	Rooflynx	jordon@rooflynx.com	812-818-5969
George Piscopo	Burns & Scalo Roofing	piscopog@burns-scalo-oh.com	740-383-4639
Jake Hug	Progressive Roofing	Jake.Hug@progressiveus.com	614-852-9208
Fred Boldt	Progressive Roofing	Fred.Boldt@progressiveus.com	614-852-9208
Jacob Gasses	Cotterman & Company Inc.	jgasser@cottermanroofing.com	740-632-1076
Jonathan White	Revere Roofing	Jonathan@revereroofingcompany.com	740-392-9450

Columbus City Schools – Roof Replacement at Mifflin High School

Pre-Bid Meeting Agenda

September 25,2024
**Updates Highlighted in Yellow*

1. Welcome/Introductions to the Project Team
    a. ***Lori Seeger Project Manager*** – Columbus City Schools
    b. ***Alex Trevino, Facility Director*** – Columbus City Schools
    c. ***Brandie Bronston Houpe, Construction Contracts Manager*** – Columbus City Schools
    d. ***Melinda Shah, Project Manager*** – Schooley Caldwell Associates

2. Administrative Items
    a. Electronic bids shall be received until ***Tuesday, October 15, 2024 at*** **10:00 am** by Capital Improvements Office.
        i. Please use the following link to access the bid: http://www.publicpurchase.com/gems/browse/home
        ii. The "Select Region" and "Select Agency" icons in the mid to upper, right corner of the screen must be used to locate our District before viewing our bids.
        iii. Please register in Public Purchase even if you are not interested in this particular bid. (If you register in Public Purchase under a commodity and we select that commodity when creating a bid, you will receive an automatic notification.)
        iv. Please note the following:
            1. Registration on the Public Purchase website is free.
            2. For your initial registration with Public Purchase, it will take Public Purchase about an hour to process. Please allow time for this processing after you register.
            3. Additional guidelines for using Public Purchase can be found on the District's website using the following link: http://www.ccsoh.us/Vendors.aspx
        v. **All bids must be submitted to Public Purchase.** We ***cannot*** accept any in person, faxed, or e-mailed bids.
        vi. Pre-Bid RFI questions may to be submitted in ***written form*** via email to Melinda Shah at Schooley Caldwell Associates, Office PH 614-628-0300 or mshah@schooleycaldwell.com. Upon formal issuance to AOR, please email Project Manager, Lori Seeger at lseeger@columbus.k12.oh.us. Questions may also be submitted through Public Purchase.
        vii. Please note: **All RFIs will only be answered in the project Addenda. Questions submitted via Public Purchase will be answered on Public Purchase, and also answered in project Addenda.**
    b. Schooley Caldwell Associates shall respond to RFIs received more than **5** days before the bid opening. Deadline for RFIs is ***Monday, October 7, 2024 at 10:00am.***
        i. Please note: **All RFIs will only be answered in the project Addenda.**

c. LEDE & Workforce Participation
    i. Community Inclusion Program – Local and Economically Disadvantaged Enterprises

        1. LEDE Participation Goal is **20%** and Workforce Participation Goal is **25%**
        2. Community Inclusion forms will be required
        3. http://www.ccsoh.us/Vendors.aspx
            a. LEDE Vendor List
            b. LEDE Certification Affidavit Instructions
        4. Prime Contractors new to Columbus City Schools will be required to submit a Vendor Application prior to receiving a Purchase Order/Notice to Proceed. (check website www.ccsoh.us – navy top band, click on word - Vendors)

3. Project Overview
    a. Bid Package
        i. Single prime for all Work defined by the Contract Documents.
        ii. Schooley Caldwell Associates overview of project scope
        iii. Bid Form
            1. Base Bid
                a. Mifflin High School Roof Replacement
            2. Alternates - None
            3. Prevailing Wage Rates do ***NOT*** apply to this project.
        iv. Allowance: None at this time
        v. Unit Prices:
            1. Replace Tectum Plank
            2. Roof Drain Rodding
            3. Replace Damaged Urethan Insulation Bonded to Composite Tectum Decks
        vi. Addendum: None at this time
            1. Final addendum to be issued no later than ***Thursday, October 10, 2024 @ 10:00am*** via Franklin Imaging & Public Purchase
        vii. Estimates:
            1. Base Bid - $2,400,000.00
    b. General Information
        i. Any permits are to be secured by the Contractor.
        ii. Temporary Facilities – By the Contractor, may use school utilities if available.

4. Default Guideline Schedule
    a. 10/15/24 Electronic Bids Due to Public Purchase website (Prior to 10:00am)
    b. 10/18/24 Virtual Post Bid Review @ 10:00AM (Link will be sent following bid opening)
    c. 10/18/24 Bid Evaluation and Paperwork for Purchase Order due
    d. 11/06/24 Contract Approval – BOE Review
    e. 11/13/24 Notice to Proceed – PO Issued
    f. 6/03/25 Work on Site May Begin ***(Work can begin prior to this date)***
    g. 8/01/25 Substantial Completion

5. Ohio Bureau of Workers' Compensation (OBWC)/Drug Free Safety Program (DFSP)
    a. All prime contractors, subcontractors and lower-tier subcontractors are to be in good standing with the OBWC's DFSP or a comparable program approved by the OBWC that meets the requirements specified in O.R.C. Section 153.03.

6. Safety Precautions
    a. Each member of its jobsite workforce to complete an Occupational Safety and Health Administration (OSHA) 10 or 30 Hour Construction Course and have at least one Project supervisor to complete and OSHA 30 Hour Construction Course.

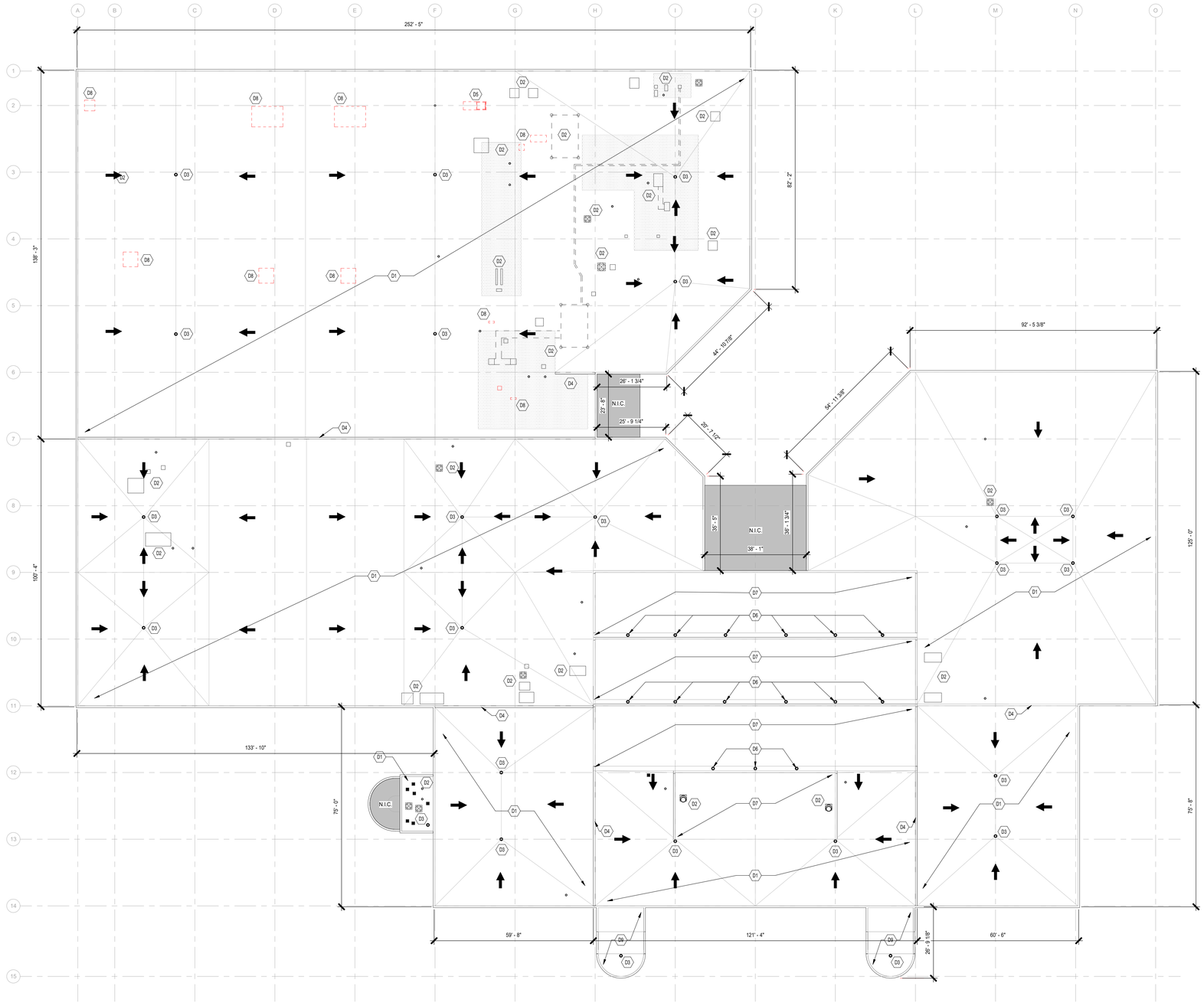
7. General Items
    a. Bid Documents
        i. Documents available for purchase at Franklin Imaging 614-885-6894 or printroom@franklinimaging.com or jeramy@franklinimaging.com
        ii. Documents are available to view for free via Public Purchase.
        iii. Documents are available to view electronically/online if you are a member of:
            1. McGraw Hill Construction Dodge / Builders Exchange of Central Ohio Plan Room, 1175 Dublin Road, Columbus, Ohio 43215; **Project information may be viewed at Dodge Data & Analytics at**: http://dodgeprojects.construction.com/
            2. The Builders Exchange, 9555 Rockside Road, Suite 300, Valley View, OH 44125

8. Delivery of Quotes – Follow Instructions in Notice to Bidders
    a. Electronic bids shall be received until **Tuesday, October 15, 2024 at 10:00am** by Capital Improvements Office – via ***Public Purchase.***
    b. Follow Instructions in Notice to Bidders and Item 2a of this agenda to submit bids on Public Purchase.
    c. Bid Tab will be posted to District website after bids are opened on Friday morning. Please check website for bid tab before reaching out to District staff: http://www.columbus.k12.oh.us/website.nsf/(ccs_pages)/CCS_RFP?opendocument

9. Site Visitation/Building Access
    a. Meet Project Manager Lori Seeger at Mifflin HS at 11:00am.

10. If attending this Virtual Pre-Bid Meeting, please be sure to email Construction Contracts Manager, Brandie Bronston Houpe, your information at the following bbronston@columbus.k12.oh.us including: Name, company, email address

11. Questions?
    a. CCS PM Lori Seeger noted work can bring prior to 6/03/25 date noted in pre-bid agenda.
    b. Jake Hug asked about the wind warranty. **Brian Higgins with Schooley Caldwell noted this will be addressed and updated via Addendum.**
    c. Will you have any other days set for site visit? **Lori Seeger noted no.**
    d. Can you supply the school's plumber, electrician and HVAC contact info, so we don't void any existing warranties? **Lori noted contractors can contact Jeff Roe, Director of Buildings& Grounds at jroe@columbus.k12.oh.us**



1 Roof Demolition Plan
1/16" = 1'-0"

DEMOLITION - GENERAL NOTES

A. Dimensions shown are approximate. Field verify all dimensions.

B. For typical existing roof system refer to Detail 6/A400.

C. For existing south stair roof system refer to Detail 12/A400.

D. For existing saw-tooth roof system refer to Detail 8/A400.

E. For areas of wet insulation refer to Dental 10/A400.

F. This project is a re-roof over an existing coal tar built up roof. Remove pea gravel and prepare coal tar surface for new roof components. Removal also includes all copings and edge metal; flashings, counterflashings, termination bars, crickets, pitch pockets, etc. from all horizontal and vertical surfaces.

G. For sawtooth roof areas remove all existing metal copings, edge metal, flashings, etc.

H. For south stair roof areas remove all existing metal copings, edge metal, flashings, etc

I. Areas identified having wet insulation will be a complete tear-off down to the Tectum deck.

J. All items marked "existing" are to remain, unless noted otherwise.

K. Where equipment must be temporarily removed, coordinate shutdown schedules with Columbus City Schools. Temporary removals and reinstallation shall be by the roofing contractor, unless otherwise noted.

L. The existing Tectum roof decks are assumed to be in good condition. If adverse conditions are encountered, notify the Architect.

M. In the saw tooth area the existing the existing plywood is assumed to be in good condition. If adverse conditions are encountered, notify the Architect.

N. Remove all existing cants from coping walls, curbs, etc. in preparation for new flasings.

DEMOLITION - CODED NOTES

D1 Remove existing pea gravel. Refer to Detail 6/A400.

D2 Existing curb/rail mounted mechanical equipment.

D3 Existing roof drain: Remove existing strainer and clamping ring as required to install new retrofit drains.

D4 Remove existing expansion joint cover.

D5 Existing roof hatch to be removed. Enlarge opening in the roof and Tectum planks to accomodate the new roof hatch. No structural modifications required

D6 Remove existing drain in it's entirety. Disconnect from storm piping below deck. Reinstall and reconnect to piping after installation of new deck.

D7 Remove existing asphalt shingles and felt papers. Refer to Detail 8/A400.

D8 Remove existing sheet metal caps, curbs, rails, supports, etc. from abandoned HVAC equipment.

D9 Remove existing Modified bitumen, cover board, and insulation down to original built up roof. Refer to Detail12/A400

DEMOLITION PLAN - SYMBOL LEGEND

Direction of roof slope

1 Approximate areas where wet insulation was found. Remove all roofing materials including the foam insulation bonded to the Tectum deck. Refer to Detail 10/A400. Based upon report by Pemco Thermal Inc, assume a total area of 2832 square feet

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Columbus OH 43215 F 614-628-0311
schooleycaldwell.com

Consultants:
MEP
AEC
1900 Dublin Rd
Columbus, OH 43215

Drawing Issue Dates

100% Owner Review
08/09/2024

Bid Set
09/09/2024

Revision Schedule

No.	Description	Date
1	Addendum 1	10/4/2024

CCS Roofs -
Mifflin High School

3245 Oak Spring Street
Columbus, Ohio 43219

Roof Demolition Plan

Architectural

AD101

9/9/2024

24140

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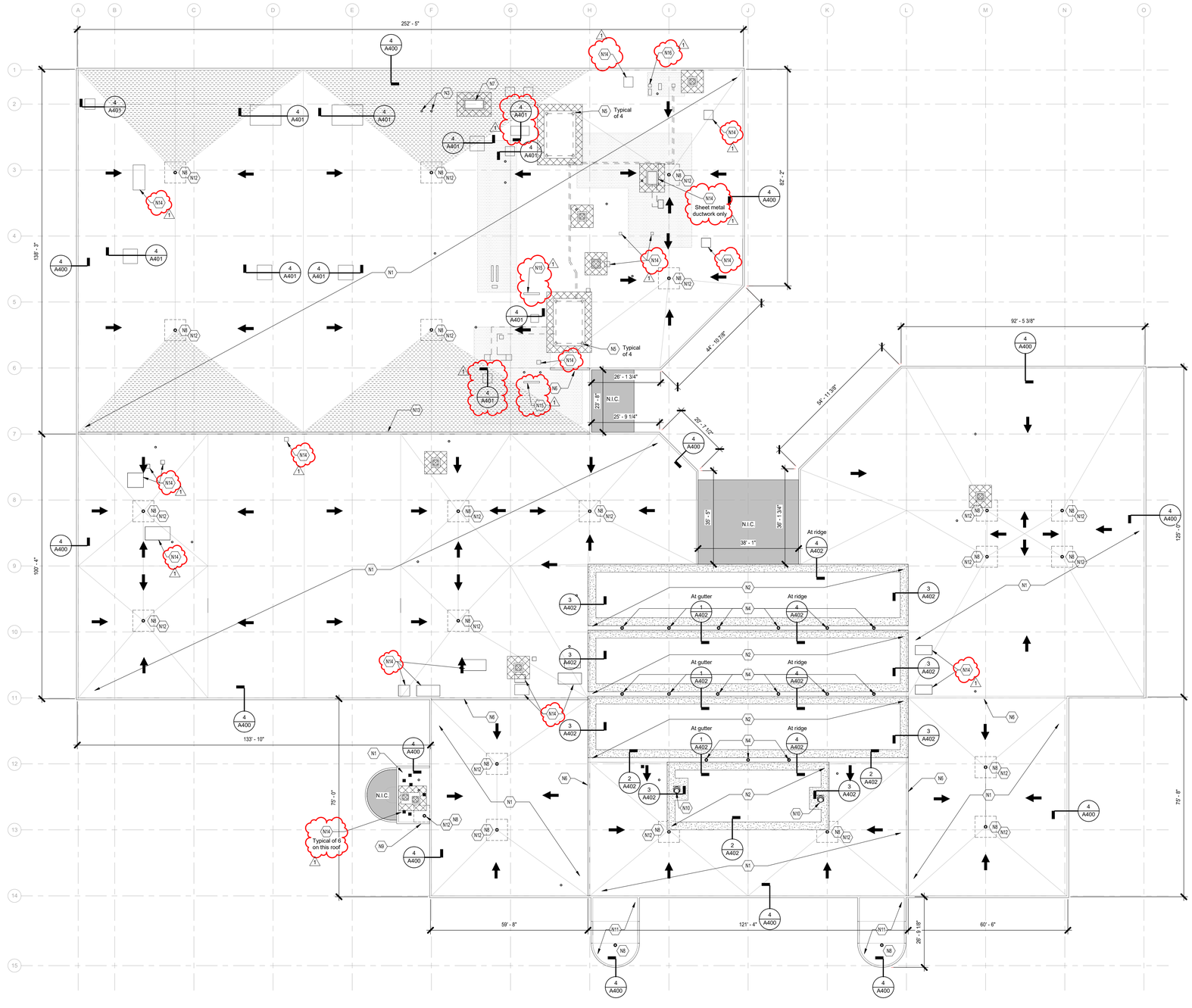

1 New Work Roof Plan
1/16" = 1'-0"

5 0 5 10 15 20 25 30 35 40 45 FEET

NEW WORK - GENERAL NOTES

A. The existing roof deck is assumed to have primary slopes that are integral to the roof deck. This shall be field verified.

B. All new roof surfaces must slope to drain. Add crickets or tapered insulation if necessary. This is beyond any crickets shown on the roof plans.

C. Provide crickets on the high side of all rectangular equipment curbs.

D. Any existing equipment and lines removed or disturbed shall be set back on curbs/shoes/rails. Install watertight system after extents of new roof assembly installed. Coordinate reinstallation.

F. New roof insulation will raise roof approximately 1". Any curb that does not allow for 6" of flashing height shall be added to or replaced.

G. Not every location on the roof has a detail call-out, but most conditions are detailed. At locations that are not called out, follow details that most approximate the conditions present.

H. Reflash all cap and boot curbs. Refer to Detail 2/A400

I. Reflash all equipment curbs. Refer to Detail 2/A400

J. Reflash all equipment rails.

K. Provide walk pads as shown on the roof plan. If any additional serviceable equipment exists, provide walkpads.

L. Flashing conditions at the gutter, window, coping, metal siding, etc of the sawtooth roofs will need special attention in order to make watertight. Refer to Details 5, 6, 7/A402 for typical conditions. Provide flashings as required to seal these conditions. Loosen and resecure existing metal siding if necessary to adequately install flashing. The watertightness of these conditions shall not rely on sealant alone.

NEW WORK - CODED NOTES

N1 New EPDM roofing assembly extent of roof area. Refer to Detail 5/A400.

N2 New asphalt shingle roofing assembly; Refer to Detail 7/A400

N3 Remove antena from plumbing vent. Install new goose neck pipe and mount anntenna to pipe. Run wire below the roof deck and reconnect to the source. Refer to Detail 6/A401.

N4 Reinstall existing roof drain and connect to storm pipe. Refer to Detail 1/A402.

N5 Pipe support for HVAC equipment. Flash per Detail 5/A401

N6 Reconfigured expansion joint cover. Refer to Detail 1/A401.

N7 Provide new roof hatch flash to make water-tight. Refer to detail 2/A401.

N8 Existing roof drains. Refer to Detail 1/A400.

N9 New scupper to replace existing scupper. Refer to Detail 3/A400.

N10 Existing curb to be reused. Ensure proper flashing with new asphalt shingle roof

N11 New EPDM roofing assembly extent of roof area. Refer to Detail 11/A400.

N12 Provide 8 foot square sump at each drain location

N13 Reconfigure expansion joint cover. Refer to Detail 7/A401

N14 Paint existing sheet metal HVAC vent, including curb flange

N15 Remove existing rail

N16 Remove existing curb

ROOF NEW WORK - SYMBOL LEGEND

- Direction of roof slope
- Area of waterproof underlayment beneath the asphalt shingles
- Walkpads around equipment
- 1 Approximate areas where wet insulation was removed. Refer to Detail 9/A400. Based upon report by Pemco Thermal Inc, assume a total area of 2832 square feet.
- Provide cricket as needed for positive slope to drain

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CCS Roofs -
Mifflin High School

3245 Oak Spring Street
Columbus, Ohio 43219

Roof Plan

Architectural

A101

9/9/2024

24140

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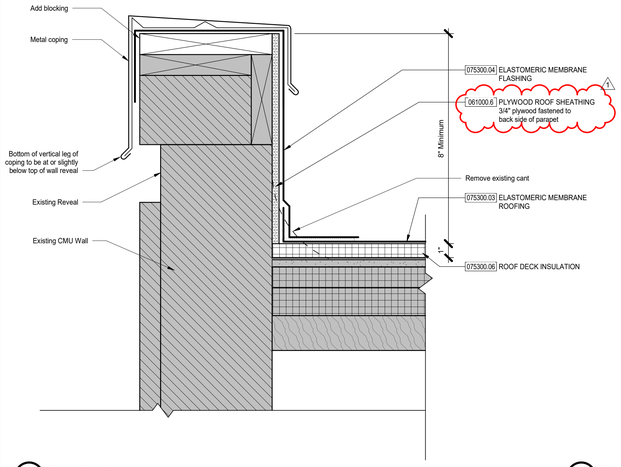
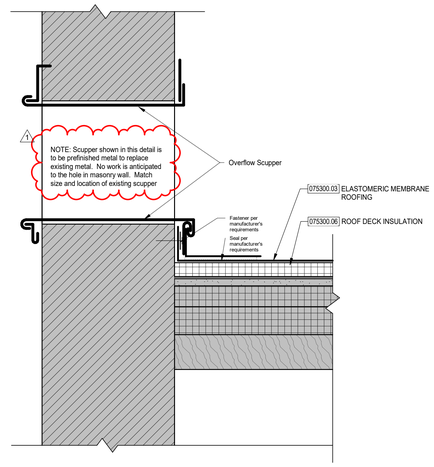
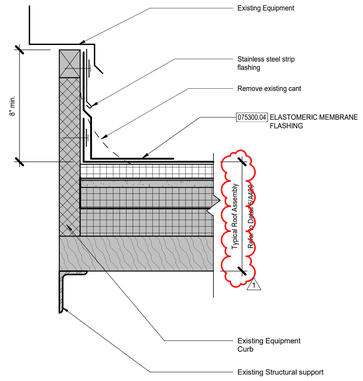


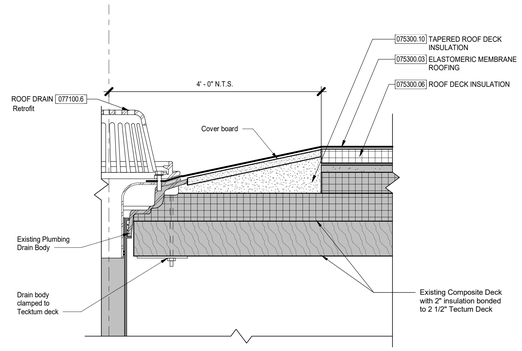
4 Parapet Detail
3" = 1'-0"



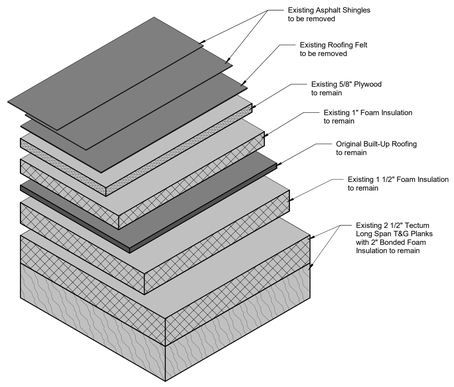
3 Through-Wall Overflow Scupper
3" = 1'-0"



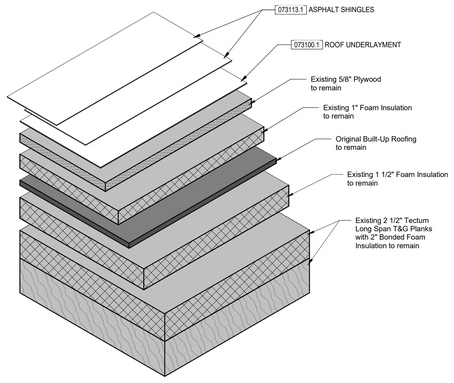
2 Equipment Curb Detail
3" = 1'-0"



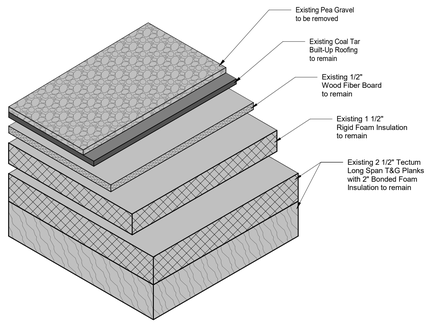
1 Retrofit Roof Drain Detail
3" = 1'-0"



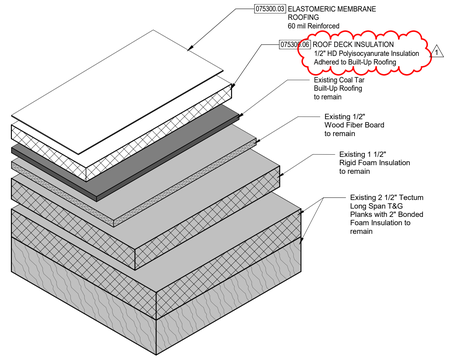
8 Sawtooth Roof Area - Existing Condition and Demolition
1 1/2" = 1'-0"



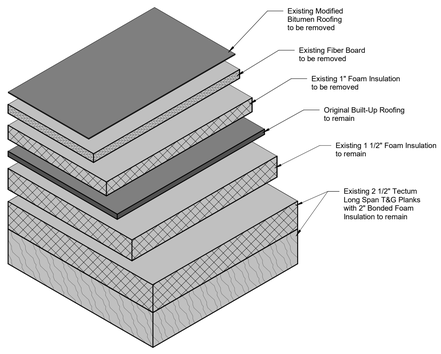
7 Sawtooth Roof Area - Proposed New Roof
1 1/2" = 1'-0"



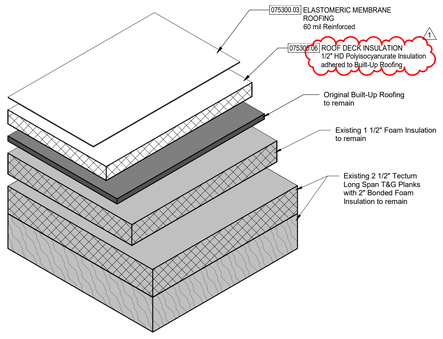
6 Typical Roof System - Existing Condition and Demolition
1 1/2" = 1'-0"



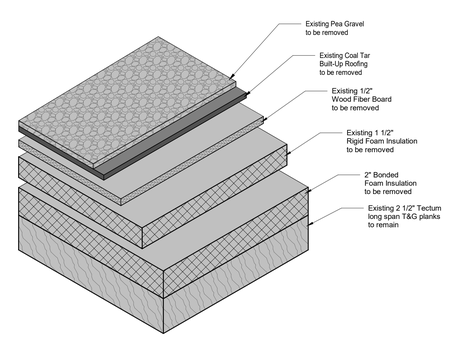
5 Typical Roof System - Proposed New Roof
1 1/2" = 1'-0"



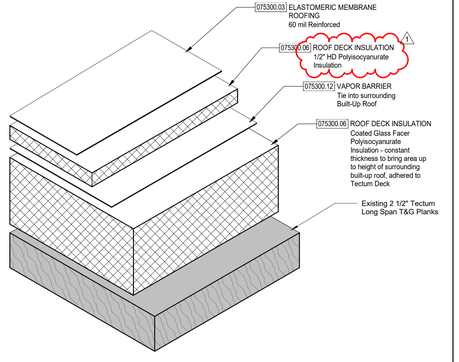
12 South Stair Roof Area - Existing Condition and Demolition
1 1/2" = 1'-0"



11 South Stair Roof Area - Proposed new Roof
1 1/2" = 1'-0"



10 Areas of Wet Insulation - Existing Condition and Demolition
1 1/2" = 1'-0"



9 Areas of Wet Insulation - Proposed New Roof
1 1/2" = 1'-0"

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Drawing Issue Dates

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Revision Schedule		
No.	Description	Date
1	Addendum 1	10/4/2024

CCS Roofs -
Mifflin High School

3245 Oak Spring Street
Columbus, Ohio 43219

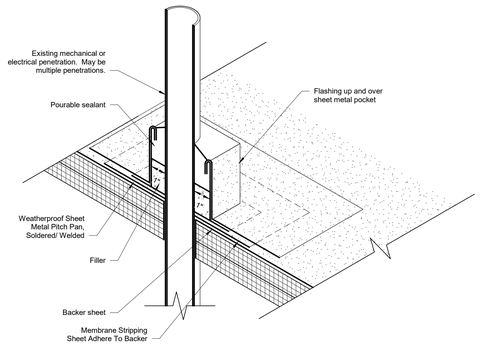
Exterior Details

Architectural

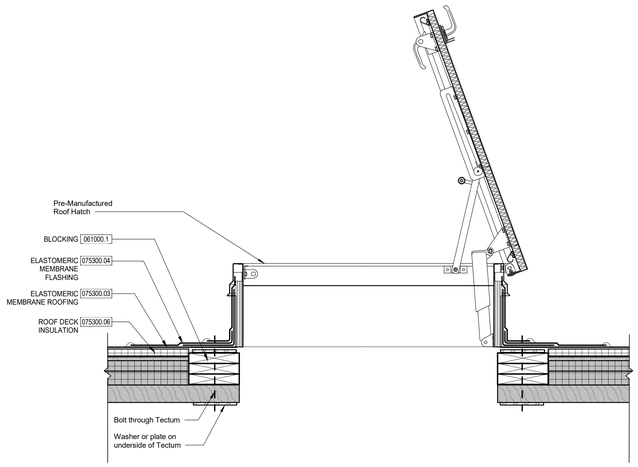
A400

9/9/2024

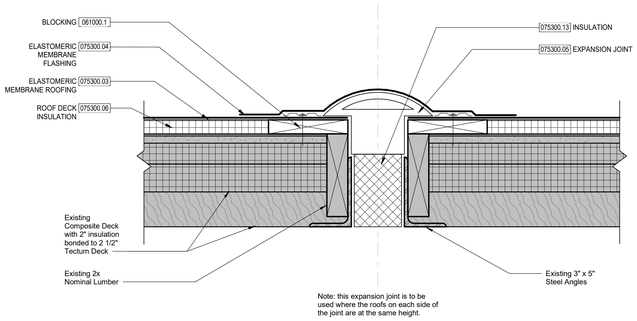
24140



3 Pitch Pocket
1 1/2" = 1'-0"

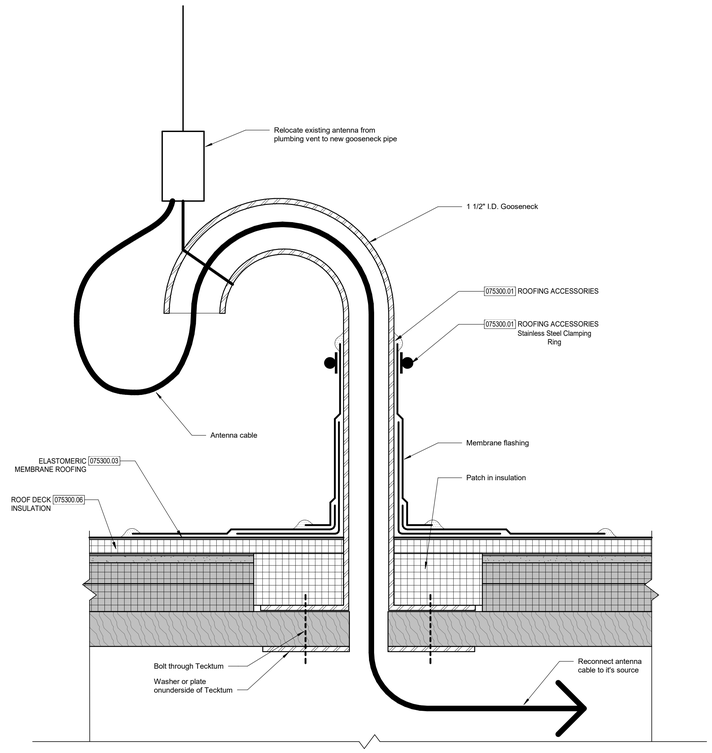


2 Roof Hatch Flashing Detail
1 1/2" = 1'-0"

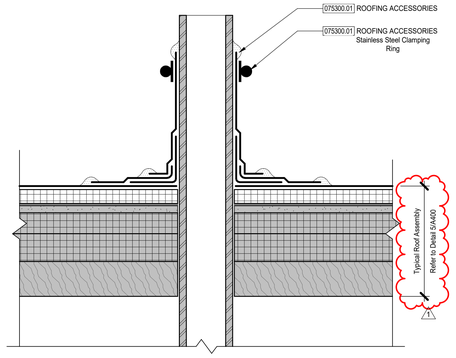


Note: this expansion joint is to be used where the roofs on each side of the joint are at the same height.

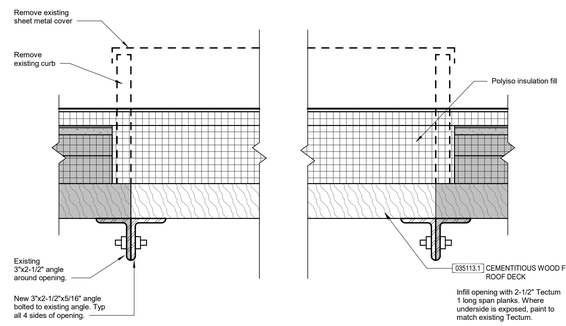
1 Deck to Deck Expansion Joint Detail
3" = 1'-0"



6 Flexible Penetration Detail
3" = 1'-0"

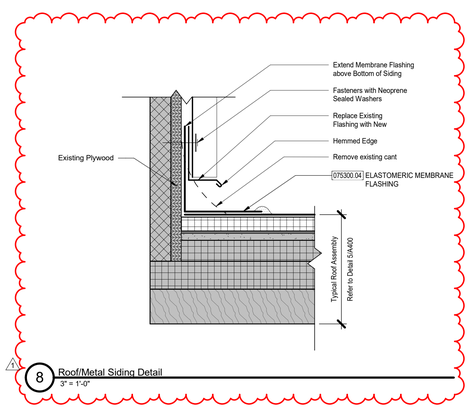


5 Pipe Penetration Detail
3" = 1'-0"

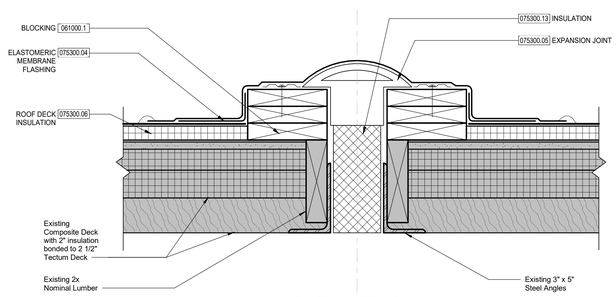


Infill opening with 2-1/2" Tectum 1 long span planks. Where underside is exposed, paint to match existing Tectum.

4 Roof Opening Infill
3" = 1'-0"



8 Roof/Metal Siding Detail
3" = 1'-0"



Note: this expansion joint is to be used where the roofs on each side of the joint are not at the same height.

7 Deck to Deck Expansion Joint Detail - Varied Deck to Joint Height
3" = 1'-0"

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Drawing Issue Dates

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Bid Set
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Revision Schedule

No.	Description	Date
1	Addendum 1	10/4/2024

CCS Roofs -
Mifflin High School

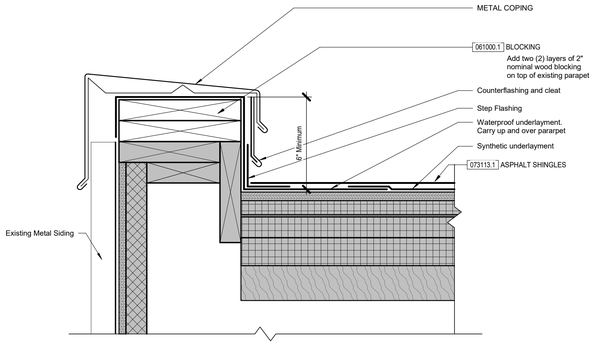
3245 Oak Spring Street
Columbus, Ohio 43219

Exterior Details

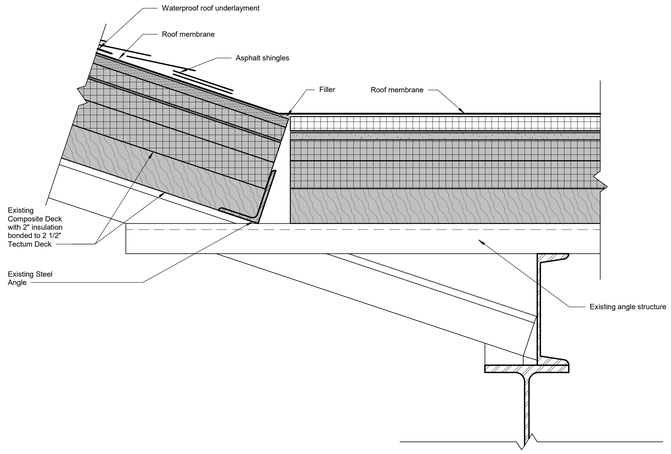
A401

9/9/2024

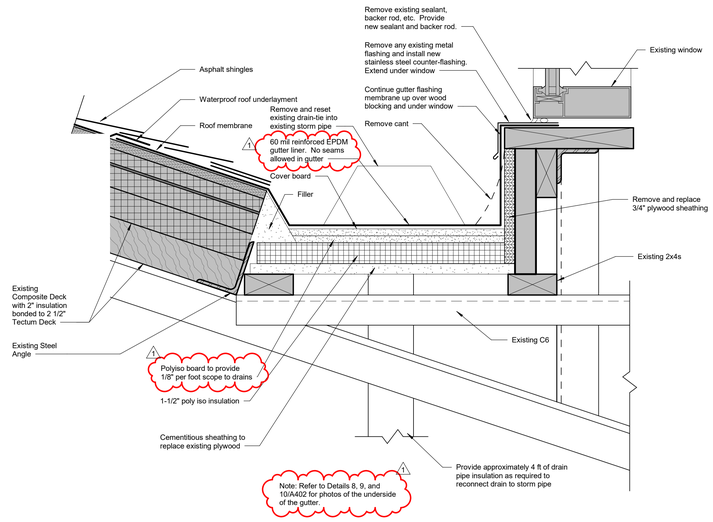
24140



3 Rake of Sawtooth Roof Detail
3" = 1'-0"



2 Bottom of Sawtooth Roof Detail
3" = 1'-0"

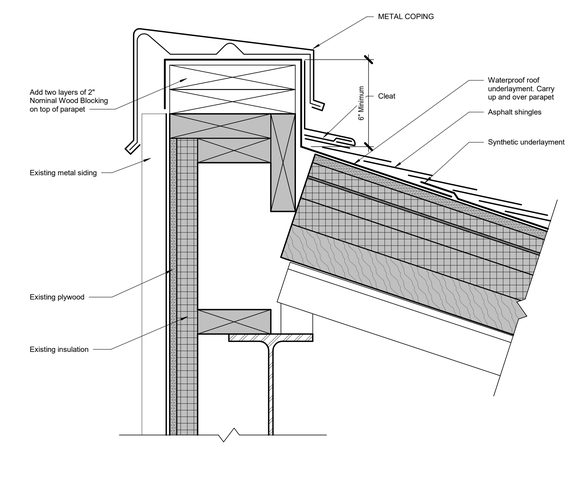


1 Sawtooth Roof Gutter Detail
3" = 1'-0"

7 Coping, Gutter, Window Interface
1 1/2" = 1'-0"

6 Coping, Window Interface
1 1/2" = 1'-0"

5 Gutter, Metal Siding, Coping, Roof Interface
1 1/2" = 1'-0"



4 Top of Sawtooth Roof Detail
3" = 1'-0"

10 View of Underside of Sawtooth Gutter
1 1/2" = 1'-0"

9 View of Underside of Sawtooth Gutter
1 1/2" = 1'-0"

8 View of Underside of Sawtooth Gutter
1 1/2" = 1'-0"

Note that the photos in Details 8, 9, and 10 show a lay-in ceiling grid. The ceiling tiles will be installed when the reroofing projects commences.

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Revision Schedule		
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CCS Roofs -
Mifflin High School

3245 Oak Spring Street
Columbus, Ohio 43219

Exterior Details

A402

9/9/2024

24140

SECTION 01 11 00

SUMMARY OF WORK

PART 1 – GENERAL

1.01 SUMMARY

A. Overview of the work of the project including parameters of the work of the contract and including administrative requirements.

B. Related Section /Documents:

1. Drawings and general provisions of the Contract, including General Conditions and Division 01 specification sections, apply to work of this section.

1.02 WORK OF THE CONTRACT DOCUMENTS AND PROJECT DESCRIPTION

A. The Project is entitled: **CCS MIFFLIN HIGH SCHOOL ROOF REPLACEMENT; CCS PROJECT NO. 25003**

B. The project location is:

3245 Oak Spring Street
Columbus, OH 43219

C. The construction documents are prepared for Columbus City Schools.

D. The Architect is:

SCHOOLEY CALDWELL
Architects/ Planners/ Interior Designers
300 Marconi Boulevard, Suite 100
Columbus, Ohio 43215-2325

E. The Owner is:

The Board of Education of the City School District of the City of Columbus Ohio.

F. The CONTRACT DOCUMENTS for the Project were prepared by the Architect. Contract Documents are dated September 9, 2024.

1.03 PRIME CONTRACT

A. The project will be constructed under a single-prime contracting arrangement. The prime contract for this project is as follows:

1. General Trades Contract

1.04 SUMMARY OF CONTRACT WORK

A. The project for the Mifflin High School Roof Replacement consists of re-roofing the entire building roof, which is roughly 82,000 square feet of flat roof area and 10,000 square feet of sloped roof area (sawtooth portions).

B. The existing low-slope roof assembly consists of a low slope built-up roofing system and a small portion of roofing that consists of sawtooth steep-sloped section of roofing. The existing built-up roofing makeup is indicated in the core cut information in this Project Manual and consists of a composite cementitious wood fiber deck (Tectum), 2 inch foam core insulation board (attached to Tectum), 1-1/2 inch loose foam core insulation. 1/2 inch wood fiberboard, and a built-up coat tar roofing membrane with pea gravel surfacing.

C. The re-roofing work includes removal of the existing stone ballast by Hydrovac, leveling the coal tar surface, adhesively applying a 1/2 inch thick high density polyisocyanurate insulation over the coal tar roofing membrane, and adhesively attaching a 60-mil reinforced EPDM membrane roofing over the insulation.

AD1

D. The “sawtooth” area of roofing is an area of approximately 10,00 square feet within the larger area of low-slope roofing. The existing shingles and board underlayment will be removed, and this area will be re-roofed with new asphalt shingles over underlayment over new plywood sheathing.

E. The re-roofing work includes areas with water damage which will require removal of the coal tar membranes, fiberboard, and insulation layers down to the Tectum deck. After examination of the suitability of the Tectum, the area will be infilled with the Coated Glass Facer Polyisocyanurate insulation up to the level of the new 1 inch insulation, to accept the new EPDM roofing membrane.

F. Existing perimeter metal including copings, will be replaced unless otherwise noted. New metal roof edge products and metal copings will also be installed as appropriate.

G. Existing roof curbs for roof mounted equipment will remain and will be flashed per roofing manufacturers details including installation of slip-flashing s in order to avoid having to lift equipment to install metal curb flashing.

1.05 CONTRACT DOCUMENTS

A. The Contract Documents are defined in the “Definitions” section of the Contract Requirements.

B. Project Work shall be executed in accordance with the Contract Documents. Provide all items, articles, materials, equipment, operations or methods listed, required to be provided by reason of the drawings or any part of the other Contract Documents, including all labor, materials, equipment and incidentals required or necessary for completion within the time specified in the Contract Documents.

C. The Contractor and sub-contractors are responsible for careful examination of all of the Contract Documents to ascertain the full extent of the work under their contract. Work installed under the Contract that must be changed, and which could have been avoided by the foregoing reference, shall be changed and paid for by the contractor.

1.06 EXAMINATION OF SITE

A. Bidders shall visit the site prior to bidding and make field inspections of the building and site to determine and verify the scope of work for this project. Field inspection shall take into account all the conditions which may affect cost, execution, and timely completion of the work described in these specifications. Failure to inspect the site prior to bidding shall not relieve the Contractor of responsibility to perform work required by conditions existing at time of bidding.

1.07 CONTRACTORS USE OF PREMISES

A. Confine operations at the site to the areas within the construction limits. Portions of the site beyond areas on which work is indicated are not to be disturbed. Conform to site rules and regulations affecting the work while engaged in project construction.

B. Cooperate with the School District Board and Architect regarding site utilization matters to achieve maximum practical use of the site and building while maintaining essential uses of the site and building by the School District Board.

C. Supervise the work and be solely responsible for construction means, methods, techniques, sequences, dimensions and procedures and for coordinating all portions of the Work. Construction techniques or activities which decrease the building security or safety are not permitted. Coordinate fully with the School District Board’s requirements regarding security and safety of the building and premises.

D. Deliver and store material and construction equipment to the areas designated by the School District Board for such storage use. Such materials and equipment shall be arranged in a neat and orderly manner, and away from pedestrian or automobile traffic. The storage area shall be barricaded by the Contractor to indicate that it is a restricted area.

E. Keep driveways and entrances serving the premises clear. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

F. Assume full responsibility for protection and safekeeping of materials and equipment stored at site. Move any stored materials and equipment that interfere with the operations of the School District Board.

G. Take all actions necessary to prevent damage to the property and to protect the buildings during the construction period. Damage to building or building sites due to or caused in conjunction to the contracted work shall be the responsibility of the Contractor to repair the damage.

H. Contractor and subcontractors shall be responsible for the protection and security of their own equipment, materials, and tools.

I. Do not dispose of materials on site by burial, burning, or other means.

J. Maintain access for firefighting equipment and access to fire hydrants.

1.08 THE SCHOOL DISTRICT BOARD OCCUPANCY REQUIREMENTS

A. Occupancy: The School District Board will occupy the premises during entire construction period, with the exception of areas under construction. Cooperate with the School District Board during construction operations to minimize conflicts and facilitate the School District Board's usage. Perform the Work so as not to interfere with the School District Board 's operations. Maintain existing exits, unless otherwise indicated.

1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from the School District Board and authorities having jurisdiction.
2. Provide not less than 72-hours' notice to the School District Board of activities that will affect the School District Board's operations.

1.09 WORK RESTRICTIONS

A. Work Restrictions, General: Comply with restrictions on construction operations.

1. Comply with limitations on use of public streets and other requirements of authorities having jurisdiction.

B. Definitions:

1. Ambient Noise Level: The total noise associated with a given environment, being usually a composite of normal or existing sounds from all sources near and far, excluding the noise source at issue.
2. Daytime: The hours from 7:00 a.m. to 6:00 p.m. on weekdays only.
3. Nighttime: All non-daytime hours.

C. On-Site Work Hours: Work shall be generally performed during normal business working hours of 7:00 a.m. to 6:00 p.m., Monday through Friday, except as otherwise indicated.

1. Weekend Hours: As approved by the School District Board.
2. Early Morning Hours: Permitted.
3. Noise Generating Work: No noisy activity when school classes are in session. Coordinate with School District Board.
4. Summer Hours: As permitted by School District Board.
5. Hours for Utility Shutdowns: To be coordinated with the School District Board to not affect Operations of the occupied portions of the buildings or adjacent buildings. If shut-downs will affect adjacent buildings the shut-downs must be done while the buildings are not in use.

D. Utilities serving facilities occupied by the School District Board or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:

1. Notify the School District Board not less than 72 hours in advance of proposed utility interruptions.
2. Do not proceed with utility interruptions without Architect's and the School District Board's written permission.

E. Restricted Substances: Use of tobacco products and other controlled substances on Project site are not permitted.

F. Employee Identification: Provide identification tags for Contractor personnel working on Project site. Require personnel to use identification tags at all times.

G. Employee Screening: Comply with Owner's requirements for drug and background screening of Contractor personnel working on Project site.

1. Maintain list of approved screened personnel with Owner's representative.

1.10 PERMITS, FEES, AND NOTICES

A. Contractor shall secure and pay for permits, inspections, governmental fees, tap-in fees, and licenses necessary for the proper execution and completion of Work, which are applicable at the time the bids are received, unless otherwise noted.

B. Inspections of installed work shall be performed by the governing authority as arranged for by the Contractor. Work shall not be covered until approved.

C. Contractor shall give notices and comply with laws, ordinances, rules, regulations, and orders of public authorities bearing on the performance of his Work. If the Contractor observes that the Contract Documents are at variances therewith, he shall promptly notify the Architect in writing, and necessary changes shall be adjusted by appropriate notification. If a Contractor performs Work knowing it to be contrary to such laws, ordinances, rules, and regulations, and without such notice to the Architect, he shall assume full responsibility therefore and shall bear the costs attributable thereto.

1.11 MISCELLANEOUS PROVISIONS

A. Contractor shall enforce strict discipline and good order among his employees or other persons carrying out Work of his Contract and shall not permit employment of unfit person or persons or anyone not skilled in the task assigned to them.

B. When verification of existing dimensions is required, the Contractor requiring said verification for the construction or fabrication of his material shall be the Contractor responsible for the procurement of the field information.

C. Do not scale documents.

D. Contractor shall be responsible for developing and conducting a security program, specifically oriented for the protection of, and for the preventing of damage, injury, or loss to the Contractor's respective portion of the Project site and other property at the site or adjacent thereto. This security program shall be acceptable to the School District Board, and shall remain in effect through Substantial Completion of the Project.

1.12 SPECIFICATION FORMATS AND CONVENTIONS

A. Specification Format: The Specifications are organized into Divisions and Sections using the new ***MASTERFORMAT*** **™ 2020 Edition** numbering system.

1. Section Identification: The Specifications use section numbers and titles to help cross-referencing in the Contract Documents. Sections in the Project Manual are in numeric sequence; based on the types of work required for this project. Consult the table of contents at the beginning of the Project Manual to determine numbers and names of sections in the Contract Documents.
2. The complete ***MASTERFORMAT*** **™ 2020 Edition** is available on-line at http://www.masterformat.com

B. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.
2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.

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

C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on the Drawings to identify materials and products:

1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
2. Abbreviations: Materials and products are identified by abbreviations scheduled on Drawings.
3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION

SECTION 07 01 50

PREPARATION FOR RE-ROOFING

PART 1 – GENERAL

1.01 SUMMARY

A. Section includes preparation of existing roof areas for re-roofing specified in Section 07 53 09. Work includes the following:

1. Existing roofing membrane preparation for new roofing membrane system installation.
2. Partial roof removal in areas designated for new roof infill system installation.

B. Existing Roofing System: Built-up coal tar on composite Tectum structural deck.

C. Work of the project includes the following:

1. All low-slope roof areas:

a. Removal of gravel ballast from roof surface by hydrovac. Existing coal tar roofing system remains in place after removal of the gravel ballast.
b. Removal of existing membrane at parapets and equipment curb and other transitions from horizontal roof surfaces to vertical surfaces.
c. Treatment of openings with spray foam insulation to prevent air movement through thermal envelope.

D. Related Sections:

1. Section 01 11 00 – Summary of Work for use of the premises and phasing requirements.
2. Section 01 50 00 – Temporary Facilities and Controls for temporary construction and environmental-protection measures for reroofing preparation.
3. Section 02 41 19 – Selective Demolition: General demolition criteria
4. Section 07 31 13 – Asphalt Shingles: Preparation of roof deck for replacement of shingles to existing plywood deck substrate.
5. Section 07 53 00 – Elastomeric Sheet Roofing: New re-roof system.

1.02 MATERIALS OWNERSHIP

A. Except for items or materials indicated to be reused, reinstalled, or otherwise indicated to remain School District Board's property, demolished materials shall become Contractor's property and shall be removed from Project site.

1.03 DEFINITIONS

A. Roofing Terminology: Refer to ASTM D 1079 and glossary in NRCA's "The NRCA Roofing and Waterproofing Manual" for definition of terms related to roofing work in this Section.

B. Existing Membrane Roofing System: Roofing membranes, roof insulation, surfacing, and components and accessories between structural deck and roofing membrane.

C. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and reinstalled.

D. Existing to Remain: Existing items of construction that are not indicated to be removed.

1.04 ACTION SUBMITTALS

A. Prepare the following submittals per requirements of Section 01 33 00 – Submittal Procedures.

B. Product Data:

1. Manufacturer's technical literature for each product and system indicated.
2. Include manufacturer's specifications for materials, finishes, construction details, installation instructions, and recommendations for maintenance.

C. Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including exterior and interior finish surfaces, which might be misconstrued as having been damaged by re-roofing operations. Submit before work begins.

D. Qualification Data: Installer is to be approved by warrantor of new roofing system(s).

1.05 QUALITY ASSURANCE

A. Regulatory Requirements: Regulatory Requirements: The Contractor is solely responsible for complying with all relevant requirements of governing authorities. Comply with governing Federal EPA and State EPD notification regulations before starting roof demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Pre-Installation Conference: Section 07 53 00.

1.06 PROJECT CONDITIONS

A. Hazardous Materials: If tests show hazardous material are present Contractor shall take necessary precautions for removal and disposal of material in full compliance with all applicable laws and regulations as described in the Summary.

1. A hazardous materials survey has been completed and test results are available.

B. School District Board will occupy portions of building immediately below reroofing area. Conduct reroofing so School District Board's operations will not be disrupted. Provide School District Board with not less than 72 hours' notice of activities that may affect School District Board's operations.

C. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.

D. Conditions existing at time of inspection for bidding will be maintained by School District Board as far as practical.

E. Limit construction loads on roof to rooftop equipment wheel loads and for uniformly distributed loads.

F. Weather Limitations: Proceed with reroofing preparation only when existing and forecasted weather conditions permit Work to proceed without water entering existing roofing system or building.

1.07 STAGING

A. The School District Board desires to have all existing parking and walkway areas remain in operation during as much of the construction as reasonably possible.

B. The Roofing Contractor should be aware that certain parts of the work under other contracts may be modified during the construction schedule.

C. Location of dumpsters shall be approved by the School District Board and shall be beyond 8’-0” protective fence.

PART 2 – PRODUCTS

2.01 INFILL AND REPLACEMENT MATERIALS

A. Wood sheathing, blocking, curbs, and nailers are specified in Section 06 10 53 – Rough Carpentry for Roofing.

B. Metal fabrications are specified in Section 05 50 00 – Metal Fabrications.

2.02 POLYURETHANE FOAM SEALANT INSULATION

A. Polyurethane foam sealant used to seal perimeter edges, penetrations, and slope transitions. Foam sealant shall be produced by or acceptable to the roofing system/insulation system manufacturer.

B. Closed-Cell Polyurethane Foam Insulation: ASTM C 1029, Type II, with maximum flamespread and smoke-developed indexes of 75 and 450, respectively, per ASTM E 84.

1. Water vapor permeance minimum: 1 perm @ 1 inch per ASTM E96 (desiccant method)
2. Aged R-value minimum: 6.4/in @ 1 inch thickness

3. Minimum Density: 1.8 pounds per cubic foot
4. Closed Cell Content minimum: 97% per ASTM D2856
5. Class I per ASTM E84 for FSI and SDI
6. Meet ICC AC377 standards as evidenced by current ICC-ESR listing
7. Acceptable Manufacturers:

    a. Dow Chemical Company; (Great Stuff Pro – Gaps and Cracks or Froth Pak)
    b. FOMO Products, Norton, Ohio (Extreme or Handi Foam)
    c. Hilti Corp, Tulsa, Oklahoma (CF810)

PART 3 – EXECUTION

3.01 EXAMINATION

A. Inspect substrates and conditions under which the work of this section will be performed, and verify that construction operations may properly commence. Do not proceed with the work until unsatisfactory conditions have been fully resolved.

B. Confirm that the existing Tectum structural deck is dry, stable and structurally sound. Tectum deck areas that are deteriorated including deck that is visably wet, shall be removed in deteriorated areas. Only sound deck shall remain as a substrate for the new roof assembly.

C. Verify that all roof drain lines are unblocked before starting work. Perform roof drain snaking per Section 22 14 26 – Roof Drains.

D. Closely inspect any uncovered condition and alert Architect's representative to conditions which may interfere with the performance of the new roof membrane system, inclusive of flashings.

E. All roofing work shall be performed in a way to provide a water tight roof system at all times during construction. It is the Contractor's responsibility to prevent construction-related leaks.

3.02 TEMPORARY FACILITIES

A. Conduct roofing demolition operations to prevent injury to people and damage to adjacent buildings and facilities to remain. Ensure safe passage of people around selective demolition area.

1. Protect existing site improvements, appurtenances, and landscaping to remain.
2. Protect all trees, shrubs and vegetation.
3. Protect existing paved areas. Do not allow heavy equipment to operate on these areas.
4. Protect all grass and play areas and restore to original condition where damaged by storage or equipment.

B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

1. Provide protection to ensure safe passage of people around and below selective demolition area and to and from occupied portions of building. Orange barricade fencing is required at egress doors, around staging areas and ground level work areas.
2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.

3.03 PREPARATION

A. During removal operations, have sufficient and suitable materials on-site to facilitate rapid installation of temporary protection in the event of unexpected rain.

B. Maintain roof drains in functioning condition to ensure roof drainage at end of each workday. Prevent debris from entering or blocking roof drains and conductors. Use roof-drain plugs specifically designed for this purpose. Remove roof-drain plugs at end of each workday, when no work is taking place, or when rain is forecast.

1. If roof drains are temporarily blocked or unserviceable due to roofing system removal or partial installation of new membrane roofing system, provide alternative drainage method to remove water and eliminate ponding. Do not permit water to enter into or under existing membrane roofing system components that are to remain.
2. Do not permit water to enter into or under existing membrane roofing system components that are to remain.

C. Protection of surfaces: Take every precaution to prevent water leakage, or debris falling into the building interior, or other such occurrences. Contractor is responsible for damage to the building interior or its contents that occur as a direct cause of the Work and due to the Contractors means and methods to accomplish the Work required herein.

D. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.

3.04 UTILITY SERVICES

A. Existing roof top utilities will remain in operation during reroofing. Exercise caution not to disturb.

B. Coordinate with School District Board to shut down air-intake equipment in the vicinity of the Work. Cover air-intake louvers before proceeding with reroofing work that could affect indoor air quality or activate smoke detectors in the ductwork.

C. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.

D. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.

1. Building maintenance engineer will arrange to shut off services/systems, when possible, upon request of Contractor.
2. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
3. Disconnect, demolish, and remove plumbing, and HVAC systems, equipment, and components indicated to be removed.

    a. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove; when appropriate, reinstall, reconnect, and make equipment operational.

3.05 OVERBURDEN REMOVAL

AD1

A. Remove aggregate from bituminous membrane surface over entire roofing system using hydrovac system.

B. Remove the loose aggregate, which may trap moisture. Any uneven areas of the substrate must be leveled to prevent subsequent insulation layer from bridging.

3.06 ROOFING MEMBRANE AND SELECTIVE ROOFING SYSTEM COMPONENT REMOVAL

A. Remove existing roofing completely, exposing structural roof deck at locations and to extent indicated on drawings.

B. Visually inspect roof insulation, and Tectum deck for moisture immediately after roof membrane removal.

1. Coordinate with Architect to observe inspections.
2. Identify wet roofing system components required to be removed.
3. Mark roofing system removal locations and extents.

C. Remove membrane, wood fiber board, unattached roof insulation Existing Tectum structural decking with composite insulation to remain.

D. Remove or cut off roofing system fasteners.

E. Remove wet roofing system components.

F. Remove or cut off roofing system fasteners when removals expose structural roof deck.

G. Maintain building watertight, unless new roofing assembly system is installed same day as removal and repair.

3.07 ROOF DECK PREPARATION

A. Inspect deck after removal of gravel ballast from roof surface.

AD1

B. Identify blisters in existing coal tar roofing, and prepared surface by removing blisters, ridges, buckles and other surface irregularities from existing roofing to prohibit new insulation boards from conforming to substrate.

1. Spud gravel from the surface of the membrane that is blistered or with other surface irregularities. Continue to spud gravel from the surface of the membrane a minimum of 6 inches to 12 inches around the perimeter of the area.
2. Cut out the membrane areas with these irregularities. Use a blower / heat to dry moisture from within the membrane.
3. Level unevenness at blistered/ridge areas at to prevent subsequent insulation cover board from bridging.

C. For roof system removal in areas identified, verify that tectum deck substrate is visibly dry and free of moisture.

D. Examine existing roof deck, if broken or loose fasteners that secure decking to one another or to structure are observed or if deck appears or feels inadequately attached, immediately notify Architect. Do not proceed with installation until directed by Architect.

E. If deck surface is not suitable for receiving new roofing or if structural integrity of deck is suspect, immediately notify Architect. Do not proceed with installation until directed by Architect.

F. Provide additional deck securement as required to proper installation of roofing membranes and in accordance with roofing manufacturer’s requirements.

G. Abandoned Equipment Openings in Deck**:** Infill existing openings in roof deck in accordance with drawing details. Ensure that installation of new tectum deck is continuous without unevenness in the finished roof surface.

3.08 BASE FLASHING REMOVAL

A. Remove existing base flashings around parapets, curbs, walls, and penetrations in accordance with drawing details.

1. Clean substrates of contaminants such as asphalt, sheet materials, dirt, and debris in preparation for cover board and elastomeric flashings.

3.09 POLYURETHANE FOAM SEALANT INSULATION

A. The spray foam insulation shall be installed in accordance with the material manufacturer’s installation instructions. The material shall be maintained at the optimum application temperature during use.

3.10 DISPOSAL

A. Disposal of materials: All materials to be disposed of shall be loaded directly into trucks by means that will prevent damage to existing or new surfaces and to control pollution. Free-fall of debris from heights over 15 feet will not be allowed.

B. Do not allow demolished materials to accumulate on-site. Storage or sale of demolished items or materials on-site is not permitted.

C. Transport and legally dispose of demolished materials off School District Board's property.

END OF SECTION

SECTION 07 53 00

ELASTOMERIC SHEET ROOFING

PART 1 – GENERAL

1.01 SUMMARY

A. Section includes: Adhered ethylene propylene diene monomer (EPDM) single ply membrane roofing system as a re-roof system.

B. Work of the project includes the following:

1. Major portion of building roof areas:
    a. (Section 07 01 50): Removal of gravel ballast from roof surface by hydrovac. Existing coal tar roofing system remains in place after removal of the gravel ballast.
    b. New single layer coated glass facer polyisocyanurate insulation is adhesively applied coal tar membrane.
    c. EPDM membrane is adhesive applied over the coated glass facer polyisocyanurate insulation.
2. Wet Roofing Areas:
    a. Areas of wet roofing are to be removed down to tectum roof deck and built back up with infill of insulation, vapor retarder, coated glass fiber insulation and surfaced with the adhered EPDM membrane.
    b. Fill all voids with new insulation of type specified so top surface is relatively flush (+/- 1/4") with the existing surface.

AD1

3. Stair tower areas with modified bitumen roofing over the original built-up roofing require the modified bitumen over lay to be removed and replaced with coated glass facer insulation over the original built-up roofing with an adhered EPDM membrane.
4. An area of the roof with “sawtooth” steep-sloped roofs will be re-roofed with an asphalt shingle roofing assembly under Section 07 31 13 – Asphalt Shingles.

C. System includes:

1. Flashing at all penetrations through the roofing system and at all materials which abut roofing system.
2. Roofing accessories.

D. Related Sections:

1. Section 06 10 53 – Rough Carpentry for Roofing: Wood nailers and blocking related to roofing system.
2. Section 07 01 50 – Preparation for Re-Roofing: Preparation of existing roof surface for new re-roof system.
3. Section 07 71 00 – Roof Specialties: Metal roof edge flashings, sheet metal flashings, and counter flashings and reglets.
4. Section 07 72 33 – Roof Hatch
5. Section 22 14 26 – Roof Drains

1.02 DEFINITIONS

A. Roofing Terminology: Refer to ASTM D 1079 and glossary of NRCA's (National Roofing Contractors Association) "The NRCA Roofing and Waterproofing Manual" for definition of terms related to roofing work in this Section.

B. Design Uplift Pressure: The uplift pressure, calculated according to procedures in SPRI's (Single-Ply Roofing Institute) "Wind Load Design Guide for Fully Adhered and Mechanically Fastened Roofing Systems," before multiplication by a safety factor.

C. Factored Design Uplift Pressure: The uplift pressure, calculated according to procedures in SPRI's "Wind Load Design Guide for Fully Adhered and Mechanically Fastened Roofing Systems," after multiplication by a safety factor.

1.03 PERFORMANCE REQUIREMENTS

A. General Performance: Installed roofing system and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Roofing and flashings shall remain watertight.

B. Sheet Membrane Manufacturer's Responsibilities: Sheet membrane manufacturer shall be totally responsible for designing the roof assembly attachment systems.

C. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by roofing membrane manufacturer based on testing and field experience.

D. Roofing System Design:

1. Provide a membrane roofing system that is identical to systems that have been successfully tested by a qualified testing and inspecting agency to either resist uplift pressure calculated according to ASCE/SEI 7-10 or in accordance with membrane manufacture's written fastening density instructions, whichever is more resistive to wind load indicated.

E. Factored Design Uplift Pressure: Provide manufacturer designed roofing system which will resist wind uplift loads as follows. When not indicated, meet the requirements of ASCE 7-10.

1. Roofing system shall comply with the following:

a. ASCE 7: Minimum Design Loads for Buildings and Other Structures.

2. Manufacturer to verify uplift pressures to comply with the following:

a. Zone 1 (Roof Area Field): 31.1 lbf/sq. ft.
b. Zone 2 (Roof Area Perimeter): 52.2 lbf/sq. ft.
c. Zone 3 (Roof Area Corners): 78.5 lbf/sq. ft.

3. Provide roofing assemblies, including anchorage, capable of withstanding wind pressures acting inward and outward normal to the plane of the roof.
4. Determine design loads using the appropriate coefficients for the roof configurations indicated.

F. Roof Specialties: Comply with requirements of Section 07 71 00. Provide base flashings, perimeter flashings, detail flashings and component materials that comply with requirements and recommendations of the following:

1. NRCA Roofing and Waterproofing Manual (2015 Edition) for construction details and recommendations.
2. SMACNA Architectural Sheet Metal Manual (Seventh Edition - 2012) for construction details.

1.04 ACTION SUBMITTALS

A. Prepare the following submittals in accordance with Section 01 30 00 – Submittal Procedures.

B. Product Data, Roofing Systems: Submit the name of the manufacturer and specification numbers and product names of all materials proposed for each type of product specified. Include in submittal installation instructions and general recommendations for each principal roofing system product required. Include data substantiating that the materials comply with requirements, including certificates and delivery logs for bulk materials.

C. Shop Drawings: Submit shop drawings showing roof size, including dimensions of roof perimeters and corners; details of flashing methods at parapet walls, penetrations, termination's, drains, method of seaming, location of seams, and other specified accessories.

1. Base, perimeter, and detail flashings, and membrane terminations.
2. Crickets, saddles, and tapered edge strips, including slopes.

3. Insulation supplier's shop drawings showing the layout of the insulation including slopes. Shop drawings shall show actual locations and sizes of all roof drains and other pertinent rooftop equipment.
4. Insulation fastening patterns.

D. Contract Closeout Submittal: Include the following at time of Project Closeout:

1. Submit manufacturer's data on roof system, including technical data on sheet membrane; include in "Maintenance Manual" specified in Section 01 77 19 – Closeout Requirements.
2. Submit the following and include in "Warranties Manual"

a. Submit executed warranty.
b. Submit written recommendations from roofing manufacturer covering maintenance program, frequency of periodic inspections, instructions on notification procedures to follow in the event a roof leak occurs, including emergency situations, and other warranty requirements which the Owner must comply with so as to not violate any terms or conditions required by the manufacturer.
c. Submit copy of written report of final roofing inspection which took place prior to Substantial Completion; report shall indicate that repairs (if required) were made per roofing manufacturer's recommendations.

1.05 INFORMATIONAL SUBMITTALS

A. Prior to beginning the work of this section, roofing Contractor shall provide a copy of the final System Assembly Letter issued by the manufacturer indicating that the products and system to be installed shall be eligible to receive the specified manufacturer's warranty when installed by a certified contractor in accordance with application requirements, inspected and approved by a manufacturer's Field service representative.

B. Product Certificate: Submit notarized certificate, indicating complete list of products intended for use under Work of this Section, including product names and numbers and manufacturers' names, with statement indicating that products to be provided meet the requirements of the Contract Documents.

C. Product Test Reports: Based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, for components of roofing system.

D. Installer Certificates: Signed by roofing system manufacturer certifying that Installer is approved, authorized, or licensed by manufacturer to install roofing system.

E. Manufacturer Certificates: Signed by roofing manufacturer certifying that roofing system complies with requirements specified in "Performance Requirements" Article.

F. Warranty Draft: Submit draft of warranty with required inclusion for review; warranty shall state obligations, remedies, limitations, and exclusions. Submit draft warranty with product data.

G. Inspection Reports: Copy of daily and final technical inspection reports of roofing installation.

1.06 QUALITY ASSURANCE

A. Source Limitations: Obtain components for membrane roofing system from or approved by roofing membrane manufacturer.

B. Installer's Qualifications:

1. Licensed or approved by manufacturer of elastomeric membrane materials for installation of specified roof systems and issuance of special extended warranty as specified. Welding of seams shall be done by mechanics which have successfully completed a training course provided by sheet membrane manufacturer.
2. Installer must maintain a full-time supervisor/foreman on job site during all times work is in progress. Supervisor must be certified to have had experience with applications similar in nature and scope to specified systems and have a minimum of ten (10) years' experience with type of roofing system specified and projects of this magnitude and scope.

C. Manufacturer's Technical Representative Qualifications: An authorized full-time employee representative of the manufacturer experienced in the installation and maintenance of the specified roofing system and qualified to determine Installer's compliance with the requirements of this Project.

D. Fire-Test-Response Characteristics: Provide membrane roofing materials with the fire-test-response characteristics indicated as determined by testing identical products per test method below by UL, or another testing and inspecting agency acceptable to authorities having jurisdiction. Materials shall be identified with appropriate markings of applicable testing and inspecting agency.

1. Exterior Fire-Test Exposure: Class A; ASTM E 108, for application and roof slopes indicated.
2. Fire-Resistance Ratings: ASTM E 119, for fire-resistance-rated roof assemblies of which roofing system is a part.

E. Preinstallation Conference: Conduct conference at Project site. Comply with requirements in Section 01 31 00 – Project Coordination. Review methods and procedures related to roofing system including, but not limited to, the following:

1. Review system requirements, including drawings, specifications, manufacturer's installation instructions and warranty requirements, including flashing details, special roofing details, and roof drainage. Resolve discrepancies prior to installation of roofing assemblies.
2. Review the requirements (contract documents), submittals, proposed installation schedule, location and storage of materials, requirements for inspections and testing or certifications, forecasted weather conditions, governing regulations, insurance requirements, proposed installation procedures, and any other items that may be required for completion of the project.
3. Meet with School District Board, Architect, School District Board's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, and installers whose work interfaces with or affects roofing including installers of roof accessories and roof-mounted equipment.
4. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
5. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
6. Review structural loading limitations of roof deck during and after roofing.
7. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect roofing system.
8. Review governing regulations and requirements for insurance and certificates if applicable.
9. Review temporary protection requirements for roofing system during and after installation.
10. Review roof observation and repair procedures after roofing installation.

F. Test Reports:

1. Roof drain and leader test or submit plumber’s verification.
2. Core cut (if requested).

1.07 DELIVERY, STORAGE AND HANDLING

A. General: Comply with requirements specified in Section 01 60 00 – Product Requirements.

B. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, and directions for storing and mixing with other components.

C. Roofing membranes are to be stored in a dry location. Exterior storage on skids or tarpaulin coverage is acceptable for short-term outdoor storage. Store materials in their original undamaged and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.

1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.

D. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Manufacturers insulation bundle packaging is intended for transportation only. Comply with PIMA Technical Bulletin #109 regarding storage and handling recommendations, and with insulation manufacturer's written instructions for handling, storing, and protecting during installation.

1. Roofing insulation which became wet before or after installation must be removed and replaced. Wet materials shall not be dried and reused.

E. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.

1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.

F. Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of deck.

1.08 PROJECT CONDITIONS

A. Coordinate all roofing work closely with Architect as it relates to work going through the roof deck and/or affecting the roof deck and/or the roof system. Perform roofing work as identified in these project specifications and drawings, in strict accordance with the various roofing material manufacturer's installation instruction requirements and recommendations.

1. Comply with recommendations of the manufacturer for environmental conditions before, during, and after application of roofing system.

B. Protect the interior of the building against water damage at all times while the roofing repair work is in progress. Maintain roof drainage system during reroofing. Modify roof drainage during application of roofing to permit drainage of roof until permanent drains are set.

C. Inspect uncovered conditions and alert Architect to any condition which may interfere with the performance of the new roof membrane system, inclusive of flashings.

D. Rooftop equipment which is scheduled to be deleted, changed and/or raised per requirement of project specifications/drawings, is required to be completed according to local and state building code requirements and completed by licensed Contractors.

E. Roofing Contractor shall assist and cooperate with Owner to maintain the existing roof system, as well as the newly installed system, in a watertight condition throughout the construction period.

F. Remove all existing flashing components of the roof's perimeter and penetrations where existing flashing components interfere with the application of the new flashing materials. Clean existing surfaces of asphalt or other contaminants where contact with roof membrane surfaces is expected.

G. Sequence removal of existing roofing and installation of new roofing system to avoid unnecessary rooftop traffic over completed sections of new roofing. Where, due to work sequencing, traffic is required, traffic paths shall be clearly defined, and completed roofing shall be protected with plywood boards or similar material. Protection shall take into consideration the material characteristics of the roof membrane.

H. At heavily trafficked locations such as pathways for material removal and /or material distribution, the existing roof system shall be protected. Protection shall consist of foam insulation of sufficient thickness to prevent roof membrane punctures. The insulation shall be overlaid with plywood boards. The pathway shall be constructed in a fashion to prevent displacement by wind.

I. Weather: Proceed with roofing work when existing and forecasted weather conditions permit work to be performed in accordance with manufacturer's recommendations and warranty requirements.

J. Coordination:

1. Ensure that metal counterflashing and pipe penetration flashing members are ready for installation.
2. Coordinate with trade responsible for safety line anchors to ensure that they have been installed prior to roofing.

K. Protection: Schedule and execute all work to prevent damage to adjacent surfaces not to receive roof materials. Repair damage caused to existing substrates. Damage repair and cleaning performed at Contractor's expense.

1.09 WARRANTY

A. Provide manufacturer's No Dollar Limit (NDL), non-prorated, Total Roofing System Warranty, without monetary limitation, in which manufacturer agrees to repair or replace components of membrane roofing system that fail in materials or workmanship within specified warranty period. Failure includes roof leaks.

1. Special warranty includes roofing membrane, insulation, cover boards, membrane flashings, roofing accessories including adhesives, sealants, metal roof copings, metal roof edgings, termination metals and retrofit roof drain assemblies and other components of membrane roofing system.
2. Warranty period is 20 years materials and labor after date of final acceptance of the project.

3. Warranty shall include roofing damage resulting from wind speeds up to and including 90 mph (3-second gust speed at 33 feet above ground for exposure category indicated).
4. Submit a sample copy of roofing warranty which will be executed upon completion of the Work, prior to award of the contract.
5. All system components not specifically identified herein but required by the membrane supplier for the roof system installed by the Work required in the Project Manual shall be provided and included in the membrane supplier watertight warranty as required herein.

B. Special Project Warranty: Submit roofing Installer's warranty, on warranty form at end of this Section, signed by Installer, covering Work of this Section, including all components of roofing system such as membrane roofing, base flashing, cover boards, and walkway products, for the following warranty period:

1. Warranty Period: Two years from date of Substantial Completion.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

A. Basis of Design Manufacturer: Provide roofing system of the following roofing materials manufacturer.

1. Carlisle Syntec Systems, Carlisle, PA.

a. Design "A" Adhered Roofing System with Sure-Tough 60-mil reinforced EPDM Membrane.

B. Approved Products/Manufacturers:

1. Subject to compliance with requirements, provide the “Basis of Design” product or an equivalent product of one of the following:

a. RubberGard MAX Reinforced EPDM Membrane by Holcim Elevate.
b. JM EPDM R 60 Mil – Fit by Johns Manville.

2. Products of these named manufacturers shall meet or exceed specification requirements for the “Basis of Design” product.

2.02 ROOFING SYSTEM ASSEMBLY DESCRIPTION

A. Roofing System Components: Listed in order from the top of the roof down:

1. Fully Adhered Membrane: Thickness as specified; adhesive attached.
2. Cover Board (where indicated on drawings): Gypsum-based board, 1/2 inch thick; adhesive attached.
3. Insulation: Coated Glass Facer Polyisocyanurate insulation board, adhesive attached.

a. Insulation Board Thickness: 1-inch.

4. Structural Deck: Existing Tectum roof deck

2.03 EPDM MEMBRANE

A. EPDM Roofing Membrane: ASTM D 4637, Type II, scrim or fabric internally reinforced uniform, flexible sheet made from EPDM, and as follows:

1. Class SR: Reinforced.
2. Thickness: 60 mils, nominal.
3. Exposed Face Color: Black.

B. Application: Fully adhered membrane to cover board in adhesive.

C. Provide roofing materials recognized to be of the generic type indicated and tested to show compliance with indicated performances.

D. Provide products which are recommended by the manufacturer to be fully compatible with the individual substrates, or provide separation materials to eliminate contact between incompatible materials.

2.04 ROOF DECK INSULATION

A. General: Preformed roof insulation boards manufactured or approved by EPDM roofing manufacturer, selected from manufacturer's standard sizes suitable for application, of thicknesses indicated

1. Provide insulation products as manufactured by, or labeled by the manufacturer of primary roofing components as appropriate and compatible with the system for the intended application. Roof insulation to be included under primary roofing manufacturer's warranty as specified.
2. Provide insulation materials that are identical to materials whose fire-performance approval and wind up-lift classification have been determined for the assemblies of which the insulation materials are a part.
3. Provide insulation in manufacturer’s standard sizes for each application indicated.

B. Polyisocyanurate Board Insulation: ASTM C 1289, Type II, Class 4, Grade 1, rigid board insulation with coated glass facing on both sides.

AD1

1. Compressive Strength: 109 psi max per ASTM D1621
2. Thermal Resistance: R-value of 2.5 for ½ inch thickness
3. Board Size: 48 x 48 inch or 48 x 96 inch
4. Board thickness: As indicated
5. Board Edges: Square
6. Manufacturers: As approved by roof membrane manufacturer:

    a. Basis of Design: Carlisle SynTec Incorporated “SecurShield HD Polyiso”
    b. Holcim Elevate
    c. Johns Manville, a Berkshire Hathaway Company

C. Application: Adhesively applied to cleaned coal tar membrane.

D. Tapered insulation: Provide factory-tapered insulation boards fabricated to slope of 1/4 inch per 12 inches unless otherwise indicated.

1. Provide tapered insulation board of same material as board insulation specified in paragraph above; tapered to slope indicated on the drawings; manufacturer's standard dimensions. Stagger joints from constant thickness insulation below tapered layer.

E. Provide preformed saddles, crickets, tapered edge strips, and other insulation shapes where indicated to properly direction water flow to the nearest drain. Fabricate to slopes indicated.

2.05 ROOF INSULATION (INFILL REPLACEMENT)

A. General: Preformed roof insulation boards manufactured or approved by EPDM roofing manufacturer, selected from manufacturer's standard sizes suitable for application, of thicknesses indicated

AD1

1. Provide insulation products as manufactured by, or labeled by the manufacturer of primary roofing components as appropriate and compatible with the system for the intended application. Roof insulation to be included under primary roofing manufacturer's warranty as specified.
2. Provide insulation materials that are identical to materials whose fire-performance approval and wind up-lift classification have been determined for the assemblies of which the insulation materials are a part.
3. Provide insulation in manufacturer’s standard sizes for each application indicated.

B. Polyisocyanurate Board Insulation: ASTM C 1289, Type II, Class 2, Grade 3, rigid board insulation with coated glass facing on both sides.

1. Compressive Strength: 20 psi per ASTM D1621
2. Thermal Resistance: R-value of 6.0 per inch, LTTR minimum
3. Board Size: 48 x 48 inch or 48 x 96 inch
4. Board thickness: As indicated
5. Board Edges: Square
6. Manufacturers: As approved by roof membrane manufacturer:

    a. Basis of Design: Carlisle SynTec Incorporated “SecurShield Polyiso”
    b. Holcim Elevate
    c. Johns Manville, a Berkshire Hathaway Company

C. Application: Adhesively applied to composite tectum deck.

2.06 VAPOR RETARDER

A. Sheet Membrane 40-mil composite consisting of 35 mils of self-adhering rubberized asphalt laminated to a 5-mil woven polypropylene film installed directly on new infill insulation to continue vapor retarder across roof repair infill areas.

1. Basis of Design Manufacturer/Product: Carlisle VapAir Seal 725TR
2. Acceptable Manufacturer/Product:

a. JM Vapor Barrier SA
b. Equivalent product of other named roofing manufacturers.

B. Application: Self-adhere membrane to insulation at areas of insulation repair.

2.07 INSULATION ACCESSORIES

A. General: Roof insulation accessories recommended by insulation manufacturer for intended use and compatible with membrane roofing.

B. Insulation Adhesive: Insulation manufacturer's recommended spray-applied, low-rise, two-component urethane adhesive formulated to attach roof insulation to substrate.

1. Bead-applied, low-rise, one-component or multicomponent urethane adhesive.

C. Tapered Edge Strips: ASTM C 208, Type II, Grade 1, cellulosic-fiber insulation board, if applicable.

2.08 PARAPET SUBSTRATE BOARD

AD1

A. Plywood per Section 06 10 53 – Rough Carpentry for Roofing:

2.09 ROOFING ACCESSORIES

A. Wood plates, nailers, curbs, blocking, stripping, pipe supports, and similar members in connection with roofing and flashing: Conform to the requirements of Section 06 10 53 – Rough Carpentry for Roofing.

B. Metal Termination Bars: Manufacturer's standard predrilled stainless-steel or aluminum bars with rounded edges, capable of securing the single ply roofing membrane material without cutting or otherwise damaging the membrane material, approximately 1 by 1/8 inch thick; with stainless steel screw fasteners with expansion shield and reverse bend for sealant application along the top edge.

C. Plumbing Vent Flashing (Pipe Seal): Pre-molded boot with pressure-sensitive seal and stainless steel draw-band clamp shall be approved and supplied by the membrane supplier.

D. Walkways: Factory-formed, nonporous, heavy-duty, slip-resisting, surface-textured walkway pads sourced from membrane roofing system manufacturer.

E. Expansion Joint Supports: Provide factory fabricated extruded EPDM Sponge, compatible with EPDM membrane and flashings.

F. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, termination reglets, cover strips, sealants and other accessories.

G. Liquid-Applied Flashing**:** Two-component polyurethane waterproofing system for transitional flashing between EPDM roofing membrane and sheet metal penetrations through roof.

1. Carlisle CCW-703-V Liquiseal

H. Pitch Pans:

1. Dimensions: 3 inch flanges with adjustable width from 4 inches to 7 inches, and adjustable height from 2 inches to 4 inches.
2. Material: Stainless Steel.

a. Rain Collar 24 gauge stainless. Joints welded/soldered watertight.

2.10 AUXILIARY MATERIALS

A. General: Furnish auxiliary materials recommended by roofing system manufacturer for intended use and compatible with EPDM membrane roofing including, but not necessarily limited to, the following.

1. Membrane bonding adhesive.
2. Membrane perimeter securement materials and method.
3. Membrane splicing tape.

B. Sheet Seaming System: Manufacturer's standard materials sealing lapped joints, including edge sealer to cover exposed spliced edges as recommended by manufacturer of single ply roofing system.

C. Cant Strips and Flashing Accessories: If required by roofing manufacturer, provided at locations indicated and at locations recommended by manufacturer and including adhesive tapes, flashing cements, and sealants.

D. Bonding Adhesive: Type recommended by the manufacturer of the single ply membrane for the particular substrate and project conditions.

E. Other Materials: Provide splicing cement, lap sealant water cut-off mastic, prefabricated pipe seals, pourable sealer, pitch pockets, and other related items as recommended by the membrane manufacturer for conditions of construction and as required for warranty and performance requirements.

PART 3 – EXECUTION

3.01 EXAMINATION

A. Installer of elastomeric roofing system must examine substrate and conditions under which roofing work is to be performed and must notify Contractor, in writing, of unsatisfactory conditions. Do not proceed with roofing work until unsatisfactory conditions have been corrected in a manner acceptable to installer.

1. Verify deck is clean and smooth, free of depressions, waves, or projections, and properly sloped to drains.
2. Verify that roof openings and penetrations are in place and set and braced and that roof drains are securely clamped in place.
3. Verify that deck is clean and smooth, free of depressions, projections or ripples, and is properly sloped to internal drains.
4. Verify deck surfaces are dry and free of debris and other contaminants.
5. Adhesive cannot be applied to a wet or a damp surface.
6. Do not apply roofing materials to damp, frozen, dirty, dusty, or deck surfaces unacceptable to manufacturer.
7. Verify that wood blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.
8. Beginning installation means acceptance of existing substrate.

AD1

3.02 PREPARATION

A. General: Comply with manufacturer's instructions for preparation of substrate to receive the roofing system and with provisions of preparation of roofing per Section 07 01 50.

B. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove blisters and sharp projections.

AD1

C. Prevent compounds from entering and clogging drains and conductors and from spilling or migrating onto surfaces of other work.

D. Where shown or indicated, provide new wood nailers per Section 06 10 53 for securement of metal flashings and roof specialties.

E. Provide temporary closures to assure that moisture does not damage any completed section of the new roofing system. Completion off flashings, terminations and temporary closures must be completed a work progresses to provide a watertight condition.

F. Install flashings, and accessory items as shown and if required by manufacturer even though not shown.

G. Verify that wood blocking, curbs and nailers are securely anchored and that roof openings and penetrations are in place and set and braced. Verify that roof drains are properly clamped into position.

3.03 ROOF PROTECTION

A. Protect existing roof membrane and rooftop appurtenances from damage during construction operations. Provide plank or plywood protection for wheeled or other traffic over existing building roof surfaces. Protect existing roof membrane and rooftop appurtenances from damage during construction operations. Temporary protection shall be erected/installed at all interior and exterior locations as required to prevent damage to existing surfaces.

B. After completing roofing (including associated work), institute appropriate procedures for surveillance and protection of roofing during remainder of construction period. At the end of the construction period, or at a time when the remaining construction will in no way affect or endanger roofing, make a final inspection or roofing and prepare a written report to School District Board, describing nature and extent of deterioration or damage found.

C. Repair or replace (as required) deteriorated or defective work found at the time of final inspection to a condition free of damage and deterioration at the time of Substantial Completion and according to the requirements of the specified warranty.

3.04 INSULATION APPLICATION

A. Coordinate installing membrane roofing system components so insulation is not exposed to precipitation or left exposed at the end of the workday.

B. Comply with membrane roofing system manufacturer's written instructions for installing roof insulation.

C. Install roof insulation with long dimension running perpendicular to the roof slope; long joints laid in a continuous straight line with end joints staggered by half a board length. Butt all boards as closely as possible.

1. Cut insulation at vertical intersections to allow a clearance of not more than 1/4 inch.
2. Trim and fit insulation accurately at all deck protrusions and terminations as required for a smooth transition with no breaks or sharp edges. Miter insulation boards at ridges and elsewhere to prevent open joints or irregular surfaces.
3. Adhesively attach Insulation: Install insulation and secure to substrate as follows:

AD1

   a. Adhesively attach insulation using adhesive bead at spacing and coverage rate required by the manufacturer for roofing warranty.
   b. Allow the adhesive to rise up approximately 1/8 inch to ¾ inch, depending on dispensing method, and develop strings prior to setting insulation boards into adhesive.
   c. Walk board into the adhesive using weighed rollers to ensure full embedment per manufacturers requirements.
   d. Designate one person to walk/roll in all boards. Relief cuts may be necessary to allow lifted board to lay flat, or constant weight (a minimum 10 lbs for 5-15 minutes per lifted area) may be necessary to achieve adequate adhesion.

4. Where indicated for slope, install tapered insulation to achieve positive drainage (no ponding water) and to maintain a minimum slope of 1/4 inch per foot; install tapered insulation with fasteners or adhesive as recommended by membrane manufacturer. If required due to the minimum thickness of tapered insulation, install tapered edge strips of high density wood fiber board to provide a smooth transition to the flat areas.
5. At drains, install tapered insulation directly over thermal barrier; carry tapered insulation back from drains a minimum of 24 inches; bevel insulation flush with drain body. Trim surface of insulation where necessary at roof drains so completed surface is flush and does not restrict flow of water.
6. Exercise care when handling and attaching insulation so as to not damage or rupture the facer and surface.
7. Do not install more insulation board that can be covered with cover board and roofing membrane by the end of the day or the onset of inclement weather.

D. Install crickets in areas of roofing at rooftop appurtenances larger than 2’-0” x 2’-0” in size, to provide positive sloping away from rooftop units and to roof drains.

E. Provide 96 inch x 96 inch sumps around all roof drains using tapered insulation. Install with a constant, gradual slope from the perimeter of the sump to the drain bowl. Severely sloped sumps will be rejected.

F. Complete installation of roof drain assembly on a daily basis. Temporary installation at drain bowl assemble shall not be allowed. Provide clamping rings and sealant to assure a water tight installation at the end of each work day.

G. Trim surface of insulation where necessary at roof drains so completed surface is flush and does not restrict flow of water.

3.05 INFILL AREA MATERIALS INSTALLATION

A. Immediately after removal of selected portions of existing membrane roofing system, and inspection and repair, if needed, of deck, fill in the tear-off areas with coated glass faced polyisocyanurate insulation so that infill areas is flush with the existing construction and ready to accept roofing membrane.

3.06 INSTALLATION OF COVER BOARDS (PARAPETS)

A. Install cover boards insulation with long joints in continuous straight lines with end joints staggered between rows. Offset joints to insulation below a minimum of 12 inches in each direction over insulation layers.

1. Trim cover board neatly to fit around penetrations and projections, and to fit tight to substrate.
2. Cut and fit cover board tight to nailers, projections, and penetrations.
3. Adhere cover board to substrate using adhesive according to SPRI's Directory of Roof Assemblies listed roof assembly requirements for specified Wind Uplift Load Capacity and FM Global Property Loss Prevention Data Sheet 1-29, as follows:

    a. Set cover board in a uniform coverage of full-spread insulation adhesive, firmly pressing and maintaining insulation in place.

B. Application: Backside of parapets and gutter drain areas as indicated.

3.07 ADHERED MEMBRANE ROOFING INSTALLATION

A. Start installation only in presence of manufacturer's technical representative. Manufacturer's technical representative shall also periodically inspect progress and quality of work.

B. Install EPDM sheet over area to receive roofing according to roofing system manufacturer’s written application instructions. Nothing specified herein shall supersede roofing system installation in accordance with manufacturer’s approved installation procedures. Unroll sheet and allow to relax for time period required by manufacturer. Accurately align sheets and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.

C. Cut sheets to maximum size possible, in order to accommodate contours of roof deck and proper drainage across shingled laps of sheets. Avoid membrane seams at or near roof drain locations.

D. Fully Adhered Membrane Roofing:

1. Apply adhesive to surfaces to be bonded and roll into place when adhesive has properly cured. Treat seams with special cement and apply sealant to exposed sheet edges, tapering application as recommended by manufacturer.

E. Where flashings are surface mounted against walls or roof mounted equipment, anchor flashings with manufacturer's continuous metal termination bars. Fill joint between flashing bar and wall with recommended sealant.

F. Install roofing manufacturer's control joint materials to isolate roof into areas as shown. Seal roofing membrane sheet to joint flange; apply sealant to edge or seam.

G. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed during same day.

H. Clean splice areas and apply adhesive to surfaces to be bonded. Treat seams with special cement and apply sealant to exposed sheet edges, tapering application as recommended by manufacturer.

I. Install flashings and metal counter flashings, and accessories at locations and as recommended by manufacturer.

J. Apply daily seal for temporary sealing of membrane edge to existing roofing at end of each day's work to prevent water infiltration to roofing substrate.

K. Pitch Pockets:

1. Fabricate and install new pitch pockets from galvanized steel in accordance with NRCA and roofing manufacturers recommendations.
2. Fill the pocket halfway to the top with non-shrink grout and the remainder with pourable sealer.
3. Slope fill away from the penetration to the edge of the pocket.
4. Install metal rain collars with drawbands that cover and overlap the entire pocket and caulk the top of the drawband with sealant.
5. Strip in the metal flanges of the pitch pocket per the sequence described above for stripping plies.

3.08 INSTALLATION OF FLASHINGS

A. Install sheet flashings and preformed flashing accessories and adhere to substrates according to membrane roofing system manufacturer's written instructions.

B. Apply solvent-based bonding adhesive to substrate and underside of sheet flashing at required rate and allow to partially dry. Do not apply bonding adhesive to seam area of flashing.

C. Flash penetrations and field-formed inside and outside corners with sheet flashing.

D. Clean seam areas and overlap and firmly roll sheet flashings into the adhesive. Weld side and end laps to ensure a watertight seam installation.

E. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

F. Install counterflashing at wall and curb flashing.

G. Install drawband collars at all pipe penetrations.

3.09 ROOFING RETROFIT DRAINS

A. Fully adhere base ply to drain and turn down 1 inch inside drain.

B. Cut out opening, install clamp ring and strainer. Seal clamp bolts.

C. Drain Flashings:

1. Fully adhere roof drain flashing, without seams located in drain sump, and installed in strict accordance with the membrane manufacturer's requirement and the enclosed drawings.
2. During the flashing operation, protect drain openings against debris, etc. Prior to roofing activities, inspect the drainage system to ensure proper drainage. Correct defects in drainage immediately. During construction, install drain plugs. Plugs must be removed at the end of each workday or during work stoppage.
3. Taper drain sumps to the drain. In cases where a tapered insulation system is utilized, incorporate drain and drain flashing into tapered design, to ensure continuity of water flow.
4. Check whether the drain bowl and the drain pipe are attached solidly without cause for leakage.
5. Set drain flashing in a bed of water cut-off mastic.
6. Upon completion of roofing activities, check drain pipe to ensure that drain line is free of obstructions.

3.10 WALKWAY INSTALLATION

A. Flexible Walkways: Install walkway products in locations indicated or, if not indicated, from roof access indicated to and around roof-mounted mechanical equipment.

B. Adhere walkway products to substrate according to roofing system manufacturer's written instructions. Space walkway pads one-inch apart to permit drainage.

C. Discontinue walkways over all field splices to provide a minimum one-inch gap over the seam edge.

3.11 FIELD QUALITY CONTROL

A. Manufacturer's Representative: Manufacturer's Field Technical Representative shall inspect construction activities, at start of work and minimum two (2) times during roofing installation, including final inspection:

1. Submit a written report after each inspection noting as a minimum weather conditions, condition of stored materials, work in progress, condition of substrates, number of workers and which workers have completed manufacturers' training programs, and all other pertinent data.
2. Services of manufacturer's field representative are not intended to supersede manufacturer's written requirements for inspection and testing to issue warranty.

B. Final Inspection:

1. At completion of roofing installation and associated work, meet with Contractor, installer, installer of associated work, School District Board, roofing system manufacturer's representative, and other representatives directly concerned with performance of roofing system.
2. Walk roof surface areas of the building, inspect perimeter building edges as well as flashing of roof penetrations, walls, curbs and other equipment. List all items requiring correction or completion and furnish copy of list to each party in attendance.
3. The roofing system manufacturer reserves the right to request a thermographic scan of the roof during final inspection to determine if any damp or wet materials have been installed. The thermographic scan shall be provided by the Contractor.
4. If core cuts verify the presence of damp or wet materials, the Contractor shall be required to replace the damaged areas at his own expense.
5. Repair or replace deteriorated or defective work found at time above inspection as required to a produce an installation which is free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
6. Notify the School District Board upon completion of corrections.
7. Following the final inspection, provide written notice of acceptance of the installation from the roofing system manufacturer.

C. Repair or remove and replace components of roofing system where test results or inspections indicate that they do not comply with specified requirements.

D. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.12 PROTECTING AND CLEANING

A. Protect membrane roofing system from damage and wear during remainder of construction period. When remaining construction will not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and School District Board.

B. Rod and Clean Drain: When complete and roof is free of debris, Contractor shall rod and clean all drain bodies and piping to the first elbow to be clean and free of previous asphalt and coal tar system seepage, re-roofing debris and all other debris that may impede proper drainage.

C. Correct deficiencies in or remove membrane roofing system that does not comply with requirements, repair substrates, and repair or reinstall membrane roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.

D. Clean spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

3.13 INSPECTION AND WARRANTY

A. Upon completion of the installation, an inspection shall be made by a representative of the roofing manufacturer to ascertain that the roofing system has been installed according to the manufacturer's published specifications and details.

B. Warranty to be issued upon approval of the installation.

END OF SECTION

SECTION 09 91 00

PAINTING

PART 1 – GENERAL

1.01 SUMMARY

A. Section includes surface preparation and field painting and finishing of interior surfaces including:

1. Tectum roof deck exposed ceiling.

B. Related Sections:

1. Section 09 06 00 – High Performance Coatings

1.02 ACTION SUBMITTALS

A. Prepare submittals per requirements of Section 01 33 00 – Submittal Procedures.

B. Product Data:

1. Submit complete schedule of products proposed for use, by brand name and/or number including manufacturer's label analysis and description of products and their suitability for intended use for approval.
2. Identify each material by manufacturer’s catalog number, product name, and generic classification.
3. Include typewritten list identifying paint systems and colors applied to each room, space, or item.

C. Samples for Color and Sheen: Prepare one sample of each opaque finish paint specified in each color and sheen scheduled for appearance verification.

1. Apply to 12 inch by 12 inch by ¼ inch hardboard. Apply sufficient paint thickness to provide proper hiding and appearance.
2. Label each sample to indicate material, color, and sheen.

1.03 QUALITY ASSURANCE

A. Applicator Qualifications: A firm or individual experienced in applying paints and coatings similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance.

B. Source Limitations; Obtain block fillers and primers for each coating system from the same manufacturer as the finish coats.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in sealed containers, premixed and packaged by the manufacturer (or his authorized distributor), bearing the manufacturer's standard label showing trade name and number, label analysis, and directions for use.

1. Label containers to indicate manufacturer’s name, Product name and type of paint, brand code or stock number, date of manufacturer, coverage, surface preparation, drying time, cleanup, color designation, and instructions for mixing and reducing.
2. Do not open containers until contents are to be used.

B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 degrees F and maximum 90 degrees F. Maintain containers used in storage in a clean condition, free of foreign materials and residue, and with labels maintained in legible condition.

C. Upon completion of work, leave storage area clean and in same condition as remainder of work.

1.05 ENVIRONMENTAL REQUIREMENTS

A. Environmental Conditions: Comply with the more restrictive of the following or manufacturer’s requirements under which systems can be applied.

B. Provide lighting level of 80 foot candles measured mid-height at substrate surface during application of paints.

1.06 COORDINATION

A. Review other section specifying prime coats to ensure compatibility of the total paint system for various substrates.

1. Upon request from other trades, furnish information on characteristics for finish materials proposed for use to ensure compatibility of various parts.
2. Test compatibility of existing coating, including shop applied primers and previously applied coating, buy applying specified paint to small, inconspicuous area.
3. If specified paint lifts or blisters existing coating, apply barrier or tie coat as recommended by paint manufacturer.
4. If no compatible barrier or tie coat exists, remove existing coating completely and apply paint system as specified for new work.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

A. Except for any special coatings specified or indicated elsewhere, provide painting products of one of the following manufacturers:

1. (Basis of Design) SW) Sherwin-Williams Co., Cleveland, OH
2. (BM) Benjamin Moore & Co., Montvale, NJ
3. (PPG) PPG Paints, PPG Industries, Pittsburgh, PA

Note: Manufacturer designations in parenthesis are used in the Paint and Coatings schedule at the end of this section.

2.02 PAINT MATERIALS – GENERAL

A. Provide manufacturer's 1st line professional quality paint/ coating materials for the coating systems specified. Paint-material containers not displaying manufacturer's product identification will not be acceptable.

B. Material Compatibility: Provide block fillers, primers, and finish-coat materials that are compatible with one another and with the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.

C. Provide related materials, such as linseed oil, shellac, turpentine, or other accessory materials of the highest quality approved for use by the manufacturer of the paint and used within paint manufacturers recommended limits.

2.03 MIXING

A. Use factory prepared colors matching approved samples. Site tinting is not permitted.

1. Thoroughly mix and stir paints before use to ensure homogeneous dispersion of ingredients. Prior to application, blend multiple containers of same material and color by pouring from one container to another several times to ensure uniform consistency, color, and smoothness.
2. Mix only in clean mixing pails of material recommended by manufacturer to avoid contamination.
3. Remove film which may form on surface of material in containers and strain material before using. Stir frequently during use to maintain pigments in suspension. Do not stir film into material.
4. Apply paints of consistency recommended by manufacturer. Thin only within recommended limits using thinners approved by paint manufacturer.

PART 3 – EXECUTION

3.01 INSPECTION

A. Examine substrates, areas, and conditions, with the applicator present, under which painting will be performed for compliance with paint application requirements.

1. Do not begin to apply paint until unsatisfactory conditions have been corrected and surfaces receiving paint are thoroughly dry.
2. Start of painting will be construed as the Applicator's acceptance of surfaces and conditions within a particular area.

B. Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.

1. Notify the Architect of anticipated problems in application, system specifications, or possible incompatibility of coatings over substrates which are pre-primed or primed by others.

C. Conduct alkali testing with litmus paper on cementitious, and masonry surfaces, and do not begin painting if surfaces exceed alkalinity allowed by paint manufacturer.

D. Test moisture content of surfaces using an electronic moisture meter. Do not begin application of coatings unless moisture content of exposed surfaces is within manufacturer's recommended values:

E. Coordination of Work: Review other sections in which primers are specified to ensure compatibility for the total system with various substrates.

3.02 SURFACE-PREPARATION FOR NEW PAINTED SURFACES

A. General: Use the cleaning methods specified in this article, using the gentlest appropriate method necessary to clean the surface.

B. General:

1. Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted. If removal is impractical or impossible because of the size or weight of the item, provide surface-applied protection before surface preparation and painting.
2. Protect elements surrounding the work of this section from damage or disfigurement. Provide drop cloths, shields, and protection methods to prevent spray or droppings from disfiguring other surfaces.
3. Protect floors and adjacent work and materials. Remove and properly place temporary protection and coverings removed from the work area. Repair damage to other surfaces caused by work of this section.
4. Remove empty paint containers from the site. Dispose in accordance with local disposal requirements.

C. Clean and prepare substrate surfaces in accordance with manufacturer's instructions for each particular substrate condition. Remove oil and grease before mechanical cleaning. Clean and correct defects and deficiencies in substrate surfaces to be painted before applying paint or finish treatments.

1. Do not paint over dirt, rust, scale, grease, oil, moisture, or marred surfaces, mildewed surfaces or other conditions detrimental to formation of a durable paint film.
2. Correct minor defects and clean surfaces which affect work of this Section.
3. Seal marks which may bleed through surface finishes.
4. Remove mildew by scrubbing with solution of tri-sodium phosphate and bl0each solution. Rinse with clean water and allow surface to dry thoroughly.
5. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.

D. Cementitious Materials: Prepare concrete, concrete masonry block, surfaces to be painted. Remove efflorescence, chalk, dust, dirt, grease, oils, and release agents. Roughen as required to remove glaze. If hardeners or sealers have been used to improve curing, use mechanical methods of surface preparation.

1. Use abrasive blast-cleaning methods if recommended by paint manufacturer.

2. Determine alkalinity and moisture content of surfaces by performing appropriate tests. If surfaces are sufficiently alkaline to cause the finish paint to blister and burn, correct this condition before application. Do not paint surfaces where moisture content exceeds that permitted in manufacturer's written instructions.

3.03 PROTECTION AND MASKING

A. Protect areas retaining their original finishes from damage and overpaint.

B. Protect the work of other trades against any overpainting, marring, masking residue, or other damage.

C. Safeguard the building's lighting fixtures, floors, natural woodwork, masonry work, and equipment and materials to be installed.

D. Mask, tape, and take great care when applying finish materials to areas adjacent to original finishes. Use products that will not damage surfaces or leave adhesive residue.

E. Mask off with masking film and masking tape and/or cover with drop cloths all building elements and equipment not to be decorated prior to material application to ensure that over-spray or damage does not occur.

F. If accessibility to surfaces is restricted, it is the paint contractor's responsibility to request that the obstructing materials be moved.

3.04 APPLICATION

A. Apply paint according to manufacturer's written instructions. Use applicators and techniques best suited for substrate and type of material being applied. Coat all surfaces specified, scheduled, illustrated, and otherwise exposed unless specifically noted otherwise.

1. Apply paint of type, color, and sheen as scheduled.
2. Number of coats specified is the minimum number acceptable.
3. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.
4. Provide finish coats that are compatible with primers used.
5. At any surface which is not scheduled to be painted, but which has be affected by cutting and patching or selective demolition, paint the surface with the pertinent coating system for the substrate type as scheduled in this section to the extent of the surface area. At ceilings to the extent of the ceiling area in each space.

B. Scheduling Painting: Apply prime coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.

1. The number of coats and the film thickness required are the same regardless of application method. Do not apply succeeding coats until the previous coat has cured as recommended by the manufacturer. If sanding is required to maintain a smooth, even surface according to manufacturer's written instructions, sand between applications.
2. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.
3. Omit primer on metal surfaces that have been shop primed and touchup painted with compatible materials.
4. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance. Give special attention to ensure edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
5. Allow sufficient time between successive coats to permit proper drying. Do not recoat surfaces until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and where application of another coat of paint does not cause the undercoat to lift or lose adhesion.

C. Apply paint systems to total dry film thickness in manufacturers specifications. Apply material at not less than manufacturer's recommended spreading rate. Do not exceed maximum single coat thickness recommendation by paint manufacturer. Do not double-back with spray equipment by building up film

thickness of two coats in one pass. Ensure that edges, corners, crevices, welds, and exposed fasteners receive dry film thickness equivalent of flat surfaces.

D. Prime Coats: Before applying finish coats, roll a prime coat of material, as recommended by the manufacturer as follows:

1. Apply a prime coat to material which is required to be painted or finished and which has not been prime coated by others.
2. Re-coat primed and sealed walls and ceilings where there is evidence of suction spots or unsealed areas in first coat, to assure a finish coat with no burn-through or other defects due to insufficient sealing.
3. Roll and redistribute paint to an even and fine texture. Leave no evidence of rolling such as laps, irregularity in texture, skid marks or other surface imperfections.

E. Pigmented (Opaque) Finishes: Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.

F. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not in compliance with specified requirements.

3.05 CLEANING AND PROTECTION

A. Cleaning: Comply with Section 01 77 19 – Closeout Requirements. Promptly remove spilled, splashed, or spattered paints. Clean spots, oil, and other soiling from finished surfaces using cleaning agents and methods which will not damage materials.

1. If completed construction is damaged beyond normal cleaning or repair by painting operations, replace damaged items at no additional cost to Owner.
2. Maintain premises and storage areas free of unnecessary accumulation of tools, equipment, surplus materials, and debris.
3. Collect waste, cloths, and material which may constitute fire hazards and place in closed metal containers; remove from site daily along with empty containers.

B. Protection: Protect finished work in accordance with Section 01 50 00 – Temporary Facilities and Controls.

1. Protect work of other trades against damage from paint activities. Correct damage by cleaning, repairing, replacing, and repaint as acceptable to Architect.
2. Provide "Wet Paint" signs and other methods to protect newly coated surfaces. Remove when directed or when no longer needed.

3.06 INTERIOR PAINT AND COATINGS SCHEDULE

A. Schedule: Provide products and number of coats specified. Use of manufacturer's proprietary product names to designate colors, materials, generic class, standard of quality and performance criteria and is not intended to imply that products named are required to be used to the exclusion of equivalent performing products of other manufacturers.

B. Tectum Surfaces:

1. S-W: Pro Industrial Waterborne Acrylic Dryfall.
2. Equivalent product of one of the following:

a. Benjamin Moore
b. PPG Paints

END OF SECTION